

Indian Food Anthropology

And

The Eat Right Movement

Volume - I

Edited by

Vanisha Nambiar



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Volume I

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Edited by

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To the people of India

- Vanisha Nambiar

Cover page paintings by Roshni Vakilna, Megha Naik, and Dr. Rujuta Giri

PREFACE

This book titled “Indian Food Anthropology and the Eat Right Movement” is in tandem with the current National movement of “Be Vocal for Local” and has inputs from over 50 academicians, nutritionists, dieticians, sociologists, botanist, anthropologists, and historians across India. It has been conceived and written during the Lockdown of COVID-19 pandemic 2020.

This book is an inspiration following a National Webinar on “Indian Food Anthropology-A Cross-Cultural Empowerment Symposium for Health Practitioners” and I extend my sincere thanks to the Dietetics Department of Dr. Ram Manohar Lohia Institute of Medical Sciences, Lucknow for their kind support. This book covers the dietary culture across all the states and union territories of India and is brought out in two volumes.

It is the first-ever document on Indian Food Anthropology with cross-cultural regional dietary patterns and aims to orient the readers about the regional food choices (‘EMIC’ views) and attempts to corroborate with the scientific “ETIC views” which are the pillars for healthy diets and EAT RIGHT MOVEMENT.

The book will be very useful for the Indian as well as International students, academicians, practicing dieticians, nutritionists, public health specialists, anthropologists, medical doctors, health care workers, community development professionals, programmers, and international agencies. It should be of interest to politicians, policymakers, bureaucrats, economists, and agriculture scientists and can be a reference material for the travel and tourism industry.

This is my fifth book in the series of Public Health Nutrition (previous books titles are “Textbook on Food Contamination and Safety” (2004); “Food, Nutrition and Health” (*Ahaar, Pooshan Ane Swastya, in Gujarati*) (2006); “Inter-Sectoral Approaches to Improve the Mid-Day Meal Program of India” (2013); “Mid-Day Meal Program: Present, Past, Future” (2014).

The first volume of the book comprises an introductory chapter on theories of food and eat right movement with the anthropology of food in Western India, South India, and Central India. The second volume of the book Indian Food Anthropology and the Eat Right Movement (Volume II), comprises the Food culture of North India, East, and southeast India, and North East India.

Happy reading and feedback awaited!

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January 2021



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**FOOD SAFETY AND
STANDARDS AUTHORITY OF INDIA**

Ministry of Health & Family Welfare

Government of India

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Dated, the 04th January, 2021

Food is one of the most important basic needs of human life. As the human civilization progressed, various ways and means were invented for arranging the food for consumption. But food has never been governed solely by nutrition. Food is also shared and an expression of altruism among people. All major festivals and celebrations around the world are food centred. As everyone must eat, what we eat becomes a powerful symbol of who we are.

Historians look at food as one of the most important elements of cultures, reflecting the social and economic structures of society. Prehistorians tried to explore this dimension by linking food with evolutionary perspectives and issues of migration/diffusion etc. Anthropology and history offer us the opportunity to explore food historically and culturally.

Indian cuisine is probably the oldest, dates back over 5000 years. Each region has its own traditions, religions and culture that influence its food. The diverse climate in the region, ranging from deep tropical to alpine, has also helped considerably broaden the set of ingredients readily available. Later, invasions from Central Asia, Arabia and Persia and others had a deep and fundamental effect on Indian cooking.

Islamic rule introduced rich gravies, pilafs/biryani and non-vegetarian fare such as kebabs, resulting in Mughlai cuisine, as well as such fruits as apricots, melons, peaches, and plums. The Portuguese and British introduced foods such as squash as well as cooking techniques like baking.

The common thread throughout the centuries remains the distinct mixing of spices that invariably give Indian cuisine its flavour and aroma. The many similarities between the culinary regions of India are highlighted with an exquisite use of spices and flavourings.

But recent observations show a drastic change in the eating habits of the Indians due to the transition in their lifestyles. In the last few decades, both developed and

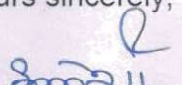
developing countries have been experiencing many changes in their ways of living which has led to an increased demand for convenience and processed foods. Food like pizza, burger, potato fries have gained popularity in India but has resulted in a host of non-communicable diseases as well. This increase in demand of processed foods has made people forget to enjoy fresh, local, seasonal foods.

Over the past 4 years, a peoples' movement for safer and healthier food and sustainable diets is shaping up in India. This movement, the Eat right movement has the vision to transform the country's food environment through a systems approach. Mass mobilization to nudge citizens to eat right and social and behavioural change by adopting Triple-E strategy (Engage, Excite and Enable) for consumer empowerment has been adopted. People are encouraged to shift largely to local, regional, seasonal, plant-based, whole-foods. Traditional Indian food, infused by the ancient Indian wisdom of Ayurveda is being popularised.

The nutritional importance of traditional foods needs to be recognized and popularized. Traditional food products are socially, culturally, and economically important. Traditional foods play an important role in ensuring food security and hold a tremendous potential in combating malnutrition to a significant extent.

The book beautifully captures Indian Food Anthropology and the Eat Right Movement with chapters written from experts in the area of food and nutrition. This would help in achieving the vision of creating awareness about our rich traditional foods and its importance.

Yours sincerely,


(Inoshi Sharma)

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Director



Prologue

It gives me great pleasure to introduce this book on Food anthropology and Eat right movement, which is very timely in the present context where the country is in epidemiological transition with some reduction in indicators of undernutrition with concurrent significant increase of overweight-obesity and their consequences due to altered dietary and activity patterns. Anthropological study of food not only deals with historical, ethnic and cultural perspectives but also with social as well as cross cultural aspects as to how migration and settlements have brought changes in agricultural, food and dietary practices. This book also gives a historical background on evolution of traditional diets and their importance with regards to culture and ethnicity. In addition, this is an excellent compilation of various regional diets, recipes, summary of best practices across India along with their nutritional significance by leading experts in the field of nutrition and dietetics. Since India is a country with diverse cultural and dietary practices this book makes readers aware of several traditional dietary practices which are unknown to majority and are also of much use in planning a diversified diets which are both nutritious and also acceptable to all.

It is the need of the hour that we document the diverse dietary practices that are prevalent in India and at the same time attempt to bring them into practice for the health and wellbeing of the population. Majority of present day health problems or disease pattern can be attributed to faulty or ill balanced diets consisting of convenient foods. The different food grains, fruits and vegetables which are locally available in different seasons are good for health when consumed fresh, and also their accessibility and availability will not be a major concern.

I appreciate the efforts taken by the expert group to bring out this book to promote and popularise the traditional age old Indian culinary and dietary practices which would help in achieving optimal health for all. Coming from the prestigious MS University, Baroda, I wish that this book encourages students in the field of nutrition science to take up research and demonstrate traditional food role in nutrition security and health in India.

I wish Dr. Vanisha Nambiar and her partners in this endeavour a great success with this book and also look forward to similar efforts in future which would be useful to all stakeholders like researchers, academicians, dieticians as well as common people.

(Hemalatha, R)



This book is inspired by my mother, my all-time supporter, a living legend, and a true practitioner of healthy Indian Foods and the Eat Right Movement

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“Persistent questioning and healthy inquisitiveness are the first requisite for acquiring learning of any kind.” -Mahatma Gandhi

I would like to use this opportunity to acknowledge and extend my heartfelt gratitude to all those who have made the completion of this book possible.

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Vanisha Nambiar

January 2021, Vadodara, India

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UNDERSTANDING INDIAN FOOD ANTHROPOLOGY FOR THE EAT RIGHT MOVEMENT

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ABSTRACT

Anthropologists use the concept of a Food System which involves understanding the general characteristics regarding usage, ingredient combinations, and food preparation including food cultivation, food production, cooking process, and food consumption. To strengthen the Eat Right Movement and improve the dietary patterns and nutritional status of India's population understanding Indian food anthropology is essential. Various aspects of food systems originating from cultivation to food consumption need to be studied holistically. India is not only a land of diverse religions and culture but also a land of varied physiographic regions. Thus it is important to listen to the regional people of India, understand their perceptions and diets, and then be their advisors of health and nutrition. Such an approach that understands the population in terms of their ethnography will enable both the health as well as policy planners and executioners to understand the etiology of any disease and the solutions in terms of diet plans or regional social security nets made by the Government of India will be more sustainable.

INTRODUCTION

Availability of healthy local foods and a balanced diet are the most important factors for maintaining a good nutritional status and good health. Food insecurity and imbalanced diets are the root cause of malnutrition and the onset of diseases. This book on Indian Food Anthropology and the Eat Right Movement is based on the principle that food, anthropology (culture), agriculture, and health are all interconnected.

Food practices reflect cultural identity, as well as the social conditions and include methods, opted for selection, preparation as well as serving of food, and all these factors further affect the consumption pattern of food. Our team has initiated research work in Indian Food Systems and developed the **Agri-**

Nutri-Health model for improving maternal and child health for this country (Nambiar and Desai, 2017).

The recently released National Health and Family Survey (NFHS 5, 2019-20) data have indicated that India has a long way and need to change its course of action if it has to reach the targets set by the Sustainable Development Goals (SDGs). On one hand is the growing wealth leading to its consequent changes in consumption patterns and on the other hand ignorance and poverty leading to undernutrition are challenging our food system's ability to provide nutritious food, or to contribute to enhanced livelihood opportunities in an environmentally sustainable way. With growing attention to **nutrition–agriculture linkages**, understanding how to create nutrition-sensitive agriculture and sustainable food systems is an essential task for the future of India.

Economically strong communities are also seen with improper food habits which are reflected in their consumption pattern of an excess of fats, refined grains, and sugary foods and drinks (Global Nutrition Report, 2020). There is an improvement in some indicators in some states, but on the whole, in most states there is a worsening in indicators such as childhood stunting (13 out of 22 states see an increase), wasting (12 out of 22 states see an increase) and underweight (16 out of 22 states see an increase) reflecting that the people's ability to access good quality nutrition has reduced. This data has also set an alarm to the Government and the stakeholders that along with a multi-sectoral approach, corrective measures and policy decisions in the right direction need to be made for various policy interventions related to areas of health, population resources, and nutritional levels of women and children.

ANTHROPOLOGY OF FOOD

Food culture is known to bring together families, communities, States, and Nation together. The **world's food systems** touch every aspect of human existence – making them not just essential but also valuable and important instruments of change. The history of Anthropology which is a scientific discipline has been designed and influenced by cultural aspects in which food has been the object of analysis and an important part of studies related to societies as well as kinship (Erick, 1987).

Social anthropology in India is rich in village field data but the subject of food in culture is quite recent both in social and nutritional sciences. Many academic disciplines have taken up the issue of food habits and food consumption and have encountered the shortcoming that people's food habits are analyzed in isolation with the general socio-cultural configuration of the society as a whole.

Anthropology of food is a sub-discipline of anthropology that connects an ethnographic and historical perspective with contemporary social issues in food production and consumption systems. Human Society its culture and tradition revolves around food and hence it can be considered as its essential component therefore the historical along with the cultural scene is essential to understand. This study includes analysis of food along with in-depth analysis of social, ecological, and biological aspects as food intake is influenced by the environment which is constantly changing with time in communities (Mintz and Bois, 2002).

Consumption patterns are influenced by physiological, social, political, economic, and aesthetic aspects too. The **definition** of Anthropology of food is “the set of representations, beliefs, knowledge, and practices inherited and/ or learned that are associated with food and shared by individuals of a certain culture or social group” (Schuster, 2011).

GEOGRAPHY AND INDIAN FOOD CULTURE

India is not only a **land of diverse religions and culture** but also a land of varied **physiographic regions** ranging from Himalayan Mountains, Peninsular plateau and Ghats, Indo-Gangetic Plains, Coastal Plains, Thar Desert, and Islands. Moreover, India is a diverse nation with many different cultures and each region’s cuisine is a result of many reasons such as its political and geographical history (including the influence of invasions from a foreign land, traders of silk route, colonial rule, and many more), variation in the local culture, geographical location (proximity to the sea, desert, or mountains), and economics.

Variations in temperature and humidity have led to varied vegetation in each region of India which is deeply associated with their food habits and culture. Cuisines in India also vary seasonally, depending on which fruits and vegetables are ripe. The Global Nutrition Report (2020) has emphasized that the simple act of eating is at the crossroads of challenges: from climate change to urbanization, from an imminent epidemic of diabetes to inequalities on a global scale, from the future of agriculture to the rise of obesity and thus it’s time to act!

Food consumption patterns are largely influenced by the **regional traditional practices** and passed on to generations from the primary unit of the family which is influenced by their communities and religion. Thus it is of utmost importance to understand **Indian Food Anthropology** if we want to achieve food and nutrition security for the Indian population. The social security nets and Government of India developmental programs have to be planned and executed keeping in mind the cultural perspective for better acceptability of these interventions.

FSSAI’S EAT RIGHT MOVEMENT

Food Safety and Standards Authority of India (FSSAI), has initiated the Eat Right India movement. The movement is based on three key themes, *‘if it’s not safe, it’s not food’* (**safe food**), *‘food should not only serve the palate but is also meant for body and mind’* (**healthy diets**), and *‘food has to be good both for people and the planet’* (**sustainable diets**) (FSSAI, 2020).

The Eat Right Challenge is envisioned as a competition among districts and cities to recognize their efforts in adopting and scaling up various initiatives under Eat Right India. Further, it is meant to motivate states to improve performance and encourage others to join.

The Eat Right India Movement is working on three key themes through a graded “Food Systems Approach” (FSA) to address these issues holistically by building on the collective action of all stakeholders - consumers, food businesses, community organizations, experts, professionals, and the government.

Multiple actions, not only on the supply-side but also on the demand-side are needed. Therefore, various actionable under the Challenge have been categorized under four sectors:

1. Robust food regulatory system: The food authority has taken informed steps to formulate new and strengthen the existing food standards in the country. This includes setting globally-benchmarked standards, credible food testing, surveillance, and various enforcement activities. Through the Challenge, the aim is to broaden the reach of registration/licensing, enforcement, surveillance, among other core regulatory activities of FSSAI.

2. Self-compliance of food businesses and capacity building: Food may be contaminated with a variety of microorganisms at various stages across the supply chain – post-harvesting, storing, processing, or during handling operations. Through training and certification of both big and small businesses, and unorganized vendors, self-compliance to regulations and standards set by the Authority can be achieved through a graded approach.

3. Changing food environments: Preventive healthcare is critical and lowers the burden of disease on the country and hence boosts the productivity of its people. As the food is a common thread linking citizens everywhere, the food authority's approach is to transform the 'food environment' in the country to provide safe, healthy, nutritious, and sustainable diets to all. While doing so, engagement with both the consumers and the food industry is strengthened.

4. Mass mobilization: To make Eat Right India a people's movement, the authority is planning to organize large-scale citizen-centric campaigns to bring about social and behavioral change. This includes awareness generation about the reduction in the consumption of High Fat, Trans-fat, Salt, and Sugar foods, while promoting consumption of local, seasonal, and fortified foods for better health outcomes. This will create an environment of opting for informed healthier choices.

FOOD DISPARITY AND FOOD VARIETIES IN INDIA

Despite numerous developmental programs and policies including social security nets in India, the problems of the dual burden of malnutrition persist as the vast diversity of India in terms of culture, religion, and geography does not accept the supplements and food baskets provided by the Government in all places. There are many **communities in India with disparities** and still experience poverty, discrimination, and poor nutritional health at far greater rates than mainstream populations which are unacceptable in all human rights frameworks and need urgent attention (CNSS, 2016-2018), (NFHS-5, 2019-20).

There are a high spatial and socio-economic inequality, food deprivation, and social exclusions, especially in areas of low purchasing power. Access is often constrained also by the physical distance between food production areas and consumers, the unavailability of transportation options, volatile food prices, the concentration of power in the global food trade, climate shocks, and, especially in case of crises, the **malfunctioning of safety nets** for low-income urban residents (Imathiu, 2017).

Despite food insecurity, many **indigenous tribes of India** have preserved their culture and traditions

and have their own set of food habits that have been adapted for their survival. Each state of India has several regional tribes and communities in India with **unique foods and traditions** and may provide food sovereignty and food and nutrition security benefits. Thus, it is high time that food anthropology, culture, food security, agriculture, nutrition, and health are not dealt with in isolation.

A **systems-based approach** is needed to address the problem of food security in India and a sustainable food system can be created only by understanding the economic, social, and environmental bases of **each region of India** which is vastly different from each other. The National Institute of Nutrition, India, has laid out the requirements of nutrients that healthy individuals must obtain from food to meet their physiological needs. These recommended dietary allowances (RDAs) are estimates of nutrients to be consumed daily to ensure the requirements of all individuals in a given population (NIN, 2020).

Systems thinking is suggested in the nutrition strategies (USAID, 2014). As per FAO (FAO, 2020), a **sustainable food system** is *profitable* throughout, ensuring economic sustainability, it has broad-based *benefits for society*, securing social sustainability, and that it has a *positive or neutral impact* on the natural resource environment, safeguarding the sustainability of the environment (FAO, 2020).

THE FORWARD PATH

Food studies is a multidisciplinary field of study that involves and attracts philosophers, historians, scientists, literary and language scholars, artists, sociologists, art historians, anthropologists, nutritionists, psychologists, agriculturalists, botanists, economists, artists, film producers and critics, policymakers and consumers.

Therefore, to develop a framework to address the **healthy food intake** by populations understanding and addressing the issues and concerns of the complex interconnected social, economic, environmental, political, and cultural processes that shape these geographies and their implications for food systems is very crucial.

Study of “**food systems**” rather than **just diet plans** for the health and wellbeing of the population is important for the success of the EAT RIGHT MOVEMENT. Evaluation of each aspect of **farm to fork in the food system** is necessary, especially in terms of issues in (re) connections, (dis) locations, and (in) justices that can be reworked through institutional and governance practices that place participatory action and decision-making at the center of an agenda to develop resilient, sustainable food systems through harmonization of international trade and local production with solid rural-urban linkages (IPES-FOOD, 2017).

India’s population is as diverse as the country itself and thus to implement an **Eat Right Movement** in this country, population and food studies are essential. FSSAI’s Eat Right Movement aims to strengthen food safety through the food regulatory environment; provide for safe and healthier food options by enabling the supply side and engage with citizens for adoption and demanding healthier diets.

Eat Right India is a people’s movement with the targeted promotion of dietary diversity and balanced

diets, **eating mindfully and timely**, and promoting large-scale fortification of staples to address micronutrient deficiencies are some ways to encourage the consumer demand for healthier diets. This will ensure a lower incidence of disease and increased focus on preventive healthcare through social behavior change (FSSAI, 2020).

Food system strategies should include a mixed bag of experts and contain a roadmap to facilitate a progressive integration of the rural-urban continuum. Especially enough buffer and documentation of the **resilience of the food system** to sustain diverse shocks (e.g., civil, climate), including the integration of safety nets and modalities of crisis preparedness or **disaster management**. It is also important to create different **livelihood opportunities** by recognizing the **diversity of socio-geographical** contexts and improve their purchasing power and dietary diversity.

Since India is a country with unique geography and history and has regional and seasonal vegetation, food habits, and culture, an **anthropological approach** is needed to understand the “Farm to Fork” concept and improve quality and continuity in the nutrition education to the communities and plan healthy diets. Policymakers and researchers should -

- Explore the Anthropology of food for each region in all the states and union territories of India and their historically and culturally variable foodways, from foraging to industrial agriculture. Make conceptual clarity between diet, food, and health and understand the history and sociology of food.
- Document all the local foods, crops, and traditional cuisines in India which are unknown to the world.
- Promote these local healthy foods and *recipes* using social marketing and improve dietary diversity which in turn will improve both food and nutrition security of the Indian population and reduce malnutrition.

Specifically, each State/Union Territory of India can do the following:-

1. To document and popularize local superfoods of various geographical regions within the geography of their state, tribes, communities and enable people to relate to their traditional best eating practices.
2. To initiate small or large scale production of forgotten foods and empower local communities as entrepreneurs.
3. To empower the dieticians and nutritionists and all the health workers in terms of the rich cross-cultural dietary diversity of India which can be used in their medical nutrition therapy.
4. To encourage and draw the world’s attention to our nutritious regional cuisines and **Be Vocal for Local Foods**.

Thus as per FSSAI (2020), the objective of **Self-compliance of food businesses and capacity building and Mass mobilization** of communities, especially women and children need to be initiated for the entire country as a **single multi-centric project**. Food dynamics and local diversity should be documented and promoted in the mainstream populations.

Only an **inclusive holistic approach** can strengthen **Indian food systems** and make a real impact

on improving the nutritional status of the Indian Population along with the Government of India's developmental programs and policies such as the *Poshan Abhiyaan* (or National Nutrition Mission), Integrated Child Development Scheme (ICDS), Mid-Day Meal (MDM), National Rural And Urban Health Missions and others.

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24. USAID NUTRITION STRATEGY: 2014-2025

HEALTHY DIETS FOR PREVENTING DISEASES AND PROMOTING HEALTH

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The world today faces a grave nutrition situation, malnutrition (undernutrition and overweight/obesity) affecting almost all the countries of the globe and having adverse consequences on development with very high human consequences.

The present era offers us the greatest opportunity to end malnutrition, like never before. The UN Decade of Action on Nutrition 2016–2025 and the Sustainable Development Goals (SDGs) provide global and national guidance to combat malnutrition and accelerate progress. The burden of malnutrition across the world remains unacceptably high, and progress unacceptably slow. Both maternal and child malnutrition followed by dietary risk factors are responsible for more burden of disease than any other cause. Globally, six out of the top 9 risk factors driving the global burden of disease are nutrition and diet-related. Poor diets are now considered a greater risk factor for morbidity and mortality than air pollution, tobacco, alcohol, and drug abuse combined (Global Burden of Disease, 2016).

In India also, seven out of the top 17 DALY's (Disability-adjusted life years: an indicator of economic development of the country) attributable to risk factors are related to nutrition and diet. They are in order of importance: child and maternal malnutrition, dietary risks, high systolic blood pressure, high fasting plasma blood glucose, high total cholesterol levels, high body mass index, impaired kidney function, and low bone mineral density (DALY'S attributable to risk factors in India, 2016).

Similarly, diet quality is also related to 11 Sustainable Development Goals (SDGs). Thus, to advance progress on SDG's we must prioritize diet quality and nutrition in national, regional, and local plans and have evidence-informed strategies with clear implementation plans and committed leadership.

India is also fortunate to have an enabling environment for Nutrition with the launch of the National Nutrition Mission on 8 March 2018 with an ambitious target of reducing the prevalence of stunting from 38.4% to 25% by 2022. India also has its own National Nutrition Strategy "Nourishing India", released in 2017, and lists the high priority districts in the country with a goal of Malnutrition-free India.

To prevent malnutrition in all its forms the focus now must be on making healthy diets available, accessible, affordable to the populations, especially the most underprivileged and marginalized/vulnerable

age groups. The exact make-up of a diversified, balanced, and healthy diet will vary depending on individual characteristics (e.g. age, gender, lifestyle, and degree of physical activity), cultural context, locally available foods, and dietary customs. However, the basic principles of what constitutes a healthy diet remain the same.

Healthy dietary practices start early in life – breastfeeding fosters healthy growth and improves cognitive development and may have longer-term health benefits such as reducing the risk of becoming overweight or obese and developing NCDs later in life.

The complementary feeding period is most important to support optimal growth and development, the child on the completion of six months is introduced to complementary feeding along with a continuation of breastfeeding. Complementary feeding has to be given in adequate quantity, with the inclusion of at least four food groups out of seven food groups per day (Quality), with minimum meal frequency (at least 4 times for breastfed children and 5 times for non-breastfed children) and safety of complementary foods needs to be ensured.

The quantity of foods required from each group is very small and can be provided by every household. However, the dietary data of children (6months-36 months) in 2015 revealed that only 9.6% of children received a minimally acceptable diet (Diverse diet with the inclusion of 4 or more food groups taken with minimum meal frequency every day). Only 11.2% of children belonging to the highest wealth quintiles households received minimum acceptable diets as compared to 7.2% children in the poorest wealth quintiles. Similarly, for minimum dietary diversity or minimum meal frequency, the differences between lowest wealth quintiles and highest wealth quintiles were marginal. Thus, healthy diets must be promoted in all populations irrespective of income levels so that we can improve the nutritional status of children.

In adults also the existence of **triple burden of malnutrition** leading to high levels of non-communicable diseases calls for adhering to healthy diets to prevent not only the occurrence of non-communicable diseases but also to manage them effectively in those who have the problem of diabetes, high blood pressure, cardiovascular diseases, etc.

Although scarce data exist regarding intake of salt, trans fat, fruit and vegetable intakes in India' population, the available data shows Fruit and vegetable consumption in India average 156 gms per day in 2010 Vs recommended 400 gms (National Council of Applied Economic research report, 2014), Trans Fat consumption was reported to be highest in South Asia, while no data was available for India Similarly, the purchase data of Ultra-processed food leveled off with high-income countries and growing rapidly in low and middle-income countries, with no available date for India, Sugar-sweetened beverages consumption has been reported to be growing rapidly in middle-income countries, while no data for India is available (Global panel on agriculture and food systems for nutrition, 2016).

According to the Global Nutrition Report for India in 2019, India has made some progress in reducing levels of under 5 stunting but no progress or worsening situation has been reported for under 5 wastings, anemia in women of reproductive age group, adult male and female obesity, adult male and female diabetes. Looking at the NCD risk factors based on modeled estimates, 17.8% of males were overweight and 2.7% obese in 2016 as compared to female overweight and obesity levels of 21.6% and 5.6%

respectively. about 1/4th of the adult population (26.6 in males and 24.7% in females in 2015) suffered from raised blood Pressure with a sodium intake of 4 gms per day against the recommended level of 2.4 gms per day as per WHO recommendation. For consumption of various food groups and their components: India's consumption of most of the food groups and their components except for whole grains (125gms) was insufficient or lower than the midpoint of theoretical minimum risk of exposure level (TMREL) in 25 years and above males and females taken as 1.3gms for calcium, 250gms for fruits, 365gms for vegetables, 60gms for legumes, 435ml for milk, 20.5gms for nuts and oilseeds, 0.3 gms for omega 3 fatty acids, 11% of total fat of Polyunsaturated fatty acids. Fortunately, the consumption of processed meats, red meat and saturated fats was lower than the TMREL of 2gms, 22.5gms, 7% of total fat respectively. The consumption of sugar-sweetened beverages (TMREL 2.5gms Vs reported consumption of 98gms) and trans fat (TMREL less than 0.5 % of total calories Vs >1.5% of total calories) was reported to be very high in India (Global Burden of Disease, Institute of Health Matrix and Evaluation, 2019). Thus, it can be concluded that India largely consumes an unhealthy diet devoid of the inclusion of various food groups and their healthy components.

For the first time, the financing needs for tackling NCD's in low and lower middle income countries have been calculated and translated into health and economic returns (Saving lives, spending less: Strategic response to non-communicable diseases, WHO 2018). Reducing unhealthy diet tops the list of most cost-effective interventions for reducing NCD burden in adults (for every one dollar invested the return on investment is 12.82), followed by reducing harmful use of alcohol (1 USD investment Vs return of 9.13), Reduce tobacco (1 USD investment Vs return of 7.43), Reduce physical inactivity (1 USD investment Vs return of 2.80), Manage cardiovascular disease and diabetes (1 USD investment Vs return of 3.29) and Prevent and manage cancer (1 USD investment Vs return of 2.74)

Another aspect of diet for the prevention of communicable diseases in the COVID era has drawn the attention of everyone towards the role of a healthy diet in improving immunity. Thus, this is the most opportune time to promote healthy diets amongst populations.

Diet evolves gradually, being influenced by many social and economic factors that interact in a complex manner to shape individual dietary patterns reflected in the study of nutritional anthropology. These factors include income, food prices (which will affect the availability and affordability of healthy foods), individual preferences and beliefs, cultural traditions, and geographical and environmental aspects (including climate change). Industrialization, globalization, and the marketing of foods have primarily fuelled unhealthy food habits in children and adults in the absence of awareness of healthy and unhealthy components of foods.

However, this situation also provides an opportunity to use a variety of diets from various regions and their cuisines which are healthy or can be made healthy (with slight modifications) to be adopted by populations provided there is increased awareness of healthy diets and their components and availability of recipes from various regions of the country. Increased availability of all the foods in all seasons in local markets is an advantage that can be harnessed to promote healthy diverse diets amongst populations.

Locally produced foods are most affordable, and every food system has the potential to provide healthy and nutritious diets to its population. What is required is that each local food system is geared up

to provide diverse foods belonging to all the food groups. Thus, an understanding of what constitutes a healthy diet and how 7-10 food groups can be produced at the local level (as far as possible) and are made accessible and affordable will have to be done.

Dietetics and Nutrition professionals now have an opportunity to contribute significantly by promoting healthy diets amongst populations and spreading awareness about various food groups and their healthy components. All the regional diets and cuisines must be evaluated with a “**diet quality**” lens in various states, districts, and blocks of India with the mapping of availability of diverse foods at the local level in all the seasons at affordable rates. This will help to promote the concept of healthy diets amongst populations. The demand thus generated for healthy diets and their components will motivate farmers to not only produce diverse foods as far as possible but also market its produce locally and reduce transportation costs, post-harvest losses, etc, and hence the cost.

Thus, it is imperative that an understanding of diets consumed by populations with an anthropological perspective is studied as traditions and cultures form a strong base of what people consume and traditional diets should be promoted with slight modifications if required to make those diets healthy.

The **current books explore** the traditional diets of various regions of India and provide the opportunity to know about various traditional diets and cuisines of India and are not only a gastronomic journey but will also provide opportunities to nutritionists and dieticians to evaluate traditional diets and cuisines with “Diet quality” perspective and provide an opportunity to them to modify regional diets to healthy diets, promote them at the local level and influence **greater understanding of various cultures and cuisines**.

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SOCIOLOGY OF FOOD: THEORETICAL PERSPECTIVES

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ABSTRACT

Food is essential not only to humans but also to animals and plants for their very survival. It is the foundation, along with air and water. It is both a basic and a social need. Human body's need for food shapes society through all activities related to food production, consumption, and distribution. Some notable sociologists have worked on food and eating from a sociological and anthropological point of view. The present chapter has examined the interdisciplinary approaches related to food. They range from the anthropological to the historical and postmodern approaches. It examines the semiotics of Barthes, the anthropology of Levi-Strauss, Elias's historical analysis, and Bourdieu's work on the relationship between food consumption and identity. The theoretical perspective includes functionality, dialectics, structuralism, postmodernism, development, Indology, and symbolism. These perspectives deal with the critiques also and present an alternate perspective to study the sociology of food.

Keywords: *Functionalism, dialectics, structuralism, postmodernism, Indology, and symbolism*

INTRODUCTION

Asking what food means can bring forth answers that are in large measure either rhetorical or obvious. Like reproduction, eating unites all living things. The primary cry of a newborn human infant as it comes out of the womb soon becomes a cry of hunger. Also, some of us, at least, depart life still eating, according to Doran, an Englishman writing in the middle of the 19th century. 'Our sires used to make one curious use of sugar, undoubtedly'. Dr. Doran tells us, 'namely when they put it into the mouth of the dying so that the souls might pass way with less bitterness!'. To eat, in other words, is to live.

We, human beings, are touchy about food: deeply affected by its colors, smells, and the context of its consumption. We usually evince sturdy feelings of propriety about the cuisine we love. Food can also excite strong positive feelings. The tastes, smells, colors, and textures of foods are enshrined among our earliest memories. Reawakened by association, they can take us back to our infancy: dependent, fragile,

busily soaking up emotional and bodily nourishment in the arms or on the laps of those who made us human by teaching us to like the foods our culture deemed proper human food. Within this maturational process lies much of what foods can mean and, hence, much of their mystery.

People everywhere are certain that they not only know what is good for people to eat, but also that the way that they are human is somehow connected to their food habits. Why else do members of one culture so often find the food habits of another odd or mildly unpleasant or downright disgusting? Yet, if we know nothing about the culture, we have no way of knowing what food its folk will consider delicious or repulsive. Because we eat so many different things, prepared in so many different ways, we learn to be prepared for surprises, even unpleasant surprises, when it comes to foreign food practices.

Eating habits, in other words, are not only acquired habits but also historically derived habits, unscripted in our natures, except by early social learning. Though people have some idea about what foods are good for them, in no culture everything is eaten. What is more, no people eat only what is thought to be good for them. Food taboos operate, and then, wittingly or unwittingly, they are broken. On the contrary, we might argue that taboos are made to be broken-not all of them at once, and for many people, they are never broken. But if there were no taboos, people would neither know what they ought not to eat nor what to eat when they wanted to break a taboo.

THEORETICAL APPROACHES AND FOOD

Until quite recently, few sociologists have given much attention to food and eating as topics of serious intellectual interest. Perhaps, the sheer biological necessity for human beings to take in nutrients at regular intervals, and even the importance of meals and commensality in the social life of most human societies were so obvious that they were simply taken for granted part of the background of 'what everyone knows; already'. Sociologists have traditionally studied mainly their societies-chiefly of the 'advanced industrial' type, which have perhaps helped to depress their curiosity about what people eat, how they cook it and eat it, how they feel about it, and why. Another reason is from a gender perspective that women's lower status in the public spheres of the economy and polity prompted sociologists to investigate the unprestigious activities of household chores and cooking. Besides, hunger is not part of the general experience of societies of this sort, especially not of the social strata to which most sociologists belonged. At any rate, anthropologists have in the past shown more curiosity about these questions, though sociologists have now begun to follow their lead.

When work by anthropologists is included too, however, it is evident that theoretical phases in this field have followed those in anthropology and sociology more widely. Broadly speaking, functionalism, dialectical, symbolism, Indological, historical, culturological, structuralism, and, more recently, developmental and social welfare perspectives have been prominent.

FOOD IN SOCIOLOGICAL CLASSICS

One looks in vain for any discussion on food and eating in the work of most of the classic sociologists. Diet in Marx's writings refers to a political assembly. To be fair, Engels recorded a fair amount of detail about the abysmal quality of working-class food in his *The Condition of the Working Class in England* (1969, Originally in 1845). But that in it rather set the model for most later sociologists: food and food

habits, when mentioned at all, were generally recorded as indicators of something else closer to the focus of sociological interest—such as social inequality—rather than as things to be explained in their own right. Marx and Engel were very conscious of food as the most basic of the means of subsistence, control over which, as Prince Kropotkin more directly signaled in his *The Conquest of Bread* (1972, Originally in 1892), is one of the greatest themes of human history.

In Durkheim's work, food is mentioned mainly in the context of totemic interdictions and classifications of the sacred and profane about lineage systems (Durkheim, 1915, Originally in 1912; Durkheim and Mauss 1963, Originally in 1903). Among the lesser deities in the sociological pantheon, the picture is only a little more promising. Herbert Spencer, like Durkheim an intellectual ancestor of both present-day sociology and anthropology, also dwelt on the religious functions of foods. He made many references to offerings of food to the dead, speculating that such oblations represented the origins of Church revenues in later stages of social development, and mentioned the part played by fasting in producing abnormal states of excitement as preparation for divining. Besides this, in dwelling on the dominance of the warrior class through much of human history (in militant society), he stressed it was based on the control of food supplies. He also mentioned the irritability that was caused by hunger when food supplies were insecure and uncertain. He also wrote interestingly about food about social inequality. Sumptuary laws regulating the uses of foods, he remarked, could be traced very far back in social development, and went along with 'the subordination of the young to the old, and females to males'. Finally, he observed that among the more curious of the 'various class-distinctions which imply superior rank by implying greater wealth', corpulence-denoting freedom from labor—was a source of pride among Chinese mandarins and admired in women in Africa (Spencer: 1888-90).

Thorstein Veblen in his writing *The Theory of the Leisure Class* (1953), talks about food and drink as means of conspicuous consumption. He drew attention to how 'the custom of festive gatherings probably originated in motives of conviviality and religion' but now also serve an invidious purpose; how 'the consumption of choice articles of food becomes taboo to women and children' and members of the superior class.

FOOD AND DIALECTICAL APPROACH

In a very characteristic essay on *The Sociology of the Meal* (1910), George Simmel also begins from the ceremonial uses of food in religion from ancient times and more generally stresses the social significance of commensality - both its prescription and prescription. To preserve real gains in focuses on cultural and social structure, Simmel employs a dialectical mode of thinking, based on a hierarchical motif of form and content. Although emphasizing form, he shows how to break the bonds of food structuralism. He also shows how one can think of structures as both rigid constraints and yet fictions of our mind, as both dominant and emerging out of lower levels. That is, structuralist explanations can be made just by using one tool of gastronomic sociology that allows for two-way interactions over time and especially among culture, society, and the rest of nature (Symons 1994: 341).

The meal provides the satisfaction of bodily needs and the operation of cultural refinements. According to Simmel (1957a: 243), eating is materially individualistic because physical food is impossible to share. 'What I think, I can let another know; what I see, I can let them see; what I say, hundreds can hear

but what the individual eat, no one can eat under any circumstances'. It means that a meal in its physical substance cannot be shared is far from trivial axioms. It has enabled generations of ascetic philosophers to declare that eating is elfish and transitory, unlike the pursuit of higher and more eternal varieties. Then, Simmel reverses his opening remark that 'eating is shared'. Firstly, the physical function is common to all individuals. We might eat our food, and we all must eat. While this is at a level shared with animals, Simmel finds that eating is shared, secondly, in a social sense. Before people share society, they must share their lowest drives and interests, particularly thirst and hunger. The commonality among people is that all people eat and drink. He argues that physiological sharing is the common basis upon which the social, and thus cultural, sharing is built, and this transformation occurs in the meal.

The very universality of the basic needs inevitably brings people together more firmly and frequently than 'higher or more spiritual motives'. That the meal is a foundation can be seen in the way that religious cults develop communal eating and drinking. Eating and drinking with an enemy transform him or her into a friend (Simmel 1957a: 243–4). In the primitive society, the physical possibility for absolutely anyone to share a meal "lies the immense sociological significance of the meal" (Simmel: 1957a:244). The meal's very polarity lets the dialectician Simmel argue that the highest reaches of culture belong to the appetites, or, as he puts it, the mere physical aspects of nourishment conditions infinitely higher levels (Simmel: 1957a:245). To confirm this, Simmel demonstrates that the basic act of sharing meals necessitates structure. -With whom, when, how, and what we eat form patterns, which are to be examined sociologically. For instance, sharing a meal requires previously thoughtless individuals to agree on a regular mealtime. He postulates that primordial people eat anarchistically when they feel hungry, but taking meals together enforces temporal regularity (Simmel: 1957b:25). Indeed, it can be argued that the human concept of time has a gastronomic basis (Symons 1994: 342). Sharing meals also has a rule which governs companions. A meal can be a means of both social inclusion and exclusion. Simmel cites various historical prohibitions concerning table companions (1957a: 244–5).

People also have to wait their turn, and follow all the other rules of etiquette. Such formalization occurs right up to the table conversation and, even beyond that, to the utmost aesthetic levels. In the cultural regulation, the meal is more refined higher up the social scale. At the lower level, the meal centers on food as fuel and has minimal regulation. Simmel contrasts eating in a farmhouse or at a workers' festival to the refinements of a cultured circle. There are strict regulations for the intricacies of dining, and they have no external purpose. As an instance of refinement given by Simmel, eating with the hand is decidedly self-centered. Connecting the person directly with the material world expresses unmitigated greed. Having to eat with a knife and fork then becomes a classic case of social constraint. Modern individualism emerges at the table, with the appropriating plate as its material basis. The shared meal becomes the origin of individual choice. -Notwithstanding this view, Simmel opposes the taking of individualism in the case of selecting one's food items based on individual taste from the menu chart. He contends that to maintain the tension between individuality and commonality, plates must be identical. A modern person may eat from their plates, but they should not neglect the shared need to feed. "The individual look of a food would not be congruent with its purpose", to be consumed for the shared reason of appetite (Simmel: 1957b:24). This becomes a reverse argument against "narcissism", as so cultural as to have abandoned material roots. Naturalistic feeding develops with increasing politeness.

In asking that a meal should both transcend gross naturalism and yet not become so ridiculously ultra-refined as to be toll individualistic in the idealistic direction, Simmel argues for what we might call the 'simplicity' of the meal, for something of a 'homely' or 'family' atmosphere. Dining-room furnishing needs to be calm, dark, and heavy. Thus, according to Simmel, through his dialectic form and content, higher things in life are achieved. One might relish the mystique generated by sharing a culture when sharing a meal.

One might enjoy its elevated refinements, which permit individual expression. Simmel argues that one should not become so preoccupied with the culture of the meal that one forgets its lowly origins. He warns explicitly of the alienation inherent within the extraordinary paradox that the refinements of table culture are the dialectical negation of material individualism. There is tremendous social power in the meal. 'The aesthetic of the meal never forget what it is supposed to stylize: something situated in the nether regions of organic life' (Simmel:1957:24). Thus, we must accept that we can never really share food. Instead, we share this animalistic need, and we share the social and cultural forms that develop out of this need. We share only our dining table.

Drawing on his usual Kantian distinction between form and content, Simmel emphasized the consequences of the socialization of the meal, the imposition of formal norms on the fluctuating needs of the individual, making possible an 'aesthetic stylization' of the meal independent of its actual food content, and this aesthetic stylization then react back on to individual needs. Simmel also gave some passing remarks about the development of table manners, which partly anticipate the later and much more detailed work of Norbert Elias, *The Civilising Process* (1978).

FOOD AS A COMMODITY

Under the capitalist mode of production, food is a commodity, just like any other commodity. It does not matter what kind of food it is. If enough people want it and have the money to buy it, someone will turn it into a commodity and sell it. And, of course, even if people do not know they want it, companies will do their best through the wonders of advertising to try to convince them to buy it, in effect creating a market for a new (or even a slightly changed) food product. However, we are explaining some of Marx's key concepts from *Capital* to explain why and how the capitalist food system work as it does. It satisfies the basic human need to eat.

Food is at the core of any society. Without food, capitalism or any other economic system would grind to a halt. Food is incorporated into our bodies; we can't live without it because we will be very hungry without it. Food is a special commodity, with essential properties that make it, unlike all others. Food is not just another commodity to be brought and sole. It goes to the heart of human livelihood and society. The difference is important, though, in capitalism, it is just another product that is bought and sold (Rosset:2006). As a commodity, food similar to shirts, automobiles, or smart-phones is produced to be sold in a market.

The production and sale of food commodities respond to market demand, which is different from its need. If you have enough money, you can buy as much food as you like. Those who need food but cannot afford it must produce it themselves, barter for it, steal it, or rely on charity, or else they can go hungry,

as do over one billion people around the world (Holt-Gimenez: 2017:58). Food is indispensable to human labor, and since human labor is a part of the value of all commodities, the value of food permeates the entire economic system.

Just how is the value of food determined? And how does food's value affect its price? Why is organic food more expensive than food from small sustainable family farms? -How does food's value affect our health and the environment? A partial answer to these questions can be found in the laws of food and supply. -For example, when affluent consumers in India found that *Jowar* (a type of grain) and maize are good for health, they were willing to pay high prices for them. The poor people's food quickly became too expensive for the poor, forcing them to look towards other food like wheat for nourishment.

Another reason is economies of scale. Large farms, even though they frequently produce less per acre than small farms, have more market power for buying and selling than small farms, can leverage more capital, and usually benefit from more direct and indirect subsidies than small farms do. Industrial agriculture also does not pay the high energy cost. -They also do not pay for any of the social and environmental costs caused by them through industrial pollution, greenhouse gas emission, food contamination, antibiotic-resistant bacteria, diet-related diseases, poverty, dispossession, and displacement.

According to Holt-Gimenez (2017:0), food can be considered as a particular part of a culture, the amount of energy used to produce it, access to land, the phenomenon of hunger amid plenty, and so on. But most critical for understanding that food is a capitalist food system is the fact that food is a commodity, valued not just as a substance but as potential capital. Food has a use-value (to feed people) and an exchange value (as a commodity).

What value is common to all commodities? All commodities, including food, are the products of human labour. Even honey, made by the planet's beleaguered bees, needs to be collected and processed by human labour. In one way or another, human labour -physical and mental- is common to all commodities and directly or indirectly embeds the value of labour into everything we buy and sell. The value of labour within our food is not easily perceived. As David Harvey says, "When you go to the supermarket you can see the exchange values (prices) but you can't see or measure the human labour embodied in the commodities directly. The embodiment of human labour has a phantom-like presence on the supermarket shelves. Think of the next time you are in a supermarket surrounded by these phantoms!" (Rosset: 2003).

LANGUAGE, SYMBOL AND FOOD

In a line of succession from Simmel and Veblen, David Riesman devoted some brief but illuminating pages of *The Lonely Crowd* (1961, Original_1950:142-5) to 'changes in the symbolic meaning of food'- pages which also anticipate the work of Pierre Bourdieu. Herbert Blumer was right to point out how much may supervene between hunger and eating, but he makes it sound very coolly cerebral: his actor is already very self-controlled. One would hardly guess how compelling a forced hunger can be.

In a very different mode is Pitirim A. Sorokin's *Hunger as a Factor in Human Affairs* (1975), written as a consequence of Sorokin's direct experience in the famines which was followed by the Russian Revolution. With the thoroughness characteristic of his later work, Sorokin carefully classifies the forms

of starvation: deficiency (or absolute) starvation and non-deficiency or comparative starvation, the latter was further divided into individual-comparative and social-comparative forms, raising the problems of what was later to be called 'relative deprivation'. Sorokin then explores among other things the effects on the hunger of temperament, and its relation to techniques of food production, imports and exports, migration, war, criminality, riots, insurrections and revolutions, and the organization of the state.

FOOD AND SYMBOLISM

Food is not only a lens but something we pay particular attention to its material and symbolic constitution. Food allows theoretical possibilities more fecund than almost any other material object precisely because of its ability to tone at one moment inside and another outside the body, to be a routine-and-a-ritual, and for its ubiquity-and-specialty (Bennett:2010). -Food, when aligned with body and place, allows us to imagine both rootedness and routes of dispersal. This is a feature that R.S.Khare and M.S.A.Rao drew attention to long ago when they stated that food "mediates body and mind, work and thought, and person and society" (Khare and Rao:1986:6). Discourse about food is meta-discourse which reframes the symbolic and substantive meanings of food in the South Asian milieu. R.S.Khare's argument about the food serving as a communicative function in South Asia is to strengthen the ties among the people.

FUNCTIONALISM: FOOD AND EATING

Most notable among functionalist anthropologists with a specific interest in food and eating was Bronislaw Malinowski's student Audrey Richards (1932, 1937, 1939; Richards and Widdowson, 1936). Richards set the production, preparation, and consumption of food in their psychological context. She intends to seek that now food is related to the life-cycle, interpersonal relationships, and the structure of social groups. Food-seeing activities necessitated and fostered co-operation within the human group.

The preparation and receiving of food played their part in the maintenance of social structures; thus, 'the preparation of porridge... is the woman's most usual way of expressing the correct kinship sentiment towards her male relatives' (Richards 1939: 127). This mode of reasoning is subject to the standard objections-teleology, circularity, a temporality, and so on-leveled at functionalism in sociology and anthropology generally; on the other hand, with the rise of neo-functionalism in the 1980s, sociologists are now a little more aware of its strengths and weaknesses.

A functionalist orientation also unconsciously underlies much collaboration between sociologists and nutritionists, a common form of research in recent decades, in which current nutritional science is used to evaluate the results of questionnaire or interview surveys of what people eat particular things, the resulting explanations often have a somewhat ad hoc character. For instance, Yudkin and Mckenzie (1964:15-19) contended that on the whole there is a direct relationship between palatability and good nutritional value-that, for example, protein-rich animal foods are in general tastier than starch-rich vegetable foods. But he admitted that the activities of modern food manufacturers now permitted a very significant degree of dissociation between palatability and nutritional values. Besides, the correlation is plausible only if the standards of palatability which prevail in the familiar world of Europe, North America, and similar countries are taken as a yardstick.

STRUCTURALISM: AESTHETIC AND SEMIOTICS OF FOOD AND EATING

The great virtue of the structuralist approach is that it recognizes that taste is culturally shaped and socially controlled. It thus avoids the ad hocery, biological reductionism, and implicit ethnocentrism found in sociological and anthropological writings. Its weakness, arguably, is that in avoiding any suspicion of ethnocentrism, it moves so far to the role of extreme cultural relativism that it overlooks any possibility of explaining differing food habits particularly their origins in terms of purpose, function, or utility.

Structuralism has made itself felt in the sociology of food and eating via the influence of anthropologists like Claude Levi-Strauss and Mary Douglas, and the semiologist Roland Barthes. In contrast to some utilitarian slant of the social nutritionists and the functionalist, the structuralists have always focussed more on the aesthetic aspects of food and eating: in Fischler's phrase, 'while the functionalists looked at food, the structuralists examined cuisine' (1990: 17).

LEVI-STRAUSS

Structuralism since Levi-Strauss has concerned itself more with variability and much less with universality, 'no doubt retreating from the notion of "human nature" which was suspect in its eyes', and it was 'thus that cultural relativism gained its ascendancy in the study of human eating' (Fischler:1990:17). Levi-Strauss structuralism has had a less direct influence on the sociology of food and eating than that of Mary Douglas. -Unlike him, Douglas does not expect to find any universal message, valid for all humankind, encoded in the language of food. Yet, at the same time, since research into small remote societies 'suggests that each individual, by cultural training, enters a sensory world that is pre-segmented and prejudged for him', she shares Levi-Strauss's general hope that research into the cultural aspects of food habits will eventually enable us at least 'to discover the principles and ranking of tastes and smells' (1978:59) but the actual segmentation and ranking will differ from one society to another.

Roland Barthes deserves mention as a structuralist because he influences the sociology of food and eating. Barthes, too, sought the code or grammar underlying people's preferences in the foods they eat. His particular focus was on the semiotics of food advertising and cookery writing.

Attention to the past in the shaping of the present is one quality that makes Pierre Bourdieu an interstitial figure between the structuralist theorists and the later developmental whom we shall discuss shortly. -Bourdieu can be enlisted as a sociologist of food and eating largely based on his book *La Distinction* (1979), subtitled *A Social Critique of the Judgment of Taste*. It deals not just with people's choices of food but with several other aspects of behavior (clothes, furniture, music, visual arts, cinema, and literature) which are apparently according to their preferences, and yet at the same time what these preferences are will be highly predictable if we know a person's social background. While The link with social stratification is close, and lower-class individuals are said to have 'vulgar' tastes while upper-class ones are said to have 'refined' tastes.

The struggle over 'titles of cultural nobility' has gone on for centuries, says Bourdieu, and in this respect, his explanation for the social genesis of tastes, emphasizing the competitive struggle between groups in society for marks of social 'distinction', is more historically informed than the approaches of Levi-Strauss, Barthes, and Douglas.

The work of Claude Fischler who along with Christiane Gringnon and Claude Gringnon is the most prolific among the French sociologists of food and eating shows the principal influence of structuralism, and yet at the same time, Fischler also shares in the criticisms leveled at that tradition. Like Goody (1982:29), he finds the attempt to define biological factors of the explanation of social patterns the least satisfactory part of the legacy of Durkheim (Fischler, 1990), and for him, 'nature/culture' is a 'false dilemma' (1990:48-59). Fischler is highly conscious of change and the necessity of explaining eating habits sociologically.

CULTURAL CONSTRUCTION OF FOOD AND EATING SYSTEM

How might we understand a person for whom food is so important?- Prominent among anthropological works on food are those of Mary Douglas, who has consistently argued for greater attention to the social (as opposed to the nutritive and physiological) aspects of food and eating.- Her theory of pollution suggests that pollution is a quality attributed to things that do not fit in the category system that is marginal and, intestinal.

Douglas defines the aesthetic as distinct from the nutritional aspects of food as 'that part which is subject to pattern-making rules, like the rules of poetry, music or dance', adding that 'the explanation of anyone such rule will only be found in its contribution to the pattern it helps to create' (1974:84).

Mary Douglas has for many years been calling for the recognition of the social significance of food and eating (1966, 1982, 1984). She has focussed on categories relevant to food and eating systems. Food systems are, like myth or ritual systems. Douglas says codes wherein the patterns by which a culture "sees" are embedded. Through an analysis of food and eating systems, one can gain information about how a culture understands some of the basic categories of its world. The first step in such an analysis is the discovery of the constituent units or categories of the eating system; the second step is the discovery of how this system of classification for foods relates to the wider system of social classification.

Mary Douglas (1984:3) has said, "Unlike livestock, humans make some choices that are not governed by the physiological process. They choose what to eat, when and how often to eat, in what order, and with whom." In any society, acceptable and preferred foods are largely cultural.- Contemporary food preferences in India that vary from *halwa-puri* to *Masala-dosa* etc. are based on cultural values. Low-income people express their membership in the society and their adherence to its dominant values through many of the same food choices that characterize the rest of the population, and so they, too, desire and purchase foods with these characteristics (Fitchen:1988:323).

SOCIAL RELATIONSHIPS APPROACH AND FOOD

Whereas Douglas focuses on how food and eating systems reflect distinctions of social category, the work of another group of anthropologists centers on how food is used to develop social relationships of exchange and alliance between the various individuals and larger social units of the system. Marcel Mauss's *The Gift*, first published in 1925, is important to this line of thought. *The Gift* is a reflection of economic systems organized not around the sale but the principle of reciprocal gift-giving.

Mauss focuses on how reciprocal gift exchanges, often of food, bind members of a society together concerning mutual participation and unity. Mauss stresses that the obligation to repay the original gift

derives from the fact that each gift contains some of the self of the giver: “To give something is to a part of oneself. . . In this system of ideas one gives away what is, in reality, a part of one’s nature and substance, while to receive something is to receive a part of someone’s spiritual essence”(1967:10).

The Gift is permeated with an idea analogous to the idea that some of the “self” is inherent in objects that a person gives away. Thus, to give a gift is to give some of oneself, and to receive is to take in some of the self of another person. A gift economy, according to Mauss, is not only a system that promotes the circulation of material goods (as in a market economy) but also a system that promotes the circulation of “selves” and thus creates a mystical economy of participation among individuals, organisms, and objects.

Like capital, our food implies a social relation that embodies the labour, value, ownership, expertise, biology, and power relationships of the capitalist system. This logic of capital rather than the logic of fairness, compassion, ecology, conservation, or health-governs our food. Attempts to change or transform the food system hinge on changing the social relation embedded in food. Because food is a commodity and an existential necessity, our food system impacts all other aspects of our social and economic system, and because we all eat, the social relation of food is pivotal in terms of human well-being. The firms controlling our food system understand this perfectly, exploiting the public use-value of food to extract exchange values for corporate profit. Substantive changes to the food system will affect the entire economic system (Holt-Gimenez: 2017:80).

INDOLOGICAL PERSPECTIVE

Charles Malamoud’s sharp textual analysis on *Cooking the World: Ritual and Thought in Ancient India* (1996) picks the Sanskrit phrase in- *Satapatha Brahmana*, translating it as “Cooking the World”. Malamoud’s litany rites are not exhaustive, because it excludes the ultimate offering of the uncooked soma that the *Vedas* go on about. Yet, in the case of the soma, too, it is food and food for thought. So, it is not always cooking exactly, but at all times, it is the offering of food that ties the world together across ritual cleavages (Ray and Srinivas 2012: 14). Paul Toomey’s *Food from the Mouth of Krishna* (1994) zeroes in on *Govardhan* as an exemplary *Vaishnava* pilgrimage place in northern India, at the intersection of folk and sectarian traditions, focussing on the “kinds of food events observed at temple and feasts; food classification systems and coded sequences followed by ritual specialists in cooking, offering, and distributing food; and finally, meanings conveyed by menu changes and changes in quantities of food offerings in different groups’ (Toomey 1994: 4). Toomey ties ritual and everyday practice together and thus it is a domain of the Indological approach. Francis Zimmermann’s *The Jungle and the Aroma of Meats* (1987) developed a theory of taste and knowledge by taking the example of Indus and Ganges. He suggested that a different body and body of imagination may be at work and traces the system of classification of the natural world.

HISTORICAL APPROACH AND FOOD

K.T. Achaya’s book on *Indian Food: A Historical Companion* (1998), discusses the relationship among discourse, diet, and domesticities. Bernard Cohn’s (1996) attention to the materiality of clothes, the body, and forms of knowledge since the mid-1950s, and his productive harnessing of methodologies in anthropology and history provided the opening to consider diet, disease, and the body.

Nupur Chaudhuri's "*Shawls, Jewelry, Curry, and Rice in Victorian Britain*" (1992) and Susan Zlotnick's "*Domesticating Imperialism*" (1996) provided a template of this direction of inquiry leading to food. A rich seam of research on domesticity and intimacy has subsequently been uncovered, using new sources such as domestic manuals in vernaculars (especially in Bengali) and by revisiting old manuscripts in Persian and English (Banerjee: 2004; Lal: 2005; Sengupta: 2010; Walsh: 2004).

Goody (1982) and Mennell (1985) were both less concerned with the traditional anthropological question of preference for and avoidance of particular foods than with the development of systems of cuisine as a whole. Elias (1982) traced changes in personality make-up and forms of cultural expression in Europe since the middle ages, relating them to broader processes of change in the structure of society, particularly the internal pacification of territory in the course of state-formation. Mennell (1985) took over from Elias an understanding of how broad social, political, and economic changes shape the expression of emotion, manners, taste, and lifestyle, and he applies this in accounting for changing food preferences and emerging cuisines.

In highly simplified form, Mennell's argument is that taste in eating, even appetite itself (see Mennell, 1986, 1987), is formed in the same way that Elias details the shaping of personality make-up more generally. The transition from the medieval oscillation between feasting and fasting, plenty and want, to an emphasis on discrimination at table parallels- indeed is an aspect of the broader shift in the balance between external constraints and self-constraints.

In early modern Europe, food supplies improved; but more than that, the extension of trade, the progressive division of labour, and the process of state formation and internal pacification improved the *security* of food supplies. This, theoretical perspective, thus, gives historical context to the very extensive body of research on eating.

DEVELOPMENTALISM APPROACH AND FOOD

Anne Murcott (1988) had grouped with the books of Harris (1986) Goody (1982), Mennell (1985), and Mintz (1985) as representing a 'materialist' response to structuralism. They share a dissatisfaction with the structuralist legacy, but there is considerable common ground between the structuralists and developmentalists. The latter do not at all deny the power of the symbolic meanings of food in shaping and controlling social behavior. Nor they would fail to acknowledge that, even if he dressed it in a metaphysical garb, Levi-Strauss was making an important connection when he reached the activity to 'nature' and 'culture'.

This connection has been set in a developmental context by Goudsblom (1992), cf. Perles, 1979), drawing on recent discussions on the origins of the human species. Probably, the first cooked foods consumed by Hominids were seeds and meat accidentally roasted and found in naturally occurring wildfires. But it would be a 'short-step' (Brewer, 1978) from there for hominids to gather seeds or hunt small animals and cook them in these natural ovens. And subsequently, at least by the time of *Homo erectus*, the active use of fire for cooking was mastered. From these earliest origins onwards, however, 'nature' and 'culture' stood not in static contrast but dynamic interaction with each other.

Cooking opened up new resources, broadening the range of edible vegetable manner, in particular,

available for human consumption. On the other hand, the regular consumption of a wide range of cooked food most probably influenced the biology of the human digestive system in the long run (Stahl:1984) so that cannot be assumed to be a 'natural' constant. Besides having these nutritional effects, cooking, also Goudsblom argues affected social organization and mentality. Thus, cooking may well have played a significant part in the development of human capacities and social dispositions through the developmental perspective puts this in a very different light from Levi-Strauss's more one-sided mentalistic approach.

Marvin Harris's *Good to Eat: Riddles of Food and Culture* (1986) is determinedly anti-structuralist. The very title is an allusion to Levi-Strauss's famous dictum that some foods are 'good to think'. Harris contended that 'whether they are good or bad to think depends on whether they are good or bad to 'eat' (1986:15). It has long been known that no human group eats everything of potential nutritional value available to it. They all have patterns of preference and aversion, but how are these to be explained?

The geographer Simons (1961) surveyed the food avoidances of the Old World and showed that none of the common sense explanations - such as that people do not eat animals, they domesticate as pets - holds water. Anthropological orthodoxy is that the connection between food objects and their meanings is arbitrary, and therefore, no instrumentalist explanation of food avoidances can be valid. This is the view that Harris sets out to challenge. He sets out to calculate the practical costs and benefits which, in a broad ecological context, underlie some of the most perplexing food preferences and avoidances, though he admits this is no easy matter. He says that "Each puzzling food item has to be seen as part of a whole system of food production, a distinction must be made between long- and short-term consequences, and one must not forget that food is often a source of wealth and power for the few as well as of nourishment for the many' (Harris: 1986:17).

One of the puzzles tackled by Harris is that of the sacred cow in India.- While not doubting its symbolic power, Harris questions how the ban on its slaughter arose. He points out that in the *Rig Veda*, the sacred text of early Hinduism, the slaughter and sacrifice of cattle were central activities. Harris argues that with the rapidly rising population itself made possible by the spread of agriculture using the ox-drawn plough this could no longer be sustained. Beef-eating became increasingly the privilege of the Brahman priestly and Kshatriya warrior castes, while peasants and tradespeople increasingly ate grain, legumes, and dairy products.

Long before modern nutritional knowledge, people must have been aware of the inefficiency of meat-production compared with grain production as a means of generating nourishment for humans: if the grain is consumed by cattle, 9 out of 10 calories in the grain and 4 out of 5 grams of protein are lost for human consumption. In the face of this, there arose popular religious movements as Buddhism and Jainism as opposed to killing. In the ensuing conflict of religions, Hinduism eventually triumphed Buddhism disappeared from the subcontinent by the 8th-century AD - but not before the Buddhist and Jain opposition to meat-eating had been adopted by the high castes. The nutritionally more efficient use of dairy produces survived in all castes, as did the essential use of the ox by the peasant.

Harris's explanation is thus implicitly developmental, and even in a sense evolutionary. Solutions that 'fit' a particular ecological context are hit upon, usually less by rational deliberation than through

unplanned social conflict. The mechanisms generating a range of possible solutions may be in part random (though processes of social development often resemble Lamarckian more than purely Darwinian evolution), but the mechanisms through which one solution emerges is not random, involving as it does selection for an ecological context. Ecological context, however, must be understood to include the prevailing repugnance. The symbolism may seem arbitrary now but was not so in its origins.

Underlying Sidney Mintz's *Sweetness and Power* (1985), a study of the supply of and demands for sugar, is yet another theoretical orientation that of world-systems theory, but the outcome has much in common with Harris, Goody, and Mennell's work. Mintz, too, is critical of structuralism, arguing that meaning is not simply to be 'read' or 'deciphered', but arises from cultural applications.

Meaning is the consequence of activity, and 'not to ask how meaning is put into behavior is to ignore history again' (1985:14). He traces the development of European sugar-cane plantations in the West Indies and elsewhere from the early 16th century involving indentured labour slaves, and the rise of factory-like time discipline in the colonies possibly before it arose in the home economies and the creation of a mass-market for sugar, especially in Britain, the Netherlands, and the United States.

'Sugar surrendered its place as a luxury and rarity and became the first mass-produced exotic necessity of a proletarian working-class'. The consumption of sugar per capita in Britain increased 25 times between 1700 and 1809, and five times more in the 19th century. For all beyond a reasonable doubt, this huge increase can only be explained in terms of the interaction through a time of economic interests, political power, nutritional needs, and cultural meanings. Interestingly, because of the prominence of social competition and emulation in the work of Mennell and Goody, Mintz argues that the adoption of sugar and sweet manufactured foods by the working class in the 19th century had little to do with imitation, but arose in a different context, from the pursuit of calories, not of the display.

SOCIAL WELFARE APPROACH AND FOOD

Research by sociologists into food and eating has been predominantly empiricist, usually motivated by a concern for social welfare and the unequal distribution of nutrition. This concern with food and poverty has more recently been transported on to the global level and given new impetus through the book *Poverty and Famines* by the economist Amartya Sen (1981). Sen contended that famines are not the result of a simple shortage of food available per head of population. Even during famines, food is available entitlement through employment and earnings, through social security, or ownership. In other words, people go short of food because of the economic, social, and political relationships in which they are bound up.

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HEALTH AND NUTRITION AMONG VARIOUS POPULATION OF INDIA: AN ANTHROPOLOGICAL PERSPECTIVE

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ABSTRACT

Health and nutrition are the most important contributory factors for human development. Adequate intake of food and regular nutrition habits are the major enriched aspect for the maintenance of general health status. Cultural practices vary in India with geographical region and religion. India can be broadly divided into four major regions (North, South, East, and West), each with its distinctive language, cultural peculiarities customs, and food practices. India has a rich and highly varied cuisine, varies from region to region and from season to season, and its various diets are strongly related to religion and other cultural factors, as well as local agricultural practices and availability of diverse foods. Traditional food choices usually depend on regional preferences.

Nutrition is a double-edged sword as both over and undernutrition are harmful to health. Undernutrition is particularly harmful in early age groups i.e. childhood and overnutrition in adulthood and after-years but both forms are likely to affect all age groups in near future. Lifestyle changes have brought about a shift into different behavioral practices such as people increasingly choosing away from a diet heavy in cereals. With the current increase in lifestyle disorders around the world, it is important to promote healthy nutrition in all age groups.

The erosion of the “healthy diet” as an outcome of modernization and industrialization has led to the development of dietary supplements and functional foods. A holistic approach is needed to promote the concept of healthy nutrition in the whole country. Multi-sectoral innovative approaches to involve all age groups, keeping in view cultural diversity in food habits and earning capacity is required to make people aware of the importance of healthy nutrition.

Keywords: *Traditional food, Nutrition, Healthy diet, Lifestyle diseases*

INTRODUCTION

Nutrition is the science of food and its relationship to health. Nutrition being the ‘basic human right’ is suggestive of the health and wellbeing of the individual, since ‘we are what we eat’ essentially. Food is an essential part of people’s lives and not just a means of survival. Different cultures have varieties of food and ingredients. These food preferences result in patterns of food choices within a cultural or regional group. Food has been widely studied in the fields of anthropology, sociology, and cultural studies.

Health and nutrition are the most important contributory factors for human development. Adequate intake of food and regular nutrition habits are the major contributing factors for the maintenance of general health status. Good health is essential to nutritional wellbeing, as good nutrition is crucial for maintaining healthy growth and development.

However, the dynamics of economic inequalities; technological interventions, innovations and selective outreach, and globalization has hit every sphere of living and sustenance of which nutrition is no exemption. About massive changes on a socio-economic level, there is a global burden of diseases in developing countries because of the coexistence of under-nutrition and related deficiency and infectious diseases along with overweight and obesity, or diet-related non-communicable diseases as a result of the nutritional transition. The problem is of particular concern in countries like India that have transitional economics and changing lifestyles. These changing lifestyles may compound the increased inherent risk on ethnic groups. With the current increase in lifestyle disorders around the world, it is important to promote healthy nutrition in all age groups; as improving eating habits is not just for an individual but for the whole population.

Lack of awareness about maintaining sound health with reasonable nutritional behaviors leads to the adoption of imbalanced dietary practices. Contemporary lifestyle patterns consist of less labor-intensive activities, intensified mechanization along with stress and work pressures, and other such uninterrupted changes in routine activities have impacted compromised nutrition, in all strata. Then these faulty feeding practices give rise to the rapid set-off for registering cases of over-nutrition and obesity, which further causes an increased prevalence of non-communicable, chronic disorders. While on the other hand significant incidence disclosures for under-nutrition due to inadequate food intake also persists. This dual burden of malnutrition faced by India is not just a result of food and other nutritional causes but the magnitude of these health and nutrition issues get backed by various other factors too (Lakshmi and Prakash, 2020).

TRADITIONAL FOOD HABITS IN DIFFERENT REGIONS OF INDIA

The Indian community is mostly Indo-Aryan and Dravidian in origin. Cultural practices vary in India with geographical region and religion. India can be broadly divided into four major regions (North, South, East, and West), each with its distinctive language, cultural peculiarities customs, and food practices. India has a rich and highly varied cuisine, varies from region to region and from season to season; and its various diets are strongly related to religion and other cultural factors, as well as local agricultural practices and availability of diverse foods. Traditional food choices usually depend on regional preferences.

Indian food predominantly comprises wheat-based breads (roti and naan), basmati rice for special pulaos (rice-based dishes that include vegetables and/or meat), and legumes such as chickpeas and kidney beans. In Northern India, the Punjabi cuisine typically represents foods of all the states north. Dairy products such as paneer, yoghurt, butter, and ghee are used extensively here. Dietary patterns in the East and South are more likely to be defined by meat and fish consumption. Diets in the North and West are more similar to one another, as are diets in the East and South. Southern and North-Eastern parts of India are primarily a rice-eating region. A variety of dals and vegetables are popular here. Both rice and dals are served in several ways- pounded, ground, fermented, boiled, and steamed. Chicken and goat meat are popular all over India, depending on their affordability whereas fish is popular mainly in the coastal areas. And fruits are usually consumed fresh.

Indian traditional diets are of immense variety and the diversified preparations not only offer the whole range of nutrients but also activate digestion and several physiological functions. A few years back, preference for natural foods was given over refined foods and light foods (less oily) over heavy foods. The traditional meals were mostly plant-based with spices and were cooked and eaten fresh at home. They were a combination of cereals, millets, pulses, and spices such as pepper, cumin, and coriander with curd and coconut fulfilling the energy and protein requirements. Those who could afford used to take milk, yoghurt, eggs, and chicken with small amounts of animal meat adding to the protein requirement.

Vegetables and fruits contribute to the intake of vitamins, minerals, and antioxidants required for support functions. Traditional oils from groundnut, sesame, mustard, and ghee are used which are required in small quantities, to absorb fat-soluble vitamins and contribute to several hormonal functions. Edible oil is an important source of fat in the Indian diet. Besides being a source of energy, it adds a special flavor and palatability to the food. The foods were balanced, diversified, and freshly prepared but not stored. Milk by itself is a wholesome food and helps in building bones and is essential for growth and development. But again in the well-to-do communities, excess intake of milk products like ghee, cream, cheese, and paneer – rich sources of saturated fatty acids – led to obesity and related heart diseases. The use of omega 6 rich vegetable oils like sunflower oil can exaggerate the risk of obesity and its consequences, particularly in the Asian-Indian population who habitually consumes a cereal staple diet consisting of refined grains with low intakes of omega 3 fats. The use of oils such as groundnut/sesame/mustard and even soybean or blends of oil seems to be a better option as it can ensure an optimal ratio of saturated, monounsaturated, omega 3, and omega 6 fatty acids and reduce the risk of metabolic problems, a pre-event that leads to diabetes and cardiovascular disorders.

India has a rich culinary heritage that has evolved over centuries. Traditional foods give an exquisite vision of India's rich cultural heritage. Traditional food habits across the country are primarily based on a holistic approach to nutrition. From ultra spicy food to appetizing confectionery and southern curries flavoured with kokum, Indian culinary culture is delicious and diverse. India is a traditional country mixed with several cultures from state to state and every state has its origin of food varieties. North Indian foods are popularly known for their *chapatti*, *dal*, *Nan*, *puri*, *paneer gravy*, *aloo subji*, etc. In south India, cuisines of Chittenuadu (Tamil Nadu) such as chicken biryani, chicken *varuval*, *vellai paniyaram*, *dosa*, *idli*, *sambar*, *vadai*, etc. are very famous.

Not only in taste but also in the way of cooking, Indian foods are different from the rest of the world. Indian foods showcase the perfect mixture of tradition, culture, and love. It is evolving for ages and that's why there are different forms of Indian food. As per the region, area, and state, different kinds of Indian foods are available (like North Indian food, South Indian, Bengali food, Gujarati food, and many more). Indian cuisines are characterized by spices and a wide array of ingredients. North Indian food mainly includes items that are bread related like Tandoori roti, Nan, *Kulcha*, etc. East Indian Food mainly relates to staple food (such as rice) and sweet dishes like *Roshogollas*, *Sandesh*, *Sweet curd*, etc. South Indian Food mainly includes items that are made of rice powder like *Idli*, *Sambar vada*, *Upma*, *Dosa*, etc. North East Indians are fond of meat, fresh raw vegetables as well as a boiled and fermented food. Chilli is an essential ingredient in most Indian cuisines.

TRANSFORMATION IN FOOD HABITS

Food habits, in general, are culture-specific, but in the last few decades, dynamic changes have occurred due to the fast-growing economy. A shift from traditional to modern technologies, globalization, industrialization, constant travels across the world, evolving tastes, and increased demands for fast food and processed foods throughout the country. Social division is prevalent in India and therefore, the consequences also vary widely. On the one hand, there is a problem of poverty and hunger causing undernutrition and related disorders while on the other hand, a substantial increase in the intake of fats and refined foods such as white rice, maida based items, sugars, and salt leading to overnutrition related disorders such as obesity and hypertension.

With rapid urbanization, the eating habits are also rapidly changing and running with the real danger of losing the rich food heritage, built with the wisdom of centuries. The decline of certain types of food entitlements, for instance, buttermilk that used to be widely available, often free of cost, in many Indian villages, particularly in the north-western region is a very relatable concern as to how the supply of basic nutritional food groups has vanished over time. Back then during those days, large quantities of buttermilk were available as a by-product of ghee, butter, and other local milk products. In many villages where there was no market for buttermilk - it was just consumed at home or given away to neighbors, friends, and visitors just like that. Later with the growing commercialization, these local milk processing activities declined and so has the availability of buttermilk. Similarly, the lessening role of home-grown consumption led to the effective price of food have risen, explaining to some extent the decline in cereal consumption among the poor (Deaton and Drazee, 2008).

Individual studies by Das Gupta, 1985 and Jodha, 1986 have substantiated the decline of a range of prevalent traditional food privileges in various parts of rural India. It includes the growing scarcity of wild spinach or 'saag' due to recent changes in cropping patterns, the reduced availability of fish in rice fields due to pesticide use, deprivation of forest products or common property resources due to environmental degradation, to name a few. All this could harm food intake and resulting nutritional status and poor households register serious energy-deficits, resultantly.

The 'Industrial Revolution' added to the changing food patterns in the country by introducing bakery food items prepared from hydrogenated fats and trans fats which leads to cardiac disorders and insulin resistance. Higher production of sugarcane and rise in sugar industries led to the production of sugar

confectionaries, candies, and sweetened aerated beverages resulting in the consumption of “empty” calories. Many processed and convenience foods like pickles and *pappads* are easily available nowadays. Intake of these food items added to the salt intake thereby increasing the occurrence of hypertension. The introduction of western foods has influenced the eating habits of Indians. People used to stay fit and healthy by eating home-made foods in the olden days. Today majority of Indians are moving away from home-made-food. Trends of buying packaged, take-away foods from the hotel and buy snacks from supermarkets and eating out in restaurants that offer a range of cuisines. Today, people like to eat fast foods like pizza, burgers, pasta, spaghetti, noodles, etc. instead of chapatti and rice. All these alterations in nutrition in turn have got adverse effects on health.

THE CHANGING NUTRITION SCENARIO

Compared to most countries of sub-Saharan Africa; which are currently much poorer than India, have developed at a much slower pace and record much higher infant and child mortality rates; the under-nutrition levels in India remain to be higher among them all (Deaton and Draze, 2008). National Family Health Survey-3 describes that about 23% of children below the age of 3 years in Kerala are underweight, 16% are wasted and 25% are stunted (International Institute for Population Sciences, 2007a). However, other indicators of child health and well-being suggest that children in Kerala are doing quite well. The infant mortality rate in Kerala is 13 per 1,000; about the same as in nations like Kuwait, Costa Rica, and Malaysia. Generally, child development indicators, other than anthropometric measurements, are much better in Kerala than in countries with similar proportions of underweight children.

The proportion of underweight children in Kerala is not very different from the average for sub-Saharan Africa. But the infant mortality rate in sub-Saharan Africa is around 100 per 1,000 which is nearly eight times as high as in Kerala. And potentially children in Kerala would be doing even better in some respects if they were not held up by low weights and heights. But it is not clear, from available data, what these impairments are.

Over the past, seven decades India has changed remarkably as a country. As a matter of course, diets vary and evolve and there were remarkable shifts in the nutritional scenario in India. India had faced one of the world’s worst recorded food disaster, the Bengal Famine in 1943. The threat of widespread household food insecurity and chronic under-nutrition was very real, poverty and hunger were in abundance and this resulted in various malnutrition-related epidemic disorders. Then came the Green Revolution.

Shortages of food grains disappeared within less than a decade and India became self-sufficient in food grain production. A decade later in the 1970s, the ‘White Revolution’ by the National Dairy Development Board (NDDB) made milk and other dairy products more easily and widely accessible. The usage of ghee, butter, paneer, and cheese enhanced the diet especially of the urban Indians thus pushing up the averages for the national daily intake of dairy and animal products. Traditionally, the Indian diet uses less processed ingredients and more natural ingredients than that of Western countries. More recently, the influence of Western products and the shift towards highly refined foods, meat, dairy products of high-level saturated fats have, together with reduced energy expenditure, contributed to

rises in the incidence of obesity and non-communicable diseases.

Particularly in metropolitan areas and among younger generations, many processed and convenience foods such as pickles and *papads* are now easily available as well as the popularization of Western foods such as pizzas, burgers, and fries. All such factors are playing their part in bumping up the national average of fat and sugar. Snacks in India are usually high-fat, high-salt fried foods that may also be high in trans-fats, and this may explain their relationship with several different health outcomes.

OVER NUTRITION

Carbohydrates, indeed, constitute among 60 and 70% of the Indian population's total energy intake. As a consequence, the rise of disorders, traditionally perceived as western culture-driven, is emerging as a significant issue, especially in urban areas, where also cases of diabetes mellitus and coronary heart disease are becoming more frequent than in rural contexts. Emerging dietary patterns that include greater consumption of high-fat and high-sugar foods are linked with increasing obesity in particular, and potentially also hypertension and diabetes. This trend has serious consequences for the health and quality of life of adults in the prime of life. With the growing trend towards sedentary lifestyles, hypertension may become the rule rather than the exception, and start at earlier and earlier ages, especially in urban areas. The over-nutrition-chronic diseases link has been firmly established towards the latter part of the last century - obesity predisposes to metabolic syndrome and thereby to non-communicable diseases.

Globally, fat has acquired a bad name as a harbinger of diabetes, cardiovascular diseases, and other illnesses, to which India is not an exception. Yet, fat intake among large sections of the Indian population is almost certainly much too low. This applies in particular to children in poor households. Fat is important for children not only because fat is a calorie-dense food and helps them to achieve adequate calorie intake despite small stomachs and generally facilitates the absorption of various nutrients but also because fat is useful in its own right, such as for the development of the brain (Uauy et al, 2001). In India, however, fat accounts for barely 15% of average calorie intake, according to National Sample Survey data, with much lower figures among poor households. According to the National Nutrition Monitoring Bureau, fat intake among Indian children is only about 30% of the 'recommended daily allowance' (National Nutrition Monitoring Bureau, 2006). Current expert recommendations for optimal fat intake as a proportion of calorie intake for young children fall in the range of 30 to 45% (World Health Organization, 2005).

Paying strong attention to various aspects of food intake such as the consumption of essential vitamins and minerals along with considering the direct indicators of nutritional status of a population, using the growth curves of children as well as other evidence of nutrition-related impairments is need of the hour. Nutritional inputs can be usefully measured by the various nutrition indicators such as anthropometric measurements that could capture the combined effects of various inputs be it food and/or non-food - related net of all (Deaton and Draze, 2008).

Going by the anthropometric approach and evidence under-nutrition in children is quite high among well-off households too. Here exist two different bodies of facts that need to be considered and understood. On the one hand, studies like those carried out by Agarwal et. al. (1987 and 1991) suggest that the

anthropometric achievements of children in affluent Indian families are much the same as those of well-nourished children elsewhere.

Indeed these Indian children are even included in the international reference population that forms the basis of the most recent World Health Organization ‘child growth standards’ (2008). On the other hand, the NFHS data tell a different story, whereby a substantial proportion of Indian children are undernourished even among well-off households.

MICRONUTRIENTS DEFICIENCY

Besides the burden of over nutrition, studies also provide evidence of a poor state of nutrition among children and adults in India, following a monotonous diet. Therefore, identification of common dietary patterns relevant to population sub-groups in India, as well as their association with epidemiological profiles, is important.

National Nutrition Monitoring Bureau (NNMB) surveys provide time-series data on dietary and nutrient intake of rural populations between 1975 and 2012. Dietary intake of foodstuff expressed as a percentage of Recommended Dietary Intake (RDI) is presented in Fig. 1. Over the last four decades, there has been a progressive reduction in cereal intake; there was a reduction in pulse intake till 1997, but the trend was reversed by 2012. There has been some increase in the intake of fats and oils and green leafy vegetables. The intake of vegetables and milk remains lower than the recommended intake. Over the years, there has not been an increase in the intake of animal products, except eggs.

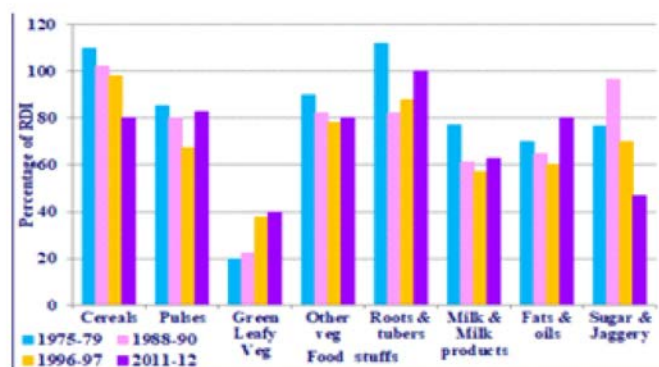


Fig. (1). Time trends in food intake as a percentage of RDI

Several scientific also studies have evaluated the consumption of food according to regional differences, co-responsible in influencing and modifying dietary status. A survey conducted in five rural eastern states – Assam, Bihar, Orissa, West Bengal, and Tripura – evaluated, that although these contexts show different alimentary habits, all intake values were deficient for all food groups, except cereals.

The consumption rate of dairy products was lower than the respective RDA within households of all districts. The mean intake of fats and oils, sugar and jaggery, fruits and nuts was deficient in most of the regions. The overall picture of this nutritional survey is that rural families consumed adequate or

marginally satisfactory amounts of cereals and roots and tubers, but other food groups, namely pulses and legumes, fruits and nuts, animal food, and milk and milk products, fell far short according to RDA. Iron deficiency, vitamin A deficiency, and iodine deficiency-related disorders constitute topics of urgent interest for public health. Their absence in the Indian diet leads to micronutrient deficiencies, such as vitamins and iron, which are extremely needful to grant adequate alimentary intakes, promoting general wellbeing and health status. Such a nutrition lack may lead to an increase in several diseases in children and early adulthood.

CALORIE COUNT AND INTAKE IN INDIA

A detailed report by Deaton and Draze (2008), reveals that the average per person calorie intake is dropping, as is the case with an intake of many other nutrients. While according to it, fats are found to be the only major nutrient group whose per capita consumption is increasing, notably. Today, more than 75% of the Indian population has per capita calorie consumption of less than 2,100 kcal in urban areas and 2,400 kcal in rural areas, where these numbers are referred to as 'minimum requirement' of daily calorie intake in India. Although the incomes and wages have undergone much improvement over the past years bringing nutritional strengthening but still could not prevent the offsetting reduction in calorie requirements. The reason behind this is ascribed to declining levels of physical activity and possibly also to various improvements in the health environment. The net effect with which has been a gradual reduction in per capita calorie consumption (Deaton and Draze, 2008).

There is no firm link between earnings and calorie consumption; also no strong association could be registered between the numbers of calories consumed and nutritional/health status. As the number of calories is important, only a balanced diet containing a reasonable proportion of fruits, vegetables, fats, and not just calories from cereals could ensure the required amount of calories. Factors such as activity levels, clean water, sanitation, good hygiene practices, vaccinations confirming sound health, along with others influence the need for calories and its retention. Improved epidemiological environment, with less exposure to disease and infections, a major improvement in access to safe drinking water during the last few years have defined falling calorie requirements. Better water reduces the prevalence of diseases, especially diarrhoeal disease, and removes a potentially major source of calorie wastage (Deaton and Draze, 2008). Calorie requirements increase sharply during diarrhoeal conditions; but adults and children often reduce the calorie intake during then contrary to the expert recommendations (Scrimshaw et al, 1983). So, improving disease environments reduce calorific - needs. Child vaccination rates have risen rapidly with improvement in child and maternal health, which further enhanced with mother's education, in the recent years. To the extent that these and other improvements in the health environment reduce the susceptibility of children and adults to disease and infection, calorie requirements would be reduced (Deaton and Draze, 2008).

In addition to reducing exposure to disease, a boost in access to piped water has reduced the energy requirements associated with fetching and carrying water - a strenuous task that is typically assigned to women and/or children, in rural India. Similarly, the extension of road coverage and transport facilities has enabled more people to use motorized means of transport. This saved energy that was earlier spent on long walks, another strenuous activity, especially when it meant to carry heavy loads. Mechanization

of several domestic activities, as well as agricultural work, also contributed to a drastic reduction in the calorific requirements. Rural women, aside from fetching water, used to spend much energy on grinding wheat grains into flour at home itself using a heavy stone mill - '*chakki*'. But today this is typically done outside the home with energized devices such as electric mills. A large increase in the ownership of durable goods over the last two decades and many of these goods are likely to have significantly reduced the expenditure of human energy. Television watching, a sedentary leisure activity, has also increased (Deaton and Draze, 2008).

The importance of accounting activity levels for calorie-based assessment of nutritional status comes from the fact that calorie requirements increase quite sharply with the level of activity undertaken. According to the Indian Council of Medical Research, the calorie requirements of an 'average Indian man' weighing 60 kg are almost 60% higher if he is engaged in heavy activity rather than sedentary activity. The rural-urban contrast, with lower calorie intake levels in urban areas, has been traditionally attributed to differences in activity patterns, including the more sedentary lifestyle of a large fraction of the urban population, the heavy energy demands of agricultural and domestic work in rural areas, and the lack of transportation in the rural sector. The fact that calorie intake is going down in both sectors, but with larger reductions in rural areas, fits the activity story (Deaton and Draze, 2008).

Lifestyle changes have brought about a shift into different behavioral practices such as people increasingly choosing away from a diet heavy in cereals. Other possible documented causes of shifting dietary behaviors consist of growing emulation of the consumption patterns of the affluent groups, exposure to new food items, the influence of advertisement, substitution towards wheat and rice as induced by the Public Distribution System. Some of these changes probably have nutritional consequences about which people are not fully informed, like for the consumption of important micronutrients.

For example, though the 'coarse cereals' are generally considered quite healthy and nutritious by nutritionists, they may or may not be perceived as such by the consumers. Rather their place is being taken over by the 'junk foods' rapidly gaining popularity all over the world, at the cost of giving up on their nutritive value is not always adequately understood. It has to be realized that recent changes in food habits and the decline in coarse cereal consumption, in particular, have had nutritional consequences that are not fully appreciated or taken into account by consumers (Deaton and Draze, 2008).

But this does not imply that nutritional status will automatically get worse. Nor the reduction in calories associated with lower activity levels be regarded that Indians are currently adequately nourished. Eventually, none of these possibilities could be accepted or even rejected. From all the preceding discussion it is implied that average calorie intake per se is a poor indicator of the nutritional status of the population. Simple comparisons of nutrition levels between different regions or periods based on average calorie intake can be very misleading. Indeed, average calorie intake in India is lower today than it was twenty years ago, yet the nutritional status of the population has improved.

Energy adequacy depends on 'net' intake, which is calorie intake minus the number of calories absorbed by a range of demands depending inter alia on the epidemiological environment as well as activity levels. The net energy demand is influenced by variables such as age, birth-weight, mother's education, breastfeeding practices, the composition of the diet, to cite a few. Adequate nutrition also

requires a host of other inputs that are not adequately summarized by total calories, including a range of micronutrients and, at certain stages of life, especially childhood, a varied diet (Deaton and Draze, 2008).

Overcoming these massive deficiencies would require a substantial shift from cereal-based diets to more diversified diets, for it is impossible to meet these diverse requirements from a cereal-dominated diet. Even calorie requirements are difficult to meet from cereals alone, especially for children, due to absorption problems for sometimes, cereal consumption harms the absorption of other essential nutrients by the body. For instance, cereals, legumes, peas, and nuts contain phosphorus compounds known as phytates which inhibit the absorption of iron. Certain compounds found in tea also have similar effects. This inhibition of iron absorption is one reason why iron-deficiency anemia is so widespread in India (Baynes and Bothwell, 1990). While the shift from cereal-based diets to more diversified diets is already taking place in India (Kumar et al, 2007), even then the Indian diets remain very restricted. According to the NFHS-2 data for 1998-99, only 55% of adult women in India consume milk or curd, only 33% eat fruits and 28% have an egg; at least once a week (International Institute for Population Sciences, 2000, p. 242). Seven years later, the NFHS-3 survey yielded the same figure for 'milk or curd' consumption i.e. 55% and only slightly higher figures for fruits and eggs intake – 40% and 32%, respectively (International Institute for Population Sciences, 2007a, p.299). Elimination of mass undernourishment in India calls for a major improvement in the quantity, quality, and diversity of food intake particularly among poorer sections of the population (Deaton and Draze, 2008).

CONCLUSION

The role of diet and nutrition are important factors for determining, maintaining, and promoting good health. Malnutrition remains the most widespread devastating problem affecting the health of children and continues to dominate the health of the world's poorest nations. Over the last seven decades, there has been a considerable reduction in under-nutrition across all age and sex groups but even today, under-nutrition and poor maternal and child health indices are still public health problems. India, at present faces a combination of chronic diseases and communicable diseases where the burden of chronic diseases exceeds that of communicable diseases. In short, the dual nutrition problem has multiplied the pressure on the public health system and continues to use up scarce resources.

The erosion of the "healthy diet" as an outcome of modernization and industrialization has led to the development of dietary supplements and other functional foods containing components (which may or may not be nutrients) that affect a limited number of functions in the body in a targeted way to have positive effects on health. They could also have a physiological effect that extends beyond the traditional nutritional effect. However, dietary diversification is the best approach as nature knows what is best for mankind. Some of the traditional food items contain functional ingredients, which play a major role in the prevention of diseases and promotion of health. Hence, a greater knowledge of the main dietary patterns in India is important for nutrition and health policymakers to understand distributions and trends in diets within populations, as well as their relationships with health outcomes.

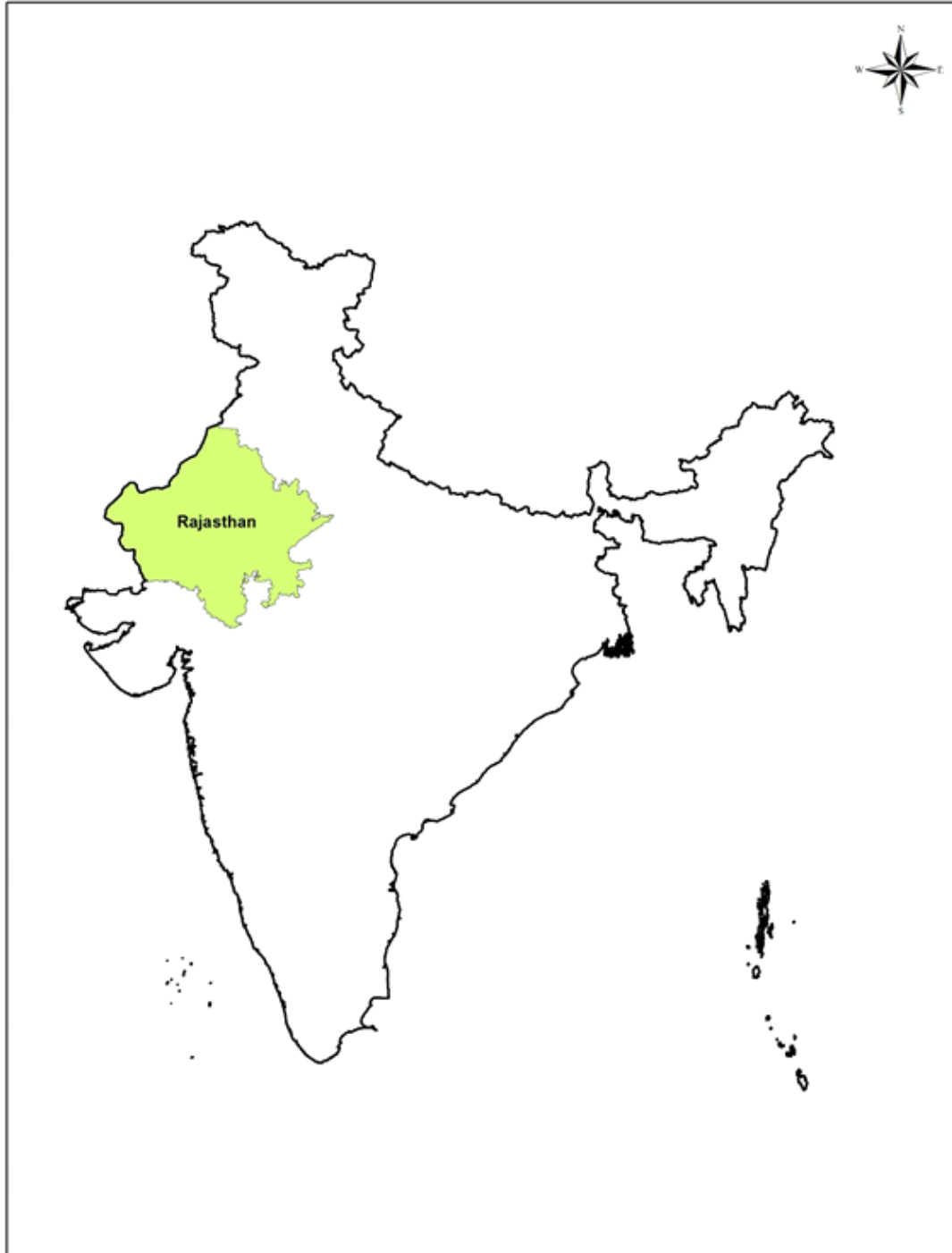
A holistic approach is needed to promote the concept of healthy nutrition in the whole country. Multi-sectoral innovative approaches to involve all age groups, keeping in view cultural diversity in

food habits and earning capacity is required to make people aware of the importance of healthy nutrition. The initiative should be taken right from childhood in schools, child care centers, and families so that the foundation stone of healthy eating habits are laid down at the right age and can be propagated in future generations well. Availability of nutritious foods at low cost should be ensured by policymaking, mobilizing the community, and health education.

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RAJWADAS, FOOD AND CULTURE OF RAJASTHAN

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ABSTRACT

Rajsthani cuisine remains one of the most untouched fares in India which means that there is hardly any or little influence of invaders and traders and is a testament to the grim determination and skill of the inhabitants of the largely arid region who became champions of animal husbandry, relished on milk products and made beans and lentils an integral part of the diet which could grow easily in semi-arid regions. The cooks in royal kitchens of the princely states of western Rajasthan preferred to use ghee (clarified butter), milk, and buttermilk with less or no use of water. Hunting among the Royals also shaped the culinary tradition of Rajasthan as game cooking was popular and respectable. Cooking techniques such as pit cooking and *dunger* cooking are marvels of science and made the food aromatic and uniquely flavourful. *Dal Bati choorma* remains the signature dish of Rajasthan along with spicy curries and chutneys. *Bajra* (pearl millet) is a local staple and the unconventional *Panchkuta* (*Ker-Sangri*), is ambrosia for Rajasthanis, which is a combination of five traditional ingredients. *Bejad ki Roti*, with some improvisation, and *bajre ki raab* are some of the traditional millet-based health-promoting dishes that need to be popularized.

INTRODUCTION

India is a pluralistic society with multi-ethnicities. The Constitution allows freedom to all these ethnicities and at the same time strives to build a society based on democracy and secularism. If ethnicities are given autonomy, the ethnic foods too need to be encouraged. Rajasthan has a plethora of ethnic foods that have survived through a long course of history despite many upheavals, changes, challenges, ecology, religious transformation, and development processes.

At the global front, anthropologists have long been interested not only in food but also in foodways and nutrition; their contribution in the area is significant. The International Conferences on Ethnological and Food Research have tried to bring out crucial information on food and food habits in different parts of the world. The basic approach of anthropological studies conducted in different parts of the world has been economic in nature (Doshi, 1995). The researchers in anthropology have also been trying to observe the socio-cultural factors that influence food habits. Finding out the role of culture in the area of food

anthropology is indeed difficult. In this respect, Cussler and de Give, in 1952, opined that- “Nutritionists are constantly discovering, with wonder and alarm. That man, that rational creature, often behaves unreasonably. The food analyst took a long, close look, at the universal ailment and found calories, vitamins, and minerals. He said- ‘Tell me what you are and I will tell you what you should eat...’ but it was not to be that easy. Indeed the area of food choices has seemed often as an area of great unreason.”

Hindu rituals, for instance, the practice of offering food (*prasad*) to deities has been analytically studied (Babb, 1970), there has also been research by Marriott (1968) in the area of caste ranking and food. Social anthropology in India is rich in village field data but the subject of food in culture is quite recent both in social and nutritional sciences. Many academic disciplines have taken up the issue of food habits and food consumption and have encountered the shortcoming that people’s food habits are analyzed in isolation with the general socio-cultural configuration of the society as a whole. This chapter is an attempt to present validated information about the food and culture of Rajasthan, with a focus on the royals, using both the secondary data as well as the informal information gained while interacting with the natives of Rajasthan.

RAJPUTANA - A CULINARY TREASURE

Rajasthan, the word can be translated in English as the ‘Abode of the Rajas (kings)’ and it was formerly called Rajputana meaning ‘The Country of Rajputs’ (Lodrick and Pal, 2019). Before the post-independence unification, Rajasthan was divided into 100 odd big and small princely states and was called Rajputana. The state attracts tourists and every third tourist visiting India also visits Rajasthan (Department of Tourism, GoR, 2020). Rajasthan has been called the ‘Designer State’ because of its people, costumes, clothes, culture, cuisine, and countless art forms (RTDC Report, 2015).

Rajasthan- the largest state of India, attracts tourists from all over the country and the world for its magnificent heritage, eye-catching architecture, soul-soothing folk art, heart capturing culture, and mouth-watering food. The cuisine of Rajasthan is a form of art, a taste bud tingling mix of the royal palate and arid climate. Rajasthan’s cuisine is influenced by multiple and vivid social, geographical, environmental, historical, and cultural factors.

The cuisine of Rajasthan is predominantly vegetarian but the royalty, particularly the men in the royal *thikanas* and states, have been relishing the non-vegetarian delicacies, primarily a result of their frequent hunting adventures and games. Rajasthan is a hotspot for food tourism, defined as, ‘visiting food exhibitions, food festivals, restaurants and specific locations for which food tasting and experiencing quality food are the primary factors for travel’ (Hall et. al., 2003).

Rajasthan has a tremendous range of lip-smacking dishes to offer with spices being high compared to other cuisines, and, therefore, the Rajasthani cuisine is known for spicy curries and delicacies. Chutneys made of coriander, mint, garlic, turmeric with added spices are an integral part of the cuisine. The sweet dish is usually offered with the main course and is never called a dessert. Self-service is considered rude and is not a part of the dining etiquette. The cooking methods bear the influence of climatic conditions (Batra and Sharma, 2019). Due to the scarcity of water, the use of milk, buttermilk is often practiced. The cuisine is also influenced by the warring lifestyle and lack of availability of fresh vegetables. The

dishes that could be stored for several days were preferred, therefore, gram flour, beans, lentils, *sangri* are essential ingredients of many dishes, a popular example being *gatte ki sabzi*, *ker sangri* although the most popular food of Rajasthan remains *dal*, *bati* and *choorma*.

ROYAL FOOD CULTURE- HISTORY, GEOGRAPHY AND TRADITION

The cuisine of Rajasthan is a product of its geographical, historical, and cultural background. The people of Rajasthan have produced so much variety from so little. Rajasthani cuisine is a testament to the grim determination and skill of the inhabitants of the largely arid region. Rajasthan, where many ancient civilizations flourished, the inhabitants created a powerful, complex, layered and regal culture among sand dunes. The arid land made nothing easy- the paucity of large swathes of fertile soil meant fewer vegetables and no leafy vegetables whatsoever; a big challenge to a state that traditionally was and continues to be largely vegetarian. Though the people could not cultivate much, they became champions of animal husbandry and made beans and lentils an integral part of diet which could grow easily in semi-arid regions.

Rajasthan is located in the north-west part of India with a rich cultural history and a well-developed culinary tradition based on traditional foods. Rajasthan, the largest state in India, has an area of 342,239 km² and is divided into 10 agro climatic zones exhibiting wide variation in climatic conditions, from extremely arid to humid. In contrast to the popular belief, Rajasthan is not a desert or barren region, the Aravalli hills, the oldest geographical feature of the Indian Subcontinent divide the state into two distinct regions, one barren and another fertile with lakes and forests (Department of Agriculture, Government of Rajasthan,).

Wheat, *bajra* (pearl millet), and maize with an annual production of approximately 104.6 lakh MT, 32 lakh MT and 11 lakh MT (2015-16) respectively are the major crops. It produces a large variety of spices and is the largest producer of Psyllium, cluster bean, fenugreek, cumin, mustard, pearl millet, moth bean, and coriander. The state has 10% of the total livestock in India and is the second-largest producer of milk in the country (Ministry of Food Processing Industries, Government of India, 2017). Geographically, Rajasthan has a hot and arid climate with a scarcity of water and fresh green vegetables. The cooks in royal kitchens of the princely states of western Rajasthan like Barmer, Bikaner, and Jaisalmer preferred to use ghee (clarified butter), milk, and buttermilk with less or no use of water.

'*Bina Pani ki Roti*' is a classic invention, which is made with a dough of *boora* (indigenously made powdered brown sugar), milk, ghee and flour, which turned into a local staple. Since it could not be rolled out into a *Roti*, it used to be flattened into roundels cooked on *khejdi* (*mitti ka tawa*). It has a shelf life of 45 days approximately.

The royal households, colloquially called *raj thikanas/ raj gharanas* were famous for their lavish lifestyle. It was in the magnificent kitchens of the regalia that some of the richest and most flavourful dishes find their origin. Each royal household had a huge *rasoda* (kitchen) with over 10-12 *khansamas* (chefs) specializing in different dishes. The recipes were fiercely guarded by the chefs and this has led to the despairing loss of many unique and incredible recipes. Royalty enjoyed another privilege – '*shikar*'. The passion for hunting among the royals also shaped the culinary tradition of Rajasthan. Even before the Mughals stepped in and created *kebabs*, Rajputs had a *potpourri* of tasteful dishes, and the hero of

these all was the *Laal Maas*. It is one of the star dishes of the Game Cuisine to have come out of the male kitchens of Mewar whose genesis was in the hunting expedition instead of the royal kitchen (Dash, 2014).

Cooking the hunted animal or game cooking was popular and respectable because it required the difficulty to attain culinary craft skills of cleaning, cutting, pre-preparing, and then cooking. Some Maharajas savored this skill of game cooking for their elite and important guests to build diplomatic relations. In Rajput households, it was the men who usually prepared the non-vegetarian food. Stories of royal hunting expeditions abound in Rajasthan. Each Maharaja had his special dishes. Maharaja of Salwar is credited with the creation of the unique *Junglee Maas* (Gupta, 2020). The hunted game was cooked in ghee, salt, and plenty of hot red chillies. The two-minute partridge or the grouse was the specialty of the royals of Jodhpur and Bikaner. Many Maharajas who were not skilled cooks preferred to take their retinue of cooks during these expeditions. Rajput food was not only about meat. They also indulged in pure vegetarian gourmet known as *Brahmin Bhojan* wherein the stress was on the purity of ingredients and use of *ghee* and *mawa*. The richness was balanced by generously adding digestives like asafoetida, black rock salt, carom seeds (*ajwain*), and dried ginger (*sonth*) (Gurbaxani, 2018). The cook also used to be a Brahmin and was called '*Maharaj*'. Onion and garlic (used in plenty in Rajput kitchen) were taboo in Brahmin kitchens.

Different communities dominated different regions of the state but many ingredients and preparations remained common, just creating different branches of the same cuisine catering to their sensitivities. The primary divisions are Rajput (fiercely proud warrior caste); Vaishnavas (followers of Lord Vishnu); *Bishnoi* (conservative spiritualist sect); *Marwaris* (ethno linguistic group from Marwar region, prolific merchants) and Jains (a minority that ascribes to the ancient tenets of Jainism) (Mishra, 2018).

A book of recipes by Gitanjali Gurbaxani (2018) brings out tasty secrets from the kitchen of the royal family of Jodhpur. The book narrates that *Gatte ki sabzi* was born from the desire of *Marwari* families to simulate rich meat dishes cooked in royal kitchens. The texture of *gatta*, made of gram flour, was an imitation of tenderized meat, while the gravy had the same spices, consistency, and look. It also mentions the emergence of the signature dish of Jodhpur- *Chakki ka saag*, made of gluten extracted from wheat flour and the fried pieces cooked in curd based gravy.

'KSHATRIYAIZATION' OF TRIBAL FOOD

Tribal groups lived in hilly and forest terrain. Their food habits were non-vegetarian. The forests were their only source of food supply; records are not available about acceptance of agriculture by the tribes. After the downfall of the Maurya and Gupta empires, several smaller kingdoms emerged in north India; there was the disintegration of larger political systems (Basu, 2016). The Rajput states of Rajputana experienced diverse fortunes but it led to the forever isolation of the tribes. The political disintegration of Rajputs resulted in their entry into tribal areas to expand their territories. Concluding the impact of penetration of Rajputs in the tribal region, Robert Deliege (1985) has written that, "The process (of Rajput expansion to tribal hilly tracts) started with the second millennium A.D. and went on until the 18th century. The importance of the Rajputs as agents of social change in tribal areas has led some authors to speak of 'Kshatriyaization' or 'Rajputization' of the tribes."

Though the *Bhil* tribe had frequent encounters with the Rajput rulers, they helped the latter in their battle against the *Mughals* (Bashir, 2016). They assisted Maharana Pratap when he was in exile in the forests of *Mewar*. The Rajput traits began to be imbibed by some tribal groups when they came in contact with the former, which was also evident in the changing food habits of the tribes. When the Rajputs fully subjugated the *Bhils* even in the interior parts of the region, the *Bhils* took to a settled way of life. They began to take agriculture as their source of sustenance. Since the climatic conditions were erratic, the *Bhils* took the monsoon crops of millets like *sama* (barnyard millet), *kodara* (*kodo* millet), *kuri* (little millet). The association of Rajputs strengthened the *Bhil* habit of forest game and of consuming the non-vegetarian diet (Bhattacharjee et. al., 2009).

Their traditional habit of taking alcohol, usually excessive, was also strengthened as a result of their contact with the Rajputs. Though consuming liquor was a central part of Bhil food habits, their association with the Rajputs gave them a feeling that liquor was a prestigious beverage and should be continued. Historically, after their subjugation at the hands of the Rajputs, the food habits of Bhils related to meat and liquor got extended to vegetarian food consisting of small millets (Doshi, 1995). At a later stage, they took to growing maize crops while settling in agriculture and then the foods made of maize flour also became an essential part of their diet (Joshi and Singh, 2015).

TRADITIONAL COOKING TECHNIQUES

The methods of cooking used in ancient Rajasthan were a marvel of science. The cooks were skilled not only in culinary art but also in culinary science. Mishra (2018) has written that *Khad* cooking (pit cooking) was inspired by the war-like nature of the expeditions of the *Maharajas* wherein, food was prepared in pits dug out in the sand. *Khad khargosh* is one such incredible dish, the exact recipe of which is difficult to find now. Wild hare meat is the chief ingredient that is rubbed with spices and cooked in *khad*-style. Another very interesting, indigenous practice is *dungar* cooking. In this technique, food is placed in a bronze/ copper vessel and another small vessel with a small piece of coal is placed in the center of the food. After pouring hot ghee over the coal, the dish is covered for half an hour nearly, giving the dish a scintillating smoky flavor and aroma.

Gayatri Singh, in her article on Rajasthani cuisine, published in ITHRD magazine's special issue (2014) has mentioned the following traditional ways of cooking food that was used in ancient Rajasthan to make the food aromatic-

1. **Clay baking:** Foods were marinated and mixed, wrapped in a clean muslin cloth, clad with clay, and then baked in coal
2. **Dum (steaming):** Food was sealed with dough to trap the moisture and aroma within
3. **Dungar cooking:** As described in the paragraph above, the smoke created by drizzling ghee over the coal and capturing it within by using a tight lid, permeated into the entire food being cooked
4. **Pit cooking:** the pit was dug, layered with wood and blazing coal. Food was then put into the pit and layered with coal. Kneaded flour balls were, at times, baked in the pit. Sometimes food was also wrapped in particular tree leaves.

TRADITIONAL CLASSIFICATION OF FOOD

Ethnic groups all over the world have traditional ways of classifying food. Despite the diversity in food classification, a popular traditional way is to classify the foods as ‘hot’ and ‘cold’ which is seen in Rajasthan as well. This classification may be irrelevant to outsiders but it is deep-rooted in the culture of the natives of Rajasthan irrespective of the class. At the same time, there seems to be a lack of unanimity about which are hot and which cold foods are as the classification is not governed by the temperature of the food but by the perceived properties and the action of food within the body (Nishteswar, 2016).

Commonly considered as hot foods include fatty flesh, spices, and alcoholic drinks whereas most fruits and low-calorie vegetables are considered cold foods. The addition of certain ingredients, like chilly, and the method of preparation is also said to be affecting the hotness or coldness of food.

Basic to the hot-cold concept is the belief that heat and cold must be maintained in balance to maintain health. Diseases result from an imbalance with either heat or cold being in excess. The hot-cold dichotomy is intimately tied to the reproductive cycle and numerous recommendations, as well as prohibitions, exist for women during menstruation, pregnancy, and lactation. A woman is considered especially warm during menstruation and is, therefore, asked to avoid cold foods as they can cause cramps. Infertility is treated by the use of hot concoctions made of different herbs as its cause is seen to be a cold womb. Pregnant women are refrained from taking cold foods because of their vulnerability to cold. Hot foods are recommended to control postpartum bleeding. Among lactating women, heat is believed to increase the supply of milk whereas cold decreases it (Doshi, 1995).

Additionally, some cultural superfoods consist of staples and the main source of calories. *Bajra* (pearl millet) *Roti* is a beloved staple (Sengupta, 2020) and this gluten-free wonder, traditionally considered hot and primarily consumed by the affluent class only during winters, is power-packed with a wide range of nutrients including blood-forming iron and gut-friendly fiber. Prestige food is another category that is specific to ceremonies and includes preparations of meat, milk, and the use of large amounts of dried fruits and ghee.

POPULAR BREADS AND CURRIES

The bread (unleavened) in Rajasthan is made out of conventional staples like *bajra*, maize, *jowar*. Rajasthani cuisine offers scrumptious and luscious combination meals that delight the taste buds. Few popular ones are mentioned here-

Dal Bati Choorma

This three-in-one treat is loved for its taste and simplicity. *Bati* is believed to have originated during the time of the founder of the kingdom of Mewar, *Bappa Rawal*. *Bati* was a preferred war time meal. Rajput soldiers would make chunks of dough and leave them under a layer of sand for baking under the sun. On their return in the evening, they would eat this well-baked *batis* with ghee and curd made of sheep/ camel milk. People, then started cooking *batis* on wood or using *kandas* (dried cow dung cakes) today *bati* is usually baked in a gas tandoor/ electric oven and variants like *bhapla* (steamed and baked version), stuffed *bati* (usually stuffed with vegetables or *mawa* and fried) are popular. With the settling of traders from the Gupta Empire in Mewar, the combination of *dal-bati* became popular.

Choorma, it is believed, was invented by a cook of the *Guhilot* clan of Mewar who accidentally poured sugarcane juice over *batis* and realized that it made *batis* tastier and softer. This recipe, with the culinary inputs of the women in the clan, evolved into *choorma* which is a sweet crushed version of *bati* and now has many variants each being high on the use of ghee and dry fruits and flavored with cardamom (Pal, 2016).

Two small *batis* made of wheat flour whole and wheat semolina with a bowl of *panchmel dal* and a tablespoon of added ghee provides 528 kcal, 19 g protein, 5.4 mg iron, 13.6 g fiber, and 3.48 mg zinc. One serving of *choorma* with generously added ghee provides 412 kcal, 3.74 g protein, 1.4 mg iron, 3.9 g fiber and 1 mg zinc (IFCT, 2017). The recipe can be improvised in today's time by cutting down the fat content and replacing dehusked pulses with their husked counterparts which will make the gut happy.

Panchmel Dal

It is eaten with *bati* a mix of five pulses, namely, *moong* (split green gram), *chana* (split bengal gram), *masoor* (split lentil), *toor* (split red gram) and *urad* (split black gram) *dals* (all usually in the dehusked form). The mix makes the dish not only tasty but nutritious. A flavored tempering made with ghee and spices is added to the *dal*.

Bajre ki Roti- Lahsun ki Chutney

The hand-rolled bread of dough made of *bajra* (pearl millet) is cooked on *mitti ka tawa* (clay griddle) and is a staple. It is eaten with jaggery, *Kadhi* (gram flour slowly cooked in curd), onion, and most famously with *lahsun ki chutney* which is a spicy garlic sauce.

Bajra is a rich source of iron and one small *Roti* made of 30 g flour provides 1.93 mg iron. Nutritive value (IFCT, 2017) is significant as it provides 104.4 kcal, 3.29 g protein, 8.21 g calcium, 0.83 mg zinc. Ghee is added as per choice and availability. Raw onion is considered preventive against heat stroke and garlic is known to prevent debility. The potential significance of garlic as a preventive agent against atherosclerosis and other non-communicable diseases is well documented (Bayan et. al., 2014).

Bejad ki Roti

It is made by blending Bengal gram flour with barley flour and is a perfect blend of health and taste. Two *Rotis* provide 158 kcal, 7.3 g protein, 45.5 mg calcium, 2.37 mg iron, 8.83 g fiber and 1.34 mg zinc. Its low glycaemic index makes it a perfect choice for those suffering from type 2 diabetes. High fiber and low carbohydrate content help in weight management as well. The addition of green leafy vegetables, which is not traditionally done, can enhance its nutritive value and make it a rich source of micronutrients and antioxidants. The addition of ghee is optional.

Tikkad

These are Rajasthani flatbreads made of wheat flour, semolina, Bengal gram flour, milk, and fennel. Depending on the choice, these can be fried or roasted. It is mostly served with *aloo pyaz ki sabzi* (Potato-onion).

Gatte ki sabzi

Gram Flour balls, fried or steamed, are cooked in buttermilk gravy with the addition of many spices. It is eaten both with *Roti* and rice. *Shahi gatte* or *govind gatte* are similar dumplings of gram flour that have been stuffed with nuts.

CEREMONIAL FOOD

Many factors that characterized royal ceremonial cuisine are now obsolete or endangered. The meat was mostly game, which is now illegal. Large amounts of ghee, butter, and dry fruits were used in the recipes which are now frowned upon due to health reasons. Everything was cooked fresh which does not suit this era of pre-cooked food. Pure *ittars* and ingredients like *kasturi* (musk extracted from the gland of male musk deer) used to perfume the recipes like *pulao* are not available (Doctor, 2009). *Mewari korma*, *anjeer mutton*, *khadi dal*, whole brinjals, *khus khus ki Roti* are delectable delicacies that are slowly dying out.

Laal Maas meat cooked with *Mathania mirch*, is the most popular non-vegetarian ceremonial recipe. It takes pretty long to cook it. While cooking onions for it, 3-4 tablespoons of warm water has to be added often to ensure that onions transfer their color to the meat while being careful about not overdoing it which may make the meat turn brown. These days the chefs keep parboiled meat and when the order is placed they cook the masala on quick fire, which skins to frying, not bhunnoing, and, therefore, the *laal maas* served in restaurants is not authentic. In fact, authentic *laal maas* cannot be a part of a la carte menu (Kapur, 2011).

Safed Maas is a classic specialty- a combination of tender meat chunks cooked in milk, cream, and curd. *Sula* is extremely famous. Small pieces of meat are marinated in a mixture of curd and local spices, put on skewers, and grilled. Mutton, chicken, fish, and wild boar are used in making traditional *sula*. For preparing *Junglee Maas*, ghee is heated to which whole red chilies and salt are added. After stirring a couple of times, meat is added. It is allowed to simmer in a covered pan till water evaporates and then more water is added till the meat gets cooked. The dish is ready when the meat gets tender (Singh, 2014).

The drinks served ceremonially (other than alcohol) are usually buttermilk, lassi, and thandai. The latter is an indulgent amalgamation of milk, poppy seeds, fennel, black pepper, rose petals, saffron, and sugar. This soul satiating drink is a thirst quencher, high on nutrients and exerts positive health effects.

A faction of cuisine that stands out is the sweets (now referred to as desserts). Due to the prowess in the use of dairy products, scintillating sweets have been concocted that enchant the taste buds. Some of these famous sweets are the unique *ghewar*- a cake-like crunchy dish made from refined flour, soaked in ghee and topped with pan condensed milk and sliced almonds and pistachios, *malpua* (fried pancakes), *kheer*, *halwa*, and *laddoo*. *Boondi ke laddoo*, *besan ke laddoo*, *dal ke laddoo*, and the unique *gond ke laddoo* are savored during the winter months (Mishra, 2018). A separate chapter can be devoted to the sweets of Rajasthan as the basket is too big to be contained in this chapter as a section.

FOOD OF THE ARID REGION

The arid zone of Rajasthan is characterized by scarce, erratic, and low rainfall days per year with summer temperature being as high as 50°C. Fruits and vegetables are scarce but at the same time, the desert land provides some vegetables which are nutritious but underexplored and underutilized. Traditional wisdom, of course, about their therapeutic use runs in the families. *Guarpatha* or Aloe (*Aloe barbadensis* Mill.) has been traditionally used for curing digestive disorders, diabetes mellitus, and arthritis, and heart ailments. It is also used in skincare, has 53 mg% vitamin C and is rich in antioxidants. *Ber* (*Zizyphus nummularia*) thrives in salinity and other adverse conditions, has 85 mg% vitamin C, aids in digestion and blood purification.

Cluster bean or *guar gum* (*Cyamopsis tetragonoloba*) is a good source of protein (3.32 g %), fibre (3.2 g %), and calcium (130 mg %). Galactomannan, the main component of *guar gum* is highly mucilaginous and finds industrial use. Due to its high soluble fibre content, it is good for obese persons and those suffering from diabetes mellitus and hyperlipidemia. *Kachri* (*Cucumis callosus*) grows in the rainy season and is preserved by drying. Its dried powder is used as a souring agent. It provides relief in stomach ache, nausea, vomiting, and constipation. It is a coughicide, diuretic, and gastric stimulant.

Ker (*Capparis decidua*), an unconventional food that has now become popular and is part of the exotic menu, it is used in both fresh and dried forms. Former is used in pickles while the latter is a part of a Rajasthani delicacy called *Panchkuta*. Its medicinal value is long known to the natives and is used in the treatment of rheumatism and digestive ailments (Goyal and Sharma, 2009). *Khejri* (*Prosopis cineria*) is the state tree of Rajasthan. Its green pods called *sangri* are a rich source of protein (5.1 g%) and fibre (6.7 g%). The nutritive value of these unconventional foods is not available in Indian Food Composition Tables, 2017.

Dried pods are the main ingredient of *Panchkuta* (*Ker-Sangri*), ambrosia for Rajasthanis, which is a combination of five traditional ingredients.

Panchkuta (for four servings)

Ingredients	Amount
Sangri (dried beans of <i>khejri</i>)	1 cup
Dried mango pieces	3
Dried <i>gunda</i> / gum berry (<i>Chorda myxa</i>)	1/4 cup
<i>Kumatia</i> (dried seeds of acacia fruits)	1/4 cup
<i>Ker</i> (dried berries of <i>Capparis decidua</i>)	1/4 cup
Oil	30 g
Salt, turmeric powder, cumin seeds, coriander powder, red chilli powder, a pinch of asafoetida, fennel seeds, 4 dried red chillies, and water	In desirable quantities according to taste

Method

1. Soak *Sangri, ker, gunda, kumatia* in plain water for an hour or two.
2. Clean the ingredients by rubbing gently and rinsing in water 7-8 times.
3. Let these ingredients remain soaked in water overnight.
4. Rinse again and boil these ingredients as well as dried mango pieces in water with turmeric for about 10 minutes.
5. Chop the mango pieces and dry red chillies.
6. Heat oil in a pan, crackle cumin and fennel seeds taking care not to burn these.
7. Add chopped dried red chillies, asafoetida, coriander powder, turmeric, and red chilli powder.
8. Add boiled vegetables, salt, some water and let it simmer on low flame till water dries out and oil leaves the pan (it takes time).
9. Serve it hot with *bajra/ bejad Roti* or *poori*.

The vegetable can be stored and used in long journeys safely.

(**Note:** The recipes where in-text citation has not been mentioned have been written after consulting elderly ladies and local untrained cooks, in and around Banasthali Vidyapith. The traditional recipe of Ker-Sangri has had major inputs from Mrs. Nirmala Jain and Mrs. Chandra Bhansali, two experienced, elderly housewives, and natives of Rajasthan who are fond of cooking. The author acknowledges their contribution with gratitude.)

The above local ingredients are so ingrained in the lives of Rajasthanis that there are poems written expressing their taste and health-promoting might- “*Ker kumatiya sangri, kachar bor matir, teeno loka nah mile, tarse dev akheer*” which can roughly be translated as these are only available in Rajasthan and even gods pine for them (Varshney, 2018). This depicts the significance of these ingredients in the culture of the state.

Bajre ki Raab/ Raabdi is another popular traditional recipe used both by royals and commoners, which has great therapeutic value for the people of the arid region. It is considered to be immunity boosting. Being low in fat and calories it is appropriate for weight loss, diabetes and it aids digestion. It has a reasonably good protein and mineral content. *Bajra* flour is soaked in sour buttermilk (3 cups buttermilk for half cup flour) for an hour nearly and then cooked on low flame with continuous stirring and simmering for half an hour to one hour keeping the consistency semi-liquid/ pouring by addition/ evaporation of water. Salt is added to taste. It thickens further after cooling and is garnished with raw cumin seeds. It is used as an appetizer and is also eaten in combination with *bajre ki Roti/ phulka* and *ker-sangri ka saag*. One serving provides nearly 100 kcal, 4.5 g protein, 95 mg calcium, 147 mg phosphorus, 1.58 mg iron, 2.3 g fiber, 28 mg omega -3 fats, and 0.55 mg zinc.

CONCLUSION

Bejad ki Roti (mentioned in the section on Breads and Curries) with added green leafy vegetables and *Bajre ki raab* (mentioned in section on Foods of Arid Region) are two recipes that should be popularized across the nation because these are tasty, millet-based preparations. Millets are highly nutritious and offer nutrition security. These millets are gluten-free, high in fiber, B vitamins, and many minerals. They are also rich in health-promoting phytochemicals and function as antioxidants, immune modulators, detoxifying agents thus preventing age-related degenerative diseases like cancer, cardiovascular diseases, and diabetes. The recipes are time tested and have long been traditionally associated with good health.

Rajwadas are known for their life of heritage and luxury. Many mouth-watering vegetarian and non-vegetarian dishes find their origin in the royal kitchens. The royal households spent lavishly on food and even when vegetarian, the food had a high protein content owing to the generous use of milk, *mawa*, dry fruits, and nuts and dependence on dry ingredients like beans and pulses. With the changing times and legal abolishment of royalty, many royal palaces have been transformed into heritage hotels serving delectable delicacies of Rajasthani royal cuisine which have been modified for cooking techniques as per the time. Another essential modification required in this era of mechanization and sedentary lifestyle is cutting down on the fat content while balancing the taste.

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FOOD AND DIETARY CULTURE OF ARID LANDS OF RAJASTHAN AND ITS NUTRITION IMPLICATIONS

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ABSTRACT

The National Nutrition Monitoring Bureau (NNMB) study conducted by Desert Medicine Research Center (DMRC) in the arid lands of Rajasthan revealed that consumption of foodstuffs per day was marginally low and less than RDA in all age groups of children and adults. Pearl millet was the staple diet in desert areas whereas wheat and rice in non-desert areas. The most common recipes prepared from pearl millet were *Sogra*, *Rab1* (Pearl millet Grains), *Rab2* (Pearl millet Flour), *Kadhi*, and *Khitchri* (*Kheech*). Each region of Rajasthan has its trademark dish. *Dal baati churma*, *Gatte ki sabzi*, *Ker sangria*, *Papad ki sabzi*, *Panchkuta*, *gunda* (a kind of wild berry) and dry red chillies, Onion *kachori*, *Mirchibada*, *Ghevar* and Milk Cake from Alwar are common cuisines from different regions of Rajasthan.

INTRODUCTION

Rajasthan, is the second-largest state of India (3,42,239 sq.km.) situated in the north-western part of India. Rajasthan was known as the land of Rajputs. The formation of the Rajasthan state in its present form started in 1948. The centrally administered area of Ajmer-Merwara was merged with Rajasthan on 1st November 1956 when the recommendations of the State Reorganization Commission were accepted, and a new state of India came into existence. The state of Rajasthan in India has a history dating thousands of years and was the site of the Indus Valley Civilization. The early medieval period saw the rise of many Rajput kingdoms like Chauhans of Ajmer, Guhilot, and Sisodias of Mewar, Rathores of Marwar. Later the region came under the suzerainty of the Mughal Empire.

Rajasthan has been divided into 33 districts covering Arid (Desert), Semi-Arid and Non-arid zones. Rajasthani food has been influenced by the scarcity of vegetables and water in this arid state. Each

region of Rajasthan has its trademark dish. *Kharif* (July to October) and *Rabi* (November to March) are the principal crops in Rajasthan. *Kharif* crops include Pearl millet, *Jowar*, Green gram (*Moong*), Moth, Cowpea, groundnut, *til*, and cotton. *Rabi* crops are Wheat, Barley, Bengal Gram (*Chana*), Mustard and *Taramira*, etc.

The great Indian desert of Thar, as it is commonly called, is spread over 2,85,680 km² area between 22° 30' N and 32° 50' N and from 68° 05' E to 75° 45' E. Within India, it forms a part of the country's north-west arid zone in the states of Rajasthan (69%), Gujarat (21%), and Punjab and Haryana (10%). Indian Thar desert has 12 desert districts i.e. Ganganagar, Hanumangarh, Bikaner, Churu, Jhunjhunu, Sikar, Nagaur, Pali, Jodhpur, Jalor, Barmer, and Jaisalmer. In desert areas, nutritional needs are high as they are being deprived of more food intake in desert areas, where low rainfall high temperature and frequent drought situations occur in this area which in turn affects agriculture and being influenced by the scarcity of vegetables and water in this arid state. This has given rise to a whole range of innovative dishes and ingredients that can last for several days. The use of dried lentils, beans, milk, and buttermilk is common in cooking. Oil and red chilies help to preserve the food and reduce the need for water. Each region of Rajasthan has its trademark dish. *Dal baati churma*, *Gatte ki sabzi*, *Ker sangria*, *Papad ki sabzi*, *Panchkuta*, *gunda* (a kind of wild berry), and dry red chilies, Onion *kachori*, *Mirchibada*, *Ghevar*, and Milk Cake from Alwar are common cuisines from different regions of Rajasthan.

Pearl millet is a staple diet in desert areas, which is also an important dietary source of iron and zinc for the at-risk populations in Indian states and districts of iron deficiency anemia, a nutritional deficiency of public health significance. *Bajra* has a higher content of iron (6.42 mg) than wheat (4.1 mg) and rice (0.7 mg). It has unique nutritional properties i.e. high fiber, quality protein and mineral composition. It is a crop of antiquity and drought-resistant crops. Suitable for drylands and important in the hill and tribal agriculture and require less water, mature early and cultivated in scarcity conditions, grown under low rainfall areas (200-600 mm). It is highly resilient in adapting to different ecological conditions. India is one of the largest producers of millets in the world with a production of 37,939 thousand tonnes during 2015-16. India is the largest consumer of Millets. In India, the major coarse cereals growing states i.e. Rajasthan (26%), Maharashtra (21.4%), Karnataka (13.2%), UP (7.3%), MP (6.6%) and Gujarat (5.5%). In Rajasthan, productivity of *Bajra* was 41,54,965 tonnes, wheat (1,24,30,922 tons) and rice (4,52,682 tons) during 2016-17 ([www. Rajasthan.Govt.agriculture](http://www.Rajasthan.Govt.agriculture)) whereas the area used for *bajra*, wheat and rice were 41,50,312 hectares, 33,49,149 hectares, and 1,97,754 hectares. The productivity was 3712 kg/hectare for wheat, 1001 kg/hectare for *bajra* (2016-17) in Rajasthan.

The results of the three pearl millet projects conducted by DMRC on 'Study of food and nutrient consumption pattern in women of childbearing age and 6-59 months of age, with particular reference to Pearl millet consumption pattern and effects of storage, processing, and cooking practices on the retention of Iron, Zinc, Phytate and Polyphenols in Nagaur, a desert district of Rajasthan' (funded by HarvestPlus, Washington) revealed that Pearl millet is main staple diet (63.0%) of rural areas of Nagaur district, followed by wheat (26.7%), revealing that it is a significant source of dietary energy and nutritional security for rural populations. In this study, at each village level, Focus Group Discussions were conducted for the collection of information regarding seasonal patterns and time trends in pearl millet production and consumption, traditional processing and cooking methods, etc.

At each village level, focus group discussions were conducted from two types of key informant groups i.e. one group of 6 or more male persons (key informants) mainly key persons from the village i.e. Panch, Sarpanch, teacher, etc from the village to provide the above-mentioned information. The second group consisted of 6 or more knowledgeable women (key informants) including Anganwari workers for providing the information regarding the preparation of different types of recipes from pearl millet, their consumption, and preservation, etc.

They also demonstrated the method of preparation of different recipes made up from the pearl millet which were commonly consumed by the villagers. The Team learned and standardized five commonly consumed recipes of pearl millet in the field in the Nagaur district of Rajasthan. The samples of raw varieties of pearl Millet collected from field were taken by the project staff to the laboratory of Baroda Pearl Millet Center (Department of Foods and Nutrition, Faculty of Family and Community Sciences, MS University of Baroda, Vadodara, Gujarat) for testing of iron, zinc, phytate, and polyphenol retention. Pearl Millet Project staff also prepared the five standardized recipes of pearl millet in the Baroda laboratory and dried them for testing to be done for the above-mentioned parameters.

This study⁵⁻⁸ revealed that five varieties of pearl millet were consumed in Nagaur district i.e. 'Desi bajra', 'Pro Agro hybrid', 'MH-169 (commonly consumed) and '118+154 Ghua Seed', and Pioneer' (Rarely consumed). The most common recipes prepared from pearl millet in the study villages were *Sogra*, *Rab1* (Pearl millet Grains), *Rab2* (Pearl millet Flour), *Kadhi*, and *Khitchri* (*Kheech*). Five samples each of five cooked recipes mentioned above prepared from pearl millet in the lab (commonly consumed by the villagers' i.e. *Desi bajra*, Pro Agro hybrid, and MH-169), were tested for iron, zinc, phytate, and polyphenol retention. The study revealed that among the cooked recipes, retention of Zinc and iron increased in *rab1* (Pearl millet Grains) preparation i.e. 3.64 to 4.40 mg/100g and 5.99 to 10.5mg/100g respectively.

It was observed that the iron content in cooked samples ranged from 5.29-10.5mg/100g (highest in *Rab1* (Pearl millet Grains) and lowest in *Rab2* (Pearl millet Flour), with an average of 7.49mg/100g (Table1). In the case of *Sogra*, (*Chapati* made from pearl millet Flour), retention of iron was more when prepared on Iron Tawa (9.99mg/100g) in comparison to Mud Tawa (6.31mg/100g) in biochemical analysis, and Phytate content shows that we have a high Phy/Zn ratio, way above the 15 cut off value. This provides us with sufficient evidence to assume low bioavailability for both iron and zinc.

Results of this study revealed that retention of phytates and phenols were reduced after cooking in most of the preparations where processes of soaking, pounding and dehusking were involved such as *Rab1* (pearl millet grains), *khitchri*, and *Kadhi*. Combination of *Rab1* (pearl millet grains) and *Kadhi* are good, where processes of soaking, Pounding and dehusking were involved due to which iron retention was found good. In addition to this, retention of iron was more when *sogra* was prepared on *iron tawa* in comparison to *mud tawa*.

The findings of Pearl millet Project among the local population has been propagated in Translational Research project funded by ICMR in collaboration with ICDS Department, in Nagaur District of Rajasthan has been completed on 'Development of IEC modules for the promotion of three local pearl millet preparations to improve the knowledge w.r.t. Pearl Millet consumption among the rural population of

Nagaur district of Rajasthan'. This showed a good impact of the intervention on the reduction of anemia in IG. In CG, Mild anemia inclined from 4 to 12.2 percent, Moderate anemia inclined from 45.5 to 57.5 percent, and Normal (nonanemic) inclined from 0.5 to 4.9 percent only. Anemia declined up to 27.4% in Intervention Gr. whereas in Control Gr. remained almost the same. Based on the leads of this translational study, recommendations have been made.

RECOMMENDATION

A state-level program for inclusion of Pearl millet preparations in Mid Day Meal Program for school Children and ICDS Program, involving the Ministry of Women and Child Development and Human Resource Development' may be launched in Rajasthan in Collaboration with State Health Department, GoR. Food-Based approach to reduce MDDs especially anemia, based on the findings of this project, on local staple food preparations (Pearl Millet), maybe aggressively pursued. Community-based Nutrition Intervention models using Local food preparations (Pearl Millet) with State Govt. to strengthen existing programs of Govt. by Partnership Research Programs may be pursued. With this background present proposal has been made to translate the leads of the Translation project on Pearl Millet funded by ICMR at the public level.

In other projects⁹⁻¹⁰ conducted by DMRC in collaboration with DFRL, Mysore viz. Supplementation of pearl millet products had improved hemoglobin levels and declined anemia and also had a significant positive effect on psychological tests performed on learning attributes in terms of memory, intelligence and cognition, during a DRDO/DFRL collaborative project on 'Assessment of Iodine deficiency disorder, Anemia and Nutrition Intervention in school-age children of Jodhpur district of Rajasthan'

The most common recipes prepared from pearl millet in the study⁵⁻⁸ villages were following:

1. Sogra,
2. Rab1 (Pearl millet Grains),
3. Rab2 (Pearl millet Flour),
4. Kadhi
5. Khitchri (Kheech)

These recipes were standardized. Five samples of each of the raw varieties and five cooked recipes mentioned above along with mixed flour of three raw varieties of pearl millet commonly consumed by the villagers i.e. *Desi bajra*, Pro Agro hybrid, and MH-169, were tested for iron, zinc, phytate, and polyphenol retention.

Table 1. Summary of Results of Zinc, Total Iron, Phytates and Total Phenols in Raw and Cooked Pearl Millet Based Recipes

S. No.	Food Sample	Zinc (mg/100g)	Iron (mg/100g)	PHYTATE (mg/100g)	TOTAL PHENOL (mg/100g)
Raw Varieties					
1	118+154 Ghua Seed	3.25	4.60	467.2	380
2	Desi bajra, District Nagaur	3.39	4.89	468.2	340
3	MH-169, District Nagaur	2.34	5.99	322.8	120
4	Pro Agro hybrid, District Nagaur	2.65	4.90	537.0	370
5	Pioneer	3.29	NA	468.0	350
6	Mixed Flour	3.64	5.99	300.0	210
Cooked Recipes					
1	Rab1 (Pearl millet Grains)	4.40	10.5	200.5	270
2	Rab2 (Pearl millet Flour)	4.84	5.29	267.4	260
3	Khitchri (Kheech)	3.59	5.29	200.5	320
4	Sogra	3.89	9.99 (Iron Tawa) 6.31 (Mitti Tawa)	234.0	310
5	<i>Kadhi</i>	3.74	6.39	267.2	220

NNMB study¹¹ conducted by DMRC revealed that in Dietary **intake**, consumption of foodstuffs per day were observed marginally low in consumption of Cereals and Millets in males and females respectively where as 80 percent in DMRC phase I, 77.2 percent in Phase II, and 79.6 percent in Phase III, very low consumption of Pulses and legumes and Consumption of Leafy Vegetables was extremely low. In dietary intake, average energy intakes (calories) was less than RDA in all age groups of children and adults whereas ranges from 59.0 to 99.2 % in DMRC phase I and phase II (53.5 to 85.9 %) and from 45.8 to 98.8 percent in Phase III. In children 1-3 years age group, average energy intake was observed to be 840.53 Kcal. In dietary intake, average energy intakes (calories) were less than RDA in all age groups of children and adults.

Each region of Rajasthan has its trademark dish. *Dal baati churma*, *Gatte ki sabzi*, *Ker sangria*, *Papad ki sabzi*, *Panchkuta ki sabzi*, *gunda* (a kind of wild berry), and dry red chilies, Onion *kachori*, *Mirchibada*, *Ghevar*, and Milk Cake from Alwar are common cuisines from different regions of Rajasthan. Other recipes like *Jodhpuri Kabuli*, *Gulab Jamun* vegetable, *Keri Gundas Sabji*, *Jodhpuri Mirchi Vada*, *Govind Gatta* vegetable, and *Rajasthani mawa kachori* are quite popular dishes in Rajasthan.

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ANTHROPOLOGY OF FOOD AND DIETARY CULTURE OF JAIPUR

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ABSTRACT

Food is the basis of life and man has been lucky that he has the access to both animals and plants as food. Food has a journey in human life starting from raw form moving towards cooked versions which are served in varied ways like smoked, fried, steamed and several new methods of cooking. Jaipur is the capital of the princely State of Rajasthan. The Rajputs are known for their valor and courage and were involved in many battles; their diets were therefore very rich in terms of energy and proteins. The use of alcohol and meat was high in the city of Jaipur, especially among the Rajputs. The rich and colorful culture and the festivals mark the celebrations of this princely state. The festivals are mostly involving the rituals for *Devi Parvati* seeking long life for their husbands rightly so as mentioned that they were involved in battles. Besides this rich cultural heritage, the cuisine of Pink City is varied and has evolved from rich sweets and elaborate meals like '*Chappan Bhog*' for the royal family to the continental cuisines including menus including Chinese, Thai, Mexican, Italian and Fast Food from America. The international chains of McDonald's, Pizza Hut, Café Coffee Day, and others have captured the youth in a big way, whereas the traditional cuisines at *Chokhi Dhaani* are the most sought after traditional food outlets and are famous for their hospitality and menus internationally. The mouth fresheners or *mukhwas*, including *paan* are also famous and are the popular takeaways from Jaipur, and so are the famous *Pyaz ki mawa kachori*, the sesame sweet known as *gazak*, *pheni* and *ghewar*. Jaipur is fairly green and has a sufficient supply of fruits, vegetables, and supply of cereals, and grains.

INTRODUCTION

Jaipur, the capital of Rajasthan has a history of powerful rulers. Maharaja Sawai Jai Singh-II founded Jaipur, the 'Pink City' on November 18, 1727. It is one of the best-planned cities of India (designed by Vidyadhar Bhattacharya) and a world heritage site declared by UNESCO and houses historical places such as the Nahargarh fort, Amer fort, Jaigarh Fort, and Moti Doongri. The ancient capital was Amber

i.e., Amer, situated five miles to the north of Jaipur, as the population increased, the then king realized the requirement to shift capital city, also the shortage of underground water in Amber region led the population to move below (Nicodemus, 2019).

Jaipur city forms a part of the 'Golden Triangle', a tourist circuit along with Delhi and Agra, and is located on the eastern border of the Thar Desert at a height of 1417 feet above sea level. It is surrounded by the Aravalli hills from three sides which safeguards it from the desert. The main source of water supply is from Banganga and Sabi rivers. Approximately 28.65 million cubic meters of groundwater resources are available in the capital city of the state. The drinking water is made available via Ramgarh Dam on Banganga River to the entire city. The good quality salt is obtained from Sambhar Lake which is located very close to Jaipur city.

Jaipur is the tenth most populated district of India and as per the latest Census (2011). The suggested population of the district is 66,26,178 with population density being 598 humans per square kilometer and gender ratio of the district being 909 females every 1000 males. A growth rate of 26.91% has been reported on comparing census of 2001 and 2011, literacy ratio being 76.44%. The district is dominated by the Hindu religion with Islam being followed by 7% of the population, Jainism, Buddhism, and Sikh religion followed by 4% only.

AGRICULTURE, DAIRY, AND LIVESTOCK

Agriculture has always been a top priority for the state government and Jaipur district has a total cropped area of 848313 hectares, with a net sown area of approximately 663167 hectares with the Gross Irrigated Area being 361235 ha, Net irrigated area 302428 hectares, approximately 241945 farm holdings with 54306 small farmers and 63921 marginal farmers with an average landholding of 3.32 in acres (Shrivastava and Jangid, 2019).

Jaipur district has been classified as zone 3, the semi-arid eastern plain zone with low temperatures in winter and high temperature in summer with the mean maximum temperature being 40.6 degrees centigrade and minimum temperature reportedly 6.2-degree centigrade respectively and an average rainfall of 564 mm per annum. However, the recent past reflects that the average rainfall has been quite scanty and scattered (FICCI and KPMG, 2016).

According to soil type, the major area of Jaipur district is covered by soil having sandy loam texture however the *Tehsil* of Dudu and Phagi and part of Chaksu and Kotputli, Viratnagar, are recognized for heavy soils being deficit in nitrogen as well as low levels of phosphorus and potash and the irrigation facilities of region play most prominent role in the agricultural development. Groundnut, *bajra*, *Kharif* pulses, wheat, mustard, barley, and gram are major crops along with vegetables such as tomato, pea, chili, brinjal, cabbage, cauliflower, and fruits such as *ber*, *amla*, *bael*, guava, lemon, etc.

Construction of wells and tube-wells has always been a major source of irrigation besides this to ensure maximum utilization of water, the use of a sprinkler, as well as drip irrigation techniques, have become very popular in recent times (Shrivastava and Jangid, 2019). Rajasthan Agriculture Research Institute (RARI) located in Jobner *tehsil* of Jaipur has made valuable contributions particularly in attaining food security by enhancing food production besides improving both qualities as well as profitability.

This Research Station has developed several varieties of various crops by appropriate involvement of technology e.g., wheat, barley, chickpea, lentil, pea, pearl millet, groundnut, cluster-bean and vegetables' have been developed; researches related to cropping systems and nutritional management of agricultural produce which incorporates organic farming, recycling of nutrient and research related to micronutrient. Besides this waste management is another important field and various research areas of this field include white grub management and pesticide residue research to ensure better crop yields this station focuses on pest control, research in the field of seed technology, nematode management this post-harvest technology is equally important.

In Jaipur traditional agricultural cropping patterns have been encouraged in technologically innovative ways thereby ensuring better agricultural yield to meet the target of household food security by encouraging traditional cropping patterns (Gartaula et al., 2020).

FOOD CULTURE OF JAIPUR

Food is an integral part of all occasions '*Janam, Maran and Paran*' (birth, death, and marriage), and the modern world has added the 'Coffee Culture' as every outing, meeting, professional discussions or academic event culminates in food.

Jaipur is known for its style of the recipes which still occupy a special position in the Rajput families and they prepared nonvegetarian for the guests and this trend continues among the generation. Historical influence on the food style of the desert region of India was also affected by its natural topography and ingredients which were produced locally just like most other civilizations globally.

Pronounced use of 'lentils, pulses, legumes and use of milk, curd, and buttermilk' instead of water in gravies due to its scarcity in the desert region along with the deficient application of leafy green vegetables marks the essentials of local cuisine. '*Jowar, Bajri, Maize, Ragi, Rice, Wheat, Barley, Gram, Tur, pulses, Groundnut, Sesame, etc* form the major crops of this desert capital. Millets, lentils, and beans being the most basic ingredients in the food that delivers recommended nutrients to the body. All grains act as the main source of calories mainly supplied in the form of starch and proteins.

Certain millets like *Jowar* and *Bajra*, as well as some legumes and lentils, add aroma and flavor to the local menu and this is achieved by the blending of spices particularly curry leaves, tamarind, coriander, ginger, garlic, chili, pepper, cinnamon, cloves, cardamom, cumin and rosewater which form the base of several traditional recipes.

Use of spices and condiments such as powdered cumin seeds (*jeera*), fennel seeds (*saunf*) or aniseed, fenugreek seeds (*methi dana*), nigella seeds (*kalonji*), carom seeds (*ajwain*), cloves (*laung or loong*), garlic, dried ginger (*sonth*), dried mango powder (*amchoor*), mustard seeds (*rai*), dried coarsely powdered fenugreek leaves (*kasuri methi*), asafoetida (*heing*), cinnamon (*dalchini*)' are other commonly used spices.

These spices are usually used in powdered form and heavy iron mortar and pestle are used to do this and also facilitates the retention of their coarse texture and natural flavor. The use of dry coconut is also seen in the local cuisine. The preferred medium for cooking is either clarified butter or ghee instead of vegetable oil. Oilseeds usually used to extract oil are *til* (gingelly) other cooking oils preferred by the

local community are sunflower, canola, and peanut oil.

Traditional foods have been an important component of the health as well as the culture of the Indian community. These foods have widely contributed not only to physical and social well-being but have always ensured spiritual well-being too. Activities like harvesting and preparation have always brought individuals of the community together and have helped in the maintenance of social relationships and facilitated knowledge transfer and ensured the sustainability of spiritual connections with the land (Fox, 2014).

Besides this certain other factors like lack of water along with poor availability of green vegetables had also made an impression on the process of cooking. Usually, the dishes which had a good shelf life and those which could be consumed without the application of heat were preferred. Traditional cuisine of Jaipur includes *daal baati choorma* and *ladoos* of *urad dal* (black gram), wheat flour with *gond*, *besan ladoo*, medicinal *ladoos* for women (recommended 40 days post-delivery), and *boondi ladoos*.

The use of high-fat foods is very common as it keeps the body warm in winters and maintains oily skin. *Desi* ghee or clarified butter has been the main source of maintaining a good texture.

FOOD CULTURE OF THE RAJPUTS

The Rajputs are the fighting community known for their bravery and valor. The inclusion of meat and eggs were always a part of their culture. In fact at the Goddess Durga temple at Amer Fort, a goat is sacrificed during *Navratri puja*, and alcohol is also offered to *Maa*. A concept of '*chappan pakwan*' which included 56 food items in the forms of savorys, sweets, different chutneys is still practiced in pleasing Lord Krishna or Govind Devji and was part of the royal cuisine.

The royal kitchens of Jaipur have always been famous wherein the preparations of food which was raised to the levels of an art form. The royal cooks popularly known as '*Khansamas*', worked in the palaces and were quite secretive about their most enigmatic recipes. The culinary art of the region has been greatly influenced by the passion of the *Maharajas* of Rajasthan for *shikar* or hunting.

In the royal society, good eating and game cooking is usually preferred as well as a respected art form. *Pathani* invasion served as a filter in the art of barbecuing which further groomed to perfection and gave birth to most relished recipes like *Sula*-smoked *kebabs* or skewered boneless lamb which can be prepared in 11 different ways. Certain *Rajputs* follow a vegetarian lifestyle and such cuisines also form the main part of Jaipuri cuisine. The famous and most relished recipes of the royal *khansamas* still rotate among the generations and usually find a respectable place in gatherings (Dash, 2019).

The '*Maharaja of Salwar*' is known for the '*Junglee maas*' as it had been most however due to the paucity of certain ingredients during the hunting process in the camp kitchen, usually cooking involved the use of pure ghee along with other ingredients for example salt and red chilies which were easily available (Dash, 2014).

The non-vegetarian meat dishes are further classified into *Lal Maas* (red meat) or *Safed Maas* (white meat). *Lal Maas* is prepared in rich gravy of tomatoes and spices such as the scalding red chilies, on the contrary, the *safed Maas* is stuffed with dry fruits and simmered in a gravy of cashew, cream,

coconut, and blanched almonds and laced with powdered spices such as cardamom and cinnamon (Dash, 2014).

VEGETARIAN FOODS CULTURE

Vegetarian cooking of the *Maheshwaris* of *Marwar* is mainly done without using garlic and onions because they are considered as ingredients that excite the blood, and are quite popular. The *Marwaris* of Rajasthan were vegetarian too, but their cuisine was richer in its method of preparation and was almost similar to Rajputs of this region (Dubey, 2010). Another sect of '*Vaishnavas*' who are mainly 'followers of Krishna' and are supposedly vegetarian and the *Bishnois* both form a community known for their passion for animals, plants i.e., entire wildlife conservation.

A preference for flavorings that can be stored for long times in normal weather conditions characterizes the local cuisine and red chilies of the local area are famous and relished worldwide. Red chilies are either consumed whole or powdered coarsely, these chilies enhance the color of gravies and add fiery, scalding flavor to them. The use of mango powder forms a distinct feature of *Maheshwari* cooking and it act as a suitable substitute for tomatoes which are scarce in the desert and the use of asafoetida helps in enhancing the taste of recipes particularly in absence of garlic and onions.

ARID ZONE FOOD CULTURE

Due to climatic conditions, the availability of all types of food is a rarity but adoption of preservation techniques traditionally variety has been ensured since past as food has been the main factor mainly because of the existing desert conditions as well as the war situations which usually prevailed in Rajasthan.

Jaipur has always presented exotic cuisine since the past by incorporating certain pulses and various millets, as well as certain trees with beans which were exposed to dehydration and stored for in the summers because nothing grew in this desert region (Bhavani, 2019).

Since the dry conditions of the district do not support the growth of vegetables like potatoes and cauliflowers therefore the local people developed skills to supplement their diet with certain locally available plants which the environment largely offers them. '*Kachri*' (*cucumis melo*), '*fofliya*' (*citrullus lanatus*), '*khumattiya*' (it is a small circular, a flat, black-brown colored herb which is picked from the tree *Kumatiya*, spread naturally all over in the desert of Thar), '*gawar*' (*cyamopsis tetragonoloba*), etc. are all regarded as vegetables' in this desert region and have successfully supplemented the popular vegetables in local cuisines.

Dehydrated lentils and various other beans obtained from indigenous plants include '*sangri* and *ker*'. Certain relished delicacies which include '*pakodi*' and '*gatte ki sabzi*' prepared by using gram flour besides this *papad*, *mangodi* are other dehydrated food items prepared by using powdered gram flour, etc. The localities i.e., the desert people have all skills required for dehydrating vegetables. Fresh green chilies, as well as the dry red ones, form an integral component of various dishes consumed in Jaipur, they find their important position in snacks, curries, pickles, and chutneys which are commonly consumed. As chilies are widely grown here so locally they are consumed in enormous quantities.

Several types of research have proved that traditional vegetables and dessert delicacies are competent enough in lowering serum Total Cholesterol, LDL-C (low-density lipoprotein-cholesterol), triglyceride as well as VLDL-C levels including an atherogenic index of cardiovascular patients. The diet further helps in repairing abnormalities associated with various organs like the heart, kidney, and liver. The seed extract reduced diet-induced atherosclerosis as proved by various researches and this facilitates novel cures. Aqueous extract of *kumatiya* seeds helps in the inhibition of growth of five bacterial strains in culture conditions which have proved to be better than standard antibiotics.

FESTIVITIES AND FOOD

Jaipur's rich cultural heritage and art forms are reflected by the traditional craft practiced in the city and one of the major art forms is block printing and *Bagru* printing. Several festivals are celebrated in Jaipur and *aach* festivity is marked with special and traditional cuisines prepared and relished by all Jaipurites. Also known as 'Choti Kashi', this city of temples houses temples of the royal family- Govind Devji of Shri Krishna, ('Kuldevta' of the royal family) which offer special *laddoos* for *prasad*, and Lord Ganesh temple at *Moti Dungri*.

Festivities begin with 'Makar Sankranti', the kite festival on January 14, wherein sesame seeds or *til ladoos*, *moong dal pakori*, *Khichdi* with rice, and various pulses and *til* and jaggery ladoos. In the 18-day festival 'Gangaur', which is celebrated in *Chaitra* month, Goddess Parvati is worshipped by married women who pray for the prosperity of husbands and unmarried girls pray for a good husband in the future. This oldest festival of Rajasthan is a must-watch for the tourist where women are in vibrant clothes with *mehendi* on the palms of women and a *juloos* (procession) with bullock carts, chariots, old palanquins of 'Gangaur' which begins from the *Zanani-Deodhi* of the City Palace and goes to various parts of the city and concludes at a place near *Talkatora*. Special foods include sweets like *choorma*, *kheer*, *feeni*, *halwa*, and *barfi*, but *ghewar* is the most prominent sweet of 'Gangaur'. *Ghewar* is a disc-shaped sweet cake made up of refined wheat flour and is available both dipped in sugar syrup and also unsweetened which can be eaten with milk. Varieties of *ghewar* include plain, *mawa*, and *malai ghewar*.

The Elephant festival celebrated on the full moon day of *Phalgun Poornima*, around Holi festival is dedicated to Lord Ganesh. A parade of decorated elephants wearing enormous elephant gems, anklets decked with bells, ear danglers, shaded brocade, scarves for ears and neck, gold and silver wrist trinkets and rings for the tusks along with a food festival is a major attraction for tourists to taste local foods of Jaipur. *Sheetla Mata* Fair- is a huge fair held at *Seel Ki Doongri*, *Chaksu* to appease Goddess *Durga* whose fury, it is believed, can cause smallpox and chickenpox disease. The *Prasad* called *baseda* is offered to the goddess including *rabri*, rice, *poori*, *pue*, *ker sangri* vegetable, raw mango *launji*, *bajra*, and curd. *Baseda* or *Sheetlathmi* is the eighth day of holi which is the beginning of summer in Rajasthan. According to folklore, it is said that as summer sets in we should avoid eating food which is *basi* (previous days) as it may lead to food spoilage and poisoning. Another important festival is *Teej*, where Goddess Parvati is worshipped, women perform folk dance and sing folk songs and wear *leharua*, adorn themselves with lots of jewelry, and enjoy on the swings tied across the trees to welcome 'Sawan', the rainy season. *Ghewar* and *Pheeni* are important sweets during this festival.

According to Ayurveda during the months of *Shravan* and *Bhadrapada* i.e. July-August – September

Vata and *Pitta* are predominated resulting in acidity and also dryness because of which there is a restlessness in the entire body resulting in mood swings. *Ghewar*, *Pheeni* and *Firini* are certain sweets that are highly laden with sugar and ghee traditionally being consumed to provide relief both from acidic as well as the moist environment. The *Vata* and *Pitta* calming properties of these sweets also make them popular not only among local people but also among Tourists. This further helps in inducing a calming effect not only in the mind but also in the body (Sarkar et al., 2015).

CHANGING TRENDS IN JAIPUR FOOD CULTURE

Jaipur has evolved from a *Rajwada* to a modern metro with liberalization along with the economic growth that has led to Jaipur becoming a hub for coffee culture and eating joints. As time shifted to the advent of *Mughals* the cuisine incorporated the *Mughlai* culture or *rasoi* which included special spices and condiments in preparation, steeping of meat, and other recipes in curd and other flavoring agents like *Kesar* or saffron, and introduction of various curries made of cashew and coconut also started. Making bread was then done in *tandoors* instead of traditional *sigdis* and the term *tandoori* items and *kebabs* both vegetarian and non-vegetarian were introduced.

The English also left their footmarks in the Jaipur royals with the introduction of liquor including fine wines and cocktails. The culture of consuming liquor and smoking was prevalent in the women also of the royal family although there was separate gathering for the women; it is still followed in the Rajput families.

As Jaipur expanded the *chaat* culture mainly from the surrounding State of Delhi influenced food choices. The *sikora* tea (mud cup), *samosas*, *pyaz ki kachori*, *mawa kachori*, *golgappa*, *dahi papdi*, *aloo tikki*, *dahi bhalla* and *daal ki pakori* has a big market even today. The sweets include *mishri mawa*, *gulab sakri*, *chougani ka laddu*, *thal ki barfi*, and *mohan thal*. *Besan Gatta*, *chakki ki sabzi*, *bajre ki Khichdi*, *gud bajra*, *choorma* of different flavors, *kulfis*, and world-famous *paan* of different flavors. Then there are digestive *churans* made out of *imli*, *anardana*, *mango*, *heeng*, lemon, and flavored *saunf* known as '*mukhwās*'. They have medicinal properties in enhancing digestion besides improving the flavor of the mouth.

The beginning of the 21st century marked the change in food culture in Jaipur with the advent of several international cuisines and flavors which have led to immense shifts from traditional home-made cooking to outside street food as well as fine dining and coffee culture in Jaipur.

TRADITIONAL JAIPURI CUISINES THAT CAN BE PROMOTED FOR EAT RIGHT MOVEMENT

The traditional Jaipuri *thali* is widely accepted by both global and local people. It has an important message of 'Eat Local' also embedded in it. The *thali* from Jaipur includes a variety of local foods making it both food and nutritionally wholesome and sustainable. The menus differ in summers and winters as there is a very vast temperature difference. The *thali* can be adopted for the Eat Right movement promoting local foods and traditional recipes. The *thali* or meal for summers and winters would vary and a healthy and wholesome *thali* is presented in Table 1.

Table 1: Traditional Jaipuri thali that can be promoted For Eat Right Movement

Traditional Menu	Summers	Winters
Morning	<i>Jau Chana Sattu</i> (can be sweetened with <i>Bura</i> a sort of sugar) <i>Chaach</i> with Salt and roasted <i>Zeera</i> or <i>Aamras</i> <i>Parantha</i> and vegetable	<i>Bajra</i> or <i>Makka Rabdi</i>
Lunch	Salad of Onion <i>Khatta</i> or Curd with onion, <i>pudina</i> , <i>bathua</i> , or <i>kachri ki</i> chutney (dried powdered <i>kachri</i> with red chillies) <i>Mangodi</i> vegetable and Mango <i>Launji</i> <i>Chappati</i>	<i>Makka</i> or <i>Bajra Roti</i> with <i>Gur</i> <i>Methi</i> or <i>mooli parantha</i> <i>Bajre ki Khichdi</i> <i>Mooli ka Saag/ Mogri ka saag</i> <i>Haldi</i> and <i>amla launji</i> <i>Kadhi</i> or <i>Gatta</i> vegetable
Mid-afternoon	Fruit like <i>Kharbooza</i> or <i>tarbooz</i> <i>Aam Panna</i> or <i>Kairi ki Chaach</i> <i>Bhuna Chana</i>	<i>Gond ke laddu</i> or <i>dana methi</i> and <i>urad dal laddu</i> and some bean <i>namkeen</i> with tea Guava and <i>kinnoo</i> favourite fruits for winters
Dinner	<i>Daal</i> Seasonal Vegetables like <i>lauki</i> , <i>turai</i> , <i>tinda</i> , etc. <i>Roti</i>	Wheat <i>Chapati</i> <i>Daal</i> Seasonal Vegetable like pea, carrot and potato vegetable

CONCLUSION

Jaipur with all its royal heritage has adopted many cuisines but the traditional homes still love their traditional meals. The *thali* has its roots in the six taste theory of Ayurveda; the tastes are bitter, sweet, sour, salty, sweet, and astringent. These are supposedly used to balance the different types of doshas, which regulate digestion, absorption, proper assimilation, and finally elimination of toxins from the body.

The food and its cooking were influenced by the war-like lifestyle of the Rajputs. The food preparations included recipes that would last for a longer period without having options of heating. The traditional recipes included dried lentils beans and *ker sangri*. Powdered lentils are used to make *mangodi* and *papad* which has been a method of preserving the lentils for year-long use.

Bajra and maize the common millets used for *rabdi*, *Khichdi*, and *Rotis*. The dried chutneys of tomatoes, garlic, chilli and *kachri* and pickles ranging from *haldi*, *amla*, mango, *ker sangri*, *lesua*, *gajar*, *gobhi*, *shaljam*, *mooli* are famous from this region. Some delicacies are *Dal baati* and *Choorma*, the

baati may be made with wheat, *bajra*, and maize flour; it is stuffed with all kinds of stuff including potatoes, peas, lentils, *mawa* and dry fruits.

The *choormas* are flavored with *kesar*, *gulaab*, *pista* and *khus*, all types loaded with dry fruits. Both jaggery and sugar is used to sweeten them. Some important winter delicacies include *til ke ladoo*, *til ki gajak* and it's difficult to imagine winters in Jaipur without such items. The Ayurvedic component of the diet is prominent in the food culture. The ability of food to generate heat and energy in the body and numerous beauty and hair benefits, besides having anti aging properties, digestive and dental benefits.

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UNRAVELLING THE FACTS ABOUT THE TRADITIONAL CUISINES AND REGIONAL FOODS OF GUJARAT

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ABSTRACT

The vibrant state of Gujarat like the other regions of the country boasts of rich cultural diversity with distinct dietary choices shaped over the ages, based on the geographic placement, climate, and agricultural scenario of the state. Gujarat is highly susceptible to climatic variations as it is located in the semiarid region of the country and also due to having a long coastline, affecting the cropping pattern and the regional food availability. Traditionally the dietary pattern here can be described as lactovegetarian, although it is infamously called a ‘vegetarian diet devoid of vegetables’, owing to the lack of availability of green leafy and other vegetables in the arid and semi-arid regions of the state. Also, the cuisine is infamous for the addition of sugar/jaggery in most of the dishes, even spicy and savory. However, the Gujarati cuisine also incorporates many good nutritional practices, like the use of milk and milk products, especially buttermilk, in good amounts; high consumption of steam-cooked food items; making use of the cereal-pulse combination in many of the routine preparations; and the use of millets in traditional recipes. These cultural dietary habits and regional foods can be incorporated into the modified nutritionally well-balanced diets, leading to better acceptance of the modifications made due to familiarity with most of the ingredients and the cooking method used. And such culturally acceptable food preparations and indigenous foods if included in food-based program interventions ultimately may help solve the issue of food insecurity for vulnerable populations.

INTRODUCTION

The vibrant state of Gujarat is a land of cultural diversity and boasts of rich heritage and traditions. Its name has been derived from the word ‘*Gujara*’ which means the land inhabited by the tribe known as ‘*Gujjars*’ or ‘*Gurjars*’ who reigned during the 700’s and 800’s and are believed to be the ethnic group of India, Pakistan, and Afghanistan. The state has roots in the Harappan civilization and sees the convergence of many religions viz. Hinduism, Islam, Jainism, and Buddhism.¹ With people belonging to different

religions coexisting since time, there is a merging of cultures which can be observed in the beliefs, traditions, customs, and practices followed by the people of Gujarat. And also rich cultural diversity is seen in this land which is due to the coming together of various ethnic groups that together constitute the population of Gujarat.²

The people here are considered to have inherited the legacy of the legendary leaders of the state like Mahatma Gandhi and Sardar Patel³ which could also be a strong influencing factor with regards to the cultural beliefs and practices of the people, apart from the social values that these legends epitomized. Gujarat is said to have been affected by the varied historical experiences from the previous centuries, not only in the social and economic context but also in terms of traditions and customs.

A large huge number of distinct castes and sub-castes have existed in the state, it is quite difficult to generalize the culture as one for the entire region, and the role of regional sub-culture needs to be considered as an influential aspect for the practices being followed by the people.⁴ The people of Gujarat popularly known as the 'Gujaratis' are known to be influenced by the past and have acceded to the values of culture, traditions, and arts; and also the state is famous for displaying enculturation wherein there are the sharing and adaptation of culture, which is passed on from one generation to the next¹, thus making it imperative to consider and understand the traditional dietary practices.

THE GEOGRAPHY, CLIMATE AND AGRICULTURAL SCENARIO OF GUJARAT

Since food consumption patterns are highly dependent on the geography of a particular region and the prevailing climatic conditions, which in turn affect the agricultural environment and output, having a look at these aspects for Gujarat becomes essential to appreciate the food choices of the people here.

Gujarat state located on the western coast of India consists of the longest coastline running as long as 1600 Km. It is surrounded by the Arabian Sea in the west and southwest and by Pakistan in the North. Adjoining towards the northeast and east are the states of Rajasthan and Madhya Pradesh respectively, and towards the south is the state of Maharashtra and the Union Territories of Daman, Diu, and Dadra Nagar Haveli.⁵ The state also includes the Kathiawar Peninsula (Saurashtra) along with the surrounding area on the mainland and can be described as a land of contrasting geographic locations, extending from the seasonal salt deserts of the Kutch district in the northwest; through the dry, unfertile, and partly semi-arid shrublands of Saurashtra; to the wet, fertile, coastal plains of the south-eastern part of the state, north of Mumbai.⁶

The state witnesses diverse climatic conditions, having winters that are mild and pleasant, summers being very hot and dry, and semi-heavy to heavy monsoons.⁵ The temperature during winters goes as high as 28°C while it drops to a low of about 11°C to 12°C, and the summers are relatively hotter, with temperatures well above 39°C to 40°C experienced during the day and dipping only to a low of 30°C during the night.⁶ Gujarat's high susceptibility to climatic variations can be attributed to having a long coastline and being situated in the semiarid region of the country. And hence agriculture is affected, due to unpredictable and uneven rainfall pattern, which many times brings along scarcity and shortage, especially in the Kutch and Saurashtra regions. Despite this, the state enjoys the cultivation of a variety of crops, even though the agro-climatic conditions are quite varied.⁷

Widespread variability in temperature and rainfall conditions, soil type, and irrigation facilities are seen in the state. Accordingly, the chief fruit crops cultivated are mango, banana, sapota, papaya, and citrus; while the chief vegetables cultivated here are the gourds, potato, okra, brinjal, tomato, and onion. The spices chiefly produced are cumin, fennel, and garlic, and the state is said to dominate in the production of seed spices.⁸

Gujarat also ranked third in terms of fruit production in the country according to the Union Government data for 2009-10; banana being the most produced fruit, followed by papaya and mango, and the state is well-known for its Alphonso and Kesar mango varieties.⁹

Amongst the crops produced by the state – cereals like rice, jowar, bajra (pearl millet), maize, wheat; pulses like gram, tur, and oilseeds like groundnut, sesame, mustard, cotton,⁷ it has been found that the pearl millet seed and the crop can tolerate stress and has shown resistance to high-temperature conditions. Due to this pearl millet can be considered as a ‘future crop’ and hence its consumption and incorporation in the diets should be recommended¹⁰ as traditionally pearl millet has been a part of the Gujarati cuisine, and with evidence regarding the possibility of its cultivation even with rising temperatures, it should be promoted further.

Augmenting this, it has been documented that following the states of Uttarakhand and Tamil Nadu, Gujarat has the highest productivity of small or minor millets, which are known to be rich in nutrients, especially minerals, and are resistant to drought and stress situations. Also, 2011-12 data suggests that a significant amount of finger millet was consumed by rural Gujarat¹¹, indicating a positive scenario in the state for both the production and consumption of minor millets, making their incorporation easier in suggested diets.

DIETARY PATTERN AND FOOD CHOICES OF THE PEOPLE OF GUJARAT

The state of Gujarat has the locational advantage of enjoying a wide variety of seafood by having a long coastline, yet due to the influence of Jain culture and traditional values, the dietary pattern here is primarily vegetarian and only a few communities incorporate non-vegetarian foods in their diet. Gujarati cuisines show a lot of variety not only in terms of food preparations but also in cooking styles and combination of spices used for preparing different dishes and are considered to have a good nutritional value.¹² As there is the incorporation of milk and milk products in good amounts in the daily diet, with the main meals of the day mostly ending with a glass of buttermilk, the dietary pattern can be termed as Lacto vegetarian. But the number of vegetables being comparatively less, the Gujarati diet can be described as a vegetarian diet that lacks vegetables.¹³

The traditional ‘*Gujarati thali*’ which is an elaborate meal served both as lunch or dinner, comprises a variety of distinct food items and is known worldwide. It comprises chapati referred to as ‘*rotli*’ in Gujarati, rice, vegetable preparations referred to as ‘*shaak*’ which either could be sweet or spicy, and either dal or ‘*Kadhi*’ which is prepared from gram flour and curd and consumed with rice.

Snack items referred to as ‘*farsan*’ like ‘*patra*’, ‘*dhokla*’, ‘*khandvi*’, ‘*samosa*’, ‘*kachori*’, etc.; a dish made of lentils or whole beans; sweet dish referred to as ‘*misthan*’ like ‘*lapsi*’, ‘*ladu*’, ‘*jalebi*’, ‘*mohanthal*’, ‘*shrikhand*’, etc. and salad referred to as ‘*kachumber*’ along with a glass of buttermilk, are

also included and important components of the '*Gujarat thali*'. However, this nutritionally well balanced and diverse platter most commonly served in restaurants known as 'thali restaurants' is reserved for special occasions only, whereas the daily meal consumed by most households referred to as '*dal-bhat-shak-rotli*' is quite simple and limited but does contain the mandatory glass of buttermilk.¹²

The cuisine of Gujarat can be broadly divided into four distinct categories depending on the geographic location and cooking styles i.e. the cuisine of North and Central Gujarat (Ahmedabad, Vadodara); the cuisine of South Gujarat (Surat, Valsad) wherein the use of green chilies is predominant; the cuisine of Saurashtra region famously known as '*Kathiyawadi*' cuisine which is quite influenced by Rajasthani cooking because of the proximity of the region with the state, and the food is also relatively spicier as compared to the rest of Gujarat; and lastly the cuisine of Kutch region, the '*Kutchi cuisine*', wherein a lack of green leafy vegetables and some other vegetables is quite evident in the food consumption pattern due to the agro-climatic conditions.¹⁴

While each of these cuisines has distinct features, one common thing is that there is a hint of sweetness in most Gujarati preparations and some dishes even have a higher proportion of sugar as compared to salt and spices. At times jaggery is used for sweetness instead of sugar.¹² There is age-old traditional dependence on the use of sugar/jaggery which is quite evident as dals; vegetable preparations; cereal-based preparations like 'thepla' / 'dhebra' which are flatbreads made with flour, spices, curd and sometimes fenugreek leaves; and even pickles – all of them mostly contain sugar/jaggery. A popular belief about the inclusion of sugar or jaggery in most food items is that traditionally in earlier times, jaggery was incorporated to counter the saltiness in the water and to balance the sweet taste addition of lime juice or kokum was done, over the ages giving the cuisine its famous sweet-sour combination.¹⁵ Gujarat's 'sweet tooth' is a cause of concern with possible implications of obesity, diabetes, and cardiovascular diseases. But studies have shown that the prevalence of diabetes in Gujarat is lower as compared to other regions of the country with similar GDP, though the increase in the prevalence of pre-diabetes and metabolic syndrome is quite distressing and needs to be controlled.¹³

However, there is a window of opportunity for dietary modifications as with the heavy use of oil/ghee and sugar/jaggery and sweets, there is also dependence on steamed foods (although in the form of snacks), curd/buttermilk, and millets in the traditional diets of the state. This cultural habit can be used to modify recipes according to nutritional requirements. The dietary diversity of meals and individual food items can be improved by incorporating leafy greens, vegetables, and fruits according to seasonal availability; using traditional millets based recipes, and by using dairy products (low-fat if required) judiciously as per requirements. The cultural dietary practices need to be promoted, which is also endorsed by the four pillars of food and nutrition security that take into consideration cultural acceptance, as in the aspect of 'Use and Utilization', the use depends on traditional practices. Also taking into account the cultural element might help deal with food insecurity, as program interventions when planned with indigenous foods and traditional recipes modified for better nutritive value have a better chance of acceptability and compliance. Thus promoting traditional Indian diets and cultural foods may direct us to optimum health and nutrition.

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MAPPING *KHICHDI* IN GUJARATI CUISINE AND BEYOND

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ABSTRACT

Among the early cooked foods, the antiquity of which goes back to ancient times, *Khichdi*, a preparation of rice and lentils enjoys an important space in the cuisine heritage of India and particularly of Gujarat. Gujaratis and their fondness for *Khichdi Kadhi* are well known. It's popularly referred to as "comfort food". The variety of its preparations range from basic to gourmet innovations and elaborations which have evolved and space. These variations are based on the type and combination of cereals, lentils, vegetables and/or meats, seafood, spices, and condiments used in its preparation. Often the variations are defined by the availability of ingredients in different regions and thus regional versions. From the common masses to the ruling elite, the historical journey of *Khichdi* is fascinating particularly through the Mughal, colonial and subsequent times. References to *Khichdi* appear numerous in both, indigenous primary sources and European travelogues. These suggest varying connotations and related elaborations that make its mapping both fascinating and relevant. Besides being ubiquitous and integral to community festivities and offerings its journey gives us insights into contemporary society in Gujarat.

NOMENCLATURE AND HISTORY

The term *Khichdi* seems to be a vernacular derivative of the Sanskrit word *krsara*, a preparation of rice and sesame seeds, a precursor to *Khichdi*, a medley of rice and pulses. A plausible allusion to the same may be traced to the later Vedic period when rice and pulses like *masha* (urad), *mudga* (mung), and *masura* (masoor) are mentioned in the Yajurveda.

Megasthenes, the Greek ambassador at the court of Chandragupta Maurya, 321-297 BCE also observes that combination of rice and pulses was popular among the peasantry and was the staple food in early India possibly because of its simple ingredients and balanced nutritive value, an essential to the *saatvik* diet of the Ayurvedic tradition. Kautilya the author of the *Arthashastra's* concern and prescription on a gentleman's meal is pertinent. He says that it ought to consist of one *prastha* of pure unbroken rice, one-fourth of a *prastha* of pulses, one sixth of a *prastha* of ghee or oil, and one sixty-fourth *prastha* of salt.

K. T Achaya suggests that the unit *prastha*, may amount to 454 grams. In his view, while the level of fat is rather high in the above prescription, it amounts to a balanced diet and basic *Khichdi* comprises these ingredients. This explains its evolving as all-time comfort food.

In excavations at Ter, a village in Osmanabad district of Maharashtra, archaeologists have found two broken terracotta pots with traces of rice and moong dal cooked together in bulk. The site was an important mercantile center and part of India's ancient trade with Rome which explains cooking in large quantities. Moreover, the burnt grains converted to carbon made dating of the remains possible. Archaeologist Maya Patil Shahapurkar of Solapur University states that "this gives us an insight into the culture and eating habits of people 2,000 years ago".

Gujarat's extensive coastline made its maritime ports an essential arriving and departing point for visiting foreign merchants and travelers besides proselytizers. Many, who visited, have documented their observations and experiences.

Ibn Battuta, (1333-42), the famous Moroccan traveler who visited India in the mid-14th century in his description of grains produced in India states that "*Mung* is boiled with rice, then buttered and eaten for breakfast, this they call *Khichri*". He observes that Muslims however preferred bread and *kebab* for their morning meal. Both Alberuni and Ibn Battuta note that *Khichdi* was the staple food in India. This dimension has also been numerously noted by European travelers who visited India during medieval times in their travelogues. Interestingly, they describe its ingredients and in some instances, its recipe too.

While the sixteenth century witnessed the advent and dominance of the Portuguese, the seventeenth century is marked by the rising prominence of the European trading companies in the east.

The Dutch, French, English, Italians, German, Russian, and others visited India as traders, physicians, adventurers, travelers, etc. Europeans and other travelers visiting India often landed at Surat, the entrepot for maritime trade in Mughal western India. From here they proceeded to other parts of India. Many of them have left interesting accounts of their observations on contemporary times, political, economic conditions, and particularly on society and culture. These accounts are insightful on food traditions and mention *Khichdi* as the staple food of the peasant and masses. Few references on *Khichdi* from the European travelogues and other sources may be relevant.

Thomas Coryat (1612-17) the English traveler describes *Khichdi* as the common Indian dish of rice cooked with pulses and butter. He particularly notes its preparation in a large quantity at the shrine of the Sufi saint Moinuddin Chisti at Ajmer on the behest of the Mughal emperor Jahangir to be served to over 5000 pilgrims. Such largesse by the elite was an established practice on special occasions to express piety, gratitude, or celebrate special community events. It's a living tradition in eastern India to offer *Khichdi* to the deity on community religious festivals like Durga *puja* which is then partaken by all devotees as *prasad*. It comes in the category of *Kaccha* food which is considered to be ritually pure. *Kaccha* foods are foods cooked in water like dals, Rice, *Khichdi*, etc. Possibly, for large community meals, *Khichdi* was a practical one-pot preparation.

According to Francisco Pelsaert (1620-26) a Dutch merchant, lower classes, in particular, the peasants,

petty shopkeepers, skilled worker, peons, servants, and slaves in Mughal times subsisted on “nothing but the *Khichdi* made of green pulse mixed with rice over a little fire until the moisture has evaporated and eaten with ghee or clarified butter in the evening and the daytime they munch a little parched pulse or other grain which they say suffice for their lean stomachs”.

Likewise John Fryer (1673-1681) an English physician describes *Khichdi* as the food of the poor. According to the Tavernier (1641-67) a French merchant, meat was rarely consumed by the peasants. In the evening they had *khichri* which he describes as preparation of rice, lentils salt, and clarified butter. J. Ovington in his observations on the food of Baniyas (trading community) in Surat describes “*Khichdi* is a common dish, very nourishing though not savory”. Likewise the Frenchman Jean de Thevenot (1666-67), Italian, Gemelli Careri (1695) and many others refer to *Khichdi* as the modest meal of the producing classes like peasants and artisans.

These references from travelogues indicate that *Khichdi* was a staple, for common folk serving as their subsistence and giving them basic nutrition. While *Khichdi Kadhi* combination is the popular essential for the ubiquitous Gujarati, it is strange that the text cookery text Varanaka Samuchaya (1520 AD) makes no mention of *Khichdi* in its extensive classification of ingredients and preparations in Gujarat. However, *Kadhi*, a preparation of buttermilk and chickpea flour and spices is included in the list.

VARIED CONNOTATIONS

Besides the stable comfort food of the masses, the term *Khichdi* also connotes a medley or mixture. John fryer further adds that metaphorically, the term applied to mixtures of sundry kinds. He notes that elephants and horses were fed a medley classed as *Khichdi*. Kamaluddin Abdur Razzaq (1443), in his description of royal elephants at Vijaynagar, notes that they were fed *Khichdi* to which was added salt white sugar, and oil. Athanasius Nikitin, a Russian, traveling from Surat towards Aurangabad in 1468 also notes that horses are fed on peas besides *Khichdi* boiled with sugar and oil. It’s interesting that this connotation of *Khichdi*, a medley, survives to date and is used in different contexts.

There are a popular TV series and Bollywood film in a Gujarati setting named *Khichdi*. *Khichdi*, is so deeply rooted in the Indian sensibilities that we have numerous idioms on *Khichdi* in Hindi and other vernacular languages. In Medieval Gujarat, the term *Khichdi* connoted a revenue obligation. In the Khatima or supplement of the *Mirat-i-Ahmadi*, a primary sourcebook on Mughal Gujarat, the term *Khichdi* is described as a revenue obligation, levied upon the *rayats* (cultivators).

Elaborating on it, Ali Muhammad Khan, the mid-eighteenth-century *sube-diwan*, and chronicler refer to the *wanta* tenure. This was a settlement made by the Muzaffarid Gujarat Sultan Ahmad Shah I(1411-1442 AD) with subordinated chiefs whereby they retained a quarter of their lands as *wanta or banth* and the remaining portion classed as *talpad* was claimed by the Sultan. These zamindars were also required to remit tribute. Gradually instead of this tribute, the bigger zamindars were obliged to provide military service whenever summoned. *Khichdi* was the levy collected from *rayats* (cultivators) in *Parganas* which was then remitted by the *Zamindar* as a tribute to the Mughal administration. The details listing stipulated amounts be remitted under the head of *zamindar’s* tribute and *khichri* from

rayats was collected by the *subedars*. Interestingly this *Khichdi* amount is cited in cash by the chronicler. It may likely have earlier been a remission in kind.

GOURMET ELABORATIONS

Khichdi seems to have been the comfort and staple food- through pre-modern times particularly because of its cooking is largely based on the use of inexpensive local ingredients. A unique illustrated late sixteenth-century culinary text is the *Khichdi Nimatnama*, a book of recipes compiled by the passionate gourmand and food lover, Sultan Ghiyasuddin Shah (1469-1500 AD) of Malwa. In this work, there is a reference to *Khichdi* of Central Asian fruits which are described as the favorite of the Sultan. Possibly it may be *Khichdi* enriched with these central Asian exotica, a precursor to the imperial version of *Khichdi* or a medley of central Asian fruits. *Khichdi* connoted a mixture too, as mentioned earlier.

It's interesting to note that the Mughal emperors developed a fancy for *Khichdi*, the modest staple of the less privileged. The second Mughal ruler, Humayun (1508-56 AD.) is known to have entertained the Shah of Persia besides other delicacies with the Indian dish of rice and peas, a version of the ubiquitous *Khichdi* which the guest particularly relished. During the Mughal era, the staple *Khichdi* got elaborated to gourmet versions with the addition of strong expensive spices, dry fruits, nuts, and meats. Enhanced access to ingredients sourced from distant places and intermingling, assimilation, adaptation, and innovations of different food traditions in the imperial kitchens made imperial cuisine exotic, ramifications of which are gradually noticeable in the regional styles in successor states since the eighteenth century. Though a modest dish of the humble folk, *Khichdi* cooked for emperors got an imperial touch!

In the *Ain-i-Akbari*, Abul Fazl refers to a classification of three categories of food with their recipes that were prepared in the imperial kitchen. *Khichdi* came into the category of *safiyana*, consumed on days of abstinence from meat. Accordingly, it was a preparation of rice, lentils and ghee, and salt. Akbar is known to have abstained from meat on Fridays and later even on Sundays. A more gourmet version of *Khichdi* was the *halim*, an elaboration of *kashk* which is prepared with meat, wheat, gram, carrots, turnip spinach, ghee, salt, ginger, onions, spices, saffron, cinnamon, cloves, cardamoms, cumin seeds, and fennel. This used to be leisurely cooked over eight to ten hours and continues to be an exotic delicacy to date in various parts of India.

A mention of the legendary Birbal's *Khichdi* and its axiomatic legacy may be relevant. Among the many anecdotes of Akbar and his witty courtier Birbal, a famed one is of Birbal's *Khichdi* illustrating the ubiquitous character that *Khichdi* had come to assume by this time.

Jahangir continued with his father's regimen of abstinence from meat on stipulated days. While traveling through the Mughal *suba* of Gujarat, he sampled a local version of *Khichdi* in which millet was used instead of the conventional rice which he said "suited him well" and ordered that this be served to him on his vegetarian days. A richer Gujarati *Khichdi* called *lazizaan* made of rice cooked with pulses, ghee, spices, and nuts, and raisins were among his favorites which he ate on his meat abstinence days. A simple peasant dish not only made its way to the imperial kitchen but assumed an *haute* gourmet character.

It's noteworthy that during the reign of Shah Jahan, Sebastian Manrique, the Portuguese missionary

and traveler was served an extravagant *Khichdi* which was flavored with expensive ingredients like ‘almonds, raisins, cloves, mace, nutmeg, cardamom, cinnamon, and pepper’. Alexander Hamilton notes that Aurangzeb was particularly fond of *Khichdi* which some class as Alamgir *Khichdi*. Under the Nawabi successor state of Awadh, the chefs carried the humble staple fare to a ridiculously grandiloquent level. The wealth and pomposity of rulers were displayed with the creation of artistic dishes by royal chefs. *Khichdi* too assumed a new Nawabi version. Almonds were painstakingly cut to resemble grains of rice, and pistachios were shaped to look like lentils. It was said that once savored, this dish could never be forgotten.

European sailors were made to eat *Khichdi* once or twice a week on what came to be classed as days of abstinence from meat, banian days, possibly because of its comfort factor and strengthening powers. Gradually there evolved an Anglo-Indian version classed as kedgerie. Lizzy Collingham says that fried onions, fish, and hard-boiled eggs were added to the basic rice lentil *Khichdi*. In 1831 the Oriental Translation Committee published a pamphlet entitled ‘Indian Cookery’ to cater to the palate of ‘individuals and families who have from a long residence in the East, acquired a strong predilection for Indian modes of life’. Among the items listed with instructions for their preparation, was included *Khichdi*. The further anglicization of *Khichdi* by British cooks was the addition of smoked Haddock and the abandoning of lentils. This version was a popular breakfast dish among the English aristocracy during their country-house weekends.

At the outset, *Khichdi* seems to have been a nutritious subsistence comfort food for the masses and then increasingly assumes a gourmet character in the Mughal imperial kitchens. The social divide is testified in the references from primary sources of the basic and the imperial version. In present times it continues to remain a comfort food across India though every region has its version with combinations of rice, cereals, lentils and spices, vegetables, meats, etc. the names also vary and can be an interesting separate study. Incidentally, the non-vegetarian version is classified as *khichda* or *Halim*, a delicacy for meat lovers.

In Gujarat, *Khichdi* has a different trajectory. It has evolved as a distinct and integral part of Gujarati cuisine. According to Prof. Ramji Savalia, of the B. J Institute of Learning and Research, Ahmedabad “the only staple that has remained unchanged for the last 600 years is *Khichdi*, which was eaten regularly by the founder of Ahmedabad, Gujarat Sultan Ahmad Shah”. Actually, *Khichdi* and *Kadhi* may be described as a staple for vegetarian Hindu Gujaratis for their evening meal. Quite likely the popularity of *Khichdi* as comfort food, its nutritive attributes, and its more elaborate rich versions eaten across social classes made it essential and popular for vegetarians Hindus. Further, *Khichdi Kadhi* is a regular feature in the evening meals offered as *Prasad* by big temple organizations like the Swaminarayan sect BAPS, ISKON, and Jalaram temples as an outreach to devotees and the underprivileged poor. The *Kadhi* in Gujarat is a unique combination of salt, sweet-sour and spicy flavors.

Unlike in other regions of India, *Khichdi* knows no urban-rural nor caste, class divide, remaining an all-time favorite even in present times in Gujarat in a unique way. It often figures in the rice options in the menu at all small and big city multi-cuisine restaurants in Gujarat. This is passionately relished by guests and in individual households with its age-old four companions- *ghee*, *papad*, pickle, and curd.

In Gujarat, it is always served with the Gujarati *Kadhi*. The passionate quintessential traveler that a Gujarati is, *Khichdi Kadhi* is one preparation that is a must on the menu in the most remote tourist locations in India and even abroad. Gujarati tour operators ensure its availability to lure and cater to the palates of the traditional Gujarati vegetarian tourists who are famed to carry their traditional dry lip-smacking snacks. They arrange for their *maharaja* (cook) and his paraphernalia to travel in advance and dish out the traditional fare along with the essential piping hot *Khichdi Kadhi* and their ‘companions’.

In recent times, *Khichdi* enjoys an essential space in the famed elaborate Gujarati thali, even at the very high-end restaurants that serve Gujarati cuisine. It may be worthwhile to mention that ‘The Grand Bhagwati’, high-end five-star hoteliers and caterers, offer *Khichdi Kadhi* even on their wedding menus, an aspect unimaginable elsewhere in India. Perhaps an important insight on the blurred class barriers as far as Gujarati palate is concerned. Interestingly, the ‘humble’ *Khichdi* shares space with the most exotic Indian and international food spread and is relished by all. This is indeed an interesting elevation in stature of the age-old humble comfort food!

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FOOD CULTURE OF THE PEOPLE OF KUTCH- GUJARAT

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ABSTRACT

Kutch is known as the paradise of Gujarat and its food and people have their unique flavors amidst the adversity of the dry arid land called the Runn of Kutch which is a white desert. This chapter covers the food patterns of the *Rabari* and *Ahir*, communities of Kutch including their special foods during the festivals. Traditionally they practice home remedies for different clinical conditions rather than seeking medical help. Their main focus during any ailment is the diet and the kitchen is their main source of medicine.

INTRODUCTION

Kutch was once the Princely State of India and is said to be the Paradise of Gujarat. Kutch district of Gujarat is well known for its distinct culture, custom, food, costume, dialect, literature, music, art and climate. Amitabh Bachchan, in a famous Gujarat Tourism advertisement, says “*Kutch nahin dekha toh kuch nahi dekha.*” The Legend Artist of Bollywood could not say better words than this to describe the heavenly place of Gujarat!

The District is surrounded by the Gulf of Kutch and the Arabian Sea in the south and west, while the Northern and Eastern parts are surrounded by the Great and Little *Rann* (seasonal wetlands) of Kutch. According to Geologists, Kutch is more ancient than Himalaya. There is proof that this region has emerged three to four times from the Sea. Kutch District, at 45,691.895 square kilometers (17,641.739 sq mi), is the largest district in India. The Kutch peninsula is an example of the active fold and thrust tectonics. In Central Kutch there are four major east-west hill ranges characterized by fault propagation folds with steeply dipping northern limbs and gently dipping southern limbs (Karanth, et al., 2007).

DIET OF KUTCHI PEOPLE

The people of Kutch believed in simple living and high thinking. The staple food is *rotlas* made of pearl millet which the locals relish with buttermilk or *chaas*, white butter, and Jaggery (*Gud*). *Khichdi* made of rice and *dal* (legumes) is liked by everyone. If we visit any house, first the glass of water is served as a custom. Tea which was unknown sixty years ago has become the universal beverage among all classes of people. Milk-based items like curd and ghee are very common in food preparation. Groundnut oil and groundnut are generally used to make the food more delicious. Usually, the *Kutchi* cuisine consists of *Roti* or *Kadhi*, Curd, *Kadhi*, Buttermilk, Vegetable, Papad, Salad, Thepalas, Khakhras, and Sevare made and stored as food during traveling.

Savouries and <i>chaats</i> of <i>Kutchi</i> cuisine	Sweets of <i>Kutchi</i> cuisine
<i>Khaman Dhokla</i>	<i>Sweet Milk Shake</i>
<i>Undhiyu</i>	<i>Lassi</i>
<i>Muthiya</i>	<i>Halwa</i>
<i>Raita</i>	<i>Adadiya paak</i>
<i>Dahi Vada</i>	<i>Gulab jamun</i>
<i>Kachoris</i>	<i>Soan paapadi</i>
<i>Bhel</i>	<i>Penda</i>
<i>Dabeli</i>	<i>Mohanthal</i>
<i>Bhakarwadi</i>	<i>Gulab Paak</i>
<i>Papad</i>	

MOUTH FRESHENERS (*MUKHWAS*): POST MEAL REFRESHER

The use of mouth freshener after a meal is very common in Kutch. Common mouth-freshener are prepared by combining seeds such as flax seeds, fennel seeds, and white sesame seeds. Lemon juice is added to enhance flavor and crispiness but it is optional. Besides aiding digestions, the sesame seeds are rich in iron content and help to increase iron reserves and prevent iron. The flax seeds play a vital role to build our cell coverings, signaling path and neurological structure as it is rich in omega -3 fatty acids. Lemon juice is a good source of vitamin C which helps in the further absorption of iron.

ETHNOGRAPHY AND FOOD OF THE THE RABARI TRIBE OF KUTCH

According to the mythology, the origin of *Rabari* is from Lord Sankara when he was doing penance on the Himalaya he created a five-legged camel and a person called *samabal* to look after it. Therefore *sambala* is considered to be the chief of the *Rabari* community. Lord Sankara got him married to three divine beauties and had four daughters out of her namely Namal, Kamal, Premal, and Uma.

It is believed that four handsome youths being attracted by their beauties wanted to marry them. Despite being Rathod, Padhiyar, Parmar, and Yadav. So they converted *Rabari* and married them and thus they no longer remain Rajputs. According to historians, the *Rabaris* are the people of central Asia who belong to the *Burbar* community named 'Yuberis' by 'Verver' which are today's *Rabaris*. There are mainly three divisions of *Rabari* as follows:

1. Kutchi Rabari
2. Dhebariya Rabari
3. Vagadiya Rabari

Another belief is that the *Rabaris* have migrated via Afghanistan via Baluchistan and have now over 133 subcastes and as Hindus. As per folklore, the Rabari women wear dark maroon or black color as they are still mourning the death of their King of Sindh Dodo Soomro who died fighting a war against Allauddin Khilji, who wanted to marry his sister.

The *Rabari* Tribe is one of the main tribes of Kutch and is shepherds (nomadic) whose main asset is their animals. They raise their cattle, camels, and goats and are usually settled in areas away from the main town or city. They follow matriarchal society where the eldest woman is the household head and the men are engaged in rearing the animals. These days this community is also involved in farming.

The tribe is distinctly recognized by blue-colored tattoo (miraculous signs) on their arms and necks known as *chundna* or *trajva*. The women adorn themselves with these black or green marks using a sharp needle or thorn dipped in black soot or a green *golibad* creeper paste and etch various designs or symbols reflecting their surroundings. Once the tattoo is completed, turmeric is applied as an antiseptic. These tattoos are believed to be the only adornment for women that will accompany them till death and elderly women have maximum tattoos etched on their entire body.

Their mud houses are adorned with exquisite artwork which includes motifs of animals embedded in mirrors and all the women are involved in the mirror work hand embroidery which is visible on their dresses (*ghaghro*, *kanchali*, *kedio*, *luni*, *odhani*), walls, bags, toran (welcome band outside the house) and even footwear. The use of mirrors is common as the Rabaris believe that the mirror reflects the negative elements away from the house. The color of their dresses and *odhani* or *luni* that covers that head also identifies their age and marital status and their spiral Nagali earrings also denote their tribal distinctiveness.

Dietary Pattern of Rabaris

Being shepherds, milk is treated with reverence and is a sacred food offered as a welcome drink to the guests as a gesture of friendship. During special occasions such as an engagement, a glass of milk is offered as a symbol of acceptance of the relationship. A glass of milk is also a mark of concluding a dispute.

The early history of Kutch indicates abundant cultivation of paddy, green gram, and *kad* (gram) in the Lakhapad taluka which was a fertile land due to the Sindhu River which was flowing through Kutch. Millets were abundant in the Vagad area of Kutch.

Kutch was a green land with an abundance of herbivores animals, thus milk remains an important part of the Kutchi population. The main diet of the Kutch's people was rice, green gram dal, milk, ghee, butter, buttermilk along millet. The majority of the *Rabari* are vegetarian and the daily diet of *Rabaris* consists of home-based bread of Pearl Millet or Wheat and Jowar.

- The morning diet consists of tea around 9 am with millet *Rotla* or *Roti*, *Kadhi*, onion, and potato

curry. Sometimes other vegetables such as ladiesfinger, cabbage, brinjal, or bitter gourd are prepared.

- They cook extra *Rotlas* and *Rotis* for children who can have it with jaggery and ghee or curd during the day.
- Lunch diet includes the addition of green chilies, buttermilk, butter, curd, and jaggery with the meal prepared in the morning.
- The evening meal consists of millet *Rotla* and *Khichdi* with milk, or brinjal potato curry.

ETHNOGRAPHY AND FOOD OF THE THE AHIR TRIBE OF KUTCH

According to the *Bhagwat Puran* the origin of *Ahir* is related to *Yadavas*. *Ahirs* are believed to be the heirs of *Aahinaag*. Many of the followers of Lord Krishna left Mathura with him and came to Saurashtra, among them, some of the *Ahirs* stayed back in Vagad, the area of Kutch district. They developed a village called Varajvani. This area is known as Pranthad area. Therefore the residents are known as *Pranthadiya Ahir*. There are main divisions of *Ahirs* in Kutch:

1. Pranthadiya Ahir
2. Machhoya Ahir
3. Boricha Ahir

Dietary pattern of Ahir

Food patterns are the same as *Rabaris*, but very often they prepare *Thumro* of *Jowar*. They eat *Thumro* which is made of coarsely grounded *Jowar* with Milk. They do not sell cow milk. They consume cow's milk in their daily diet.

Other special fasting days such as Ramnavami and Shivratri are also observed. They observe the full day fast and consume items prepared from *Samo*, *Rajgira* Flour, and potatoes. Some sweets are made from mashed sweet potatoes by adding jaggery and ghee to them. Other special days like weddings and baby showers are also celebrated frolic ally with the help of food. The normal celebration of a wedding consists of two days' celebration: *Manado* and the marriage day. The baby shower is celebrated when the 'would be mother' is greeted with blessings of the elderly of the family and community. The special foods of marriages and baby showers are *Shiro*, *Lapsi*, *Bundi*, *Mohanthal*, *Laddo*, and *Gathiya* and *Puris* along with the routine food items such as *Rotla*, *Roti*, Vegetable Curry, *Kadhi*, Rice and *Papad*.

DIET DURING THE PREGNANCY

First Trimester: Milk, ghee, butter, green gram dal, seasonal healthy vegetables, buttermilk, and wheat *chapati* is given. Millet loaf is avoided as it may cause miscarriage. To avoid miscarriage, the former generation used to give cumin seed as it was cool for the system and butter as it is heavy to digest.

Second Trimester: Milk, ghee, porridge, and *shira* is given to nourish the child in the womb. Nowadays fruits are given along with the above-mentioned diet for the mother and child's nourishment.

Third Trimester: Milk and ghee in larger quantities. Now, milk, ghee, fruits, and vegetables are also given.

DIET POST PREGNANCY

Post Delivery Dietary care: Two hours after delivery a warm soup of bishop weeds seed and jaggery is given to the mother. It is believed that having this soup and millet porridge helps in cleaning the uterus completely. On the first day of delivery, wheat is not preferred as it is heavy to digest. In every two hours of interval millet porridge and milk is given. For two days early in the morning on an empty stomach bishop weed seed and jaggery soup is given to drink and only after two hours millet porridge is given. From the second day to the sixth day *Katla* is given to regain the lost energy and for nutrition and wheat gruel is then given instead of millet flour porridge. Vegetables are not given till the sixth day of delivery.

Dietary Pattern For 8 to 10 days post-delivery: On the sixth day after delivery, vegetables mainly brinjal, bottle gourd seasoned with ghee without adding chili powder are given to the mother. In the noon and in the evening milk and rice hotchpotch is given. In the morning as usual *shira*, gruel and *katla* was given, even when she felt hungry during the day *shira* or porridge is given. Butter is avoided as it is considered to be heavy to digest and buttermilk is also avoided as it would be acidic for the body.

OTHER FESTIVAL FOODS

Indian culture believes to celebrate each festival with great pomp to express unity and harmony. Normally in Gujarat, the cuisines are prepared according to the climate during the festivals.

Diwali - The former generations did not prepare any snacks but as a sweet they used to make Dhokli made with Ghee and Jaggery or Challa. Depending upon the economic status they prepare sweets. Sweets are made at home like GulabJamun, Kopro Paak, and other sweets like Penda, Jalebi, Mohanthal, Dry Fruit Halwa, Kajukathli, Anjeer, and Pista roll and savories like Gathiya, Fafda, Chavanu, and Farsi puri are bought from the sweet shops.

Holi- The former culture did not prepare any sweets or snacks during the Holi celebration but they used to have Dates and Coconut in the festivals. The present generation follows the same ritual adding Puffed Jowar, Jowar Dhani and Patasa brought from the market.

Janmashtami- They prepare sweet Puri, Bland Puri, Puris made of Besan and Rajma flour, Debra and Thumaro made of coarsely grounded millet or Jowar blended in buttermilk. The food is eaten cold on Satam which is prepared on Raandan Chhat (the previous day), Garlic Chutneys made of Garlic and Ground nuts are served with the Snacks.

Kali Chaudash- The former generation did not prepare any snacks or sweets but today's generation prepare the onion and chilly bhajiya and resolve the family quarrel. It is a mythological belief. So everyone practices it.

Mahashivratri- Mahashivratri is a famous Hindu festival that is celebrated with great enthusiasm, on this day. People worship Lord Shiv and seek his blessings. The former generation steamed sweet potato and used to have it with milk, sugar, and ghee.

Ramnavami- The past generations prepared sweet samo. In the present generation, people prepare seasoned sama, potato vegetable and shira of rajgira (Amaranth) at the home. Rajgira means royal grain. It is also known as 'Ramdana', meaning God's grain.

HOME REMEDIES AND DIET DURING SICKNESS

Kidney Stone: Traditionally the patient is given a lot of water and *bijora* juice to drink. A very light meal like rice hotchpotch, rice-dal, and wheat chapati, vegetables like bitter gourd, bottle gourd, and buttermilk are given. Spicy and oily foods are avoided. Vegetables like brinjal, tomato, and leafy vegetables are also avoided.

Urinary Tract Infection: In this condition diluted goat milk with water is given. A light diet comprising wheat chapati, rice hotchpotch, curds, and green gram dal.

Uterine Bleeding: Bishop weed seed and jaggery soup are given for two to three days early in the morning on an empty stomach so that all the impurities are flushed out of the system. After three or four days of dry black resin soaked in sugar water is given in the morning. Less soured curds, rice, fennel seed powder for five to six days, and also rice hotchpotch and milk is given. At times porridge and *shira* are also given to regain the lost energy.

Miscarriage: In this clinical condition black tea and dates are given for two days. Very light meals like green gram dal, rice, hotchpotch, chapati, and milk are given. Use of ghee is avoided for at least a month.

Jaundice: The former generation tied basil twigs or castor flowers mala on the neck. The patient is made to chew the leaves of *vikra* herbs. Milk is avoided but roasted gram, sugarcane juice, chapati and vegetable cooked with very little oil was given.

Diarrhoea: Opium or bud of opium, buttermilk with cumin seed powder is given. A very light diet like curd, rice hotchpotch, boiled sev with sugar and ghee is given.

Cold: Boiled milk with turmeric and jaggery are given. Thorny cactus and *dandalio cactus* are slit opened and stuffed with salt and turmeric which is then heated a little with hot sand wrapped in a cotton cloth and tied on the chest of the patient before going to bed. It is believed that this therapy sucks out all the phlegm. The diet given is very light like green gram dal, chapati and warm milk. Also warm *Kadhi* and *osaman* of rice hotchpotch is given as a drink.

Fever: Ground mustard and onion with buttermilk and the paste is applied on the sole of the feet. This would lower the temperature. Bitter *cheritta* water is given to drink. Millet loaf is not given to eat as it was considered as poison.

Stomach ache: Lemon Squash, jaggery water, and sesame seed powder are given. Boiledsev, Green Gram Dal, Rice, and Curds are given only.

Constipation: Castor oil is given to drink and castor leaves to chew. A normal diet like *chapati*, green gram *dal*-rice, vegetable like green onion and spinach like fenugreek leaves and rice hotchpotch, curds and buttermilk.

NUTRITIOUS, TRENDY AND UNIQUE *KUTCHI* MEALS

Dabeli: This is the worldwide famous dish and its western form ‘burger’ is also very famous globally. *Dabeli* contains all the essential nutrients in itself. The energy, carbohydrates, protein, fats, minerals and vitamins are included in the form of bun, peanuts, potatoes, imli, garlic, and green chutney. People of young age relish this item as a fast food- as healthy fast food.

Thumro: This nutrient-dense specialty requires very less cooking process. It is made from whole *Jowar* (sorghum) and or pearl millet grains. It can be either sweet or salty. The salty form can be consumed either with curd or plain and the sweet form can be consumed with milk. *Thumro* is a very nutritious food for all age groups, be it a 3-year-old kid or a 60-year-old man. This is a very nutritious pot of meal originated from Kutch.

CONCLUSION

Kutch, being the land of color, art, enthusiasm, culture, principles, and humanity. It has always been the first choice of tourists, be it the food or the dessert. The region has the fragrance of salty desert and their high spirit of life. Food is the most colorful and nourishing part of their culture, be it a birth or a wedding, or a routine day. Milk is treated with reverence and millets are an integral part of their diet. Millet based rotla, jowar based *thumra* and the practice of Kichadi and milk for dinner are highly recommended for the **Eat Right Movement**.

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ANTHROPOLOGY OF FOOD OF SAURASHTRA AND KATHIAWAR

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ABSTRACT

Gujarat is one of the finest estates in India. Different food culture, religion, caste, communities, accents make Gujarat stand uniquely. We can say, Saurashtra is the heart of Gujarat and Kathiawar is the heartbeat of Saurashtra. To put into a nut-shell, the food trends and dietary patterns of Saurasthrians and Kathiawar are complementary. Nutritive benefits of different food recipes consumed by the people of both regions have been appreciable. Different life events have their trends of foods. The major communities of Saurashtra and Kathiawar possess almost similar food habits.

INTRODUCTION

Gujarat is one of the diverse states of India. The history of Gujarat widened over a long year from the age-old Harappan Civilization to the Mughal period. Gujarat's everlasting journey from Roots to Wings is eternal with historical and cultural conducts glorifying the State. Gujarat is the vibrant state of India as entitled by our Honorable Prime Minister Mr. Narendra Damodardas Modi. Gujarat is also the land of legends, the birthplace of many Freedom fighters like Mahatma Gandhi, Sardar Vallabhai Patel, Morarji Desai, and many others who fought for the independence of India. Each region of Gujarat has its own unique culture, tradition, accent, and food trends.

According to a folk verb "*Jaisa Ann Waisa Mann*" the choice of food strongly influences our way of thinking. As will be the choice of food so will be the thoughts and as will be thoughts and so will be the actions and as will be our actions so will be our behavior and finally as will be our behavior so will be our destiny. So food directly influences our destiny.

Food is the connecting bridge between tradition and cultural uniqueness whether that means a dish of *Khichdi* for a boy in Saurashtra to a plate of *Pav Bhaji* in Ahmedabad. Even though the food trends changed drastically over the few decades, the real essence of traditional food still makes us mouth-watering. The satisfaction we get from traditional foods are unmatched. This chapter discusses the food values and trends of Saurashtra and Kathiawar in the state of Gujarat.

ETHNOGRAPHY

Saurashtra region known as ‘*Sorath*’ is a peninsular region and covers 11 districts of Gujarat and located on the Arabian Sea coast (Ray, 2009). It is covered on the South and South-West by the Arabian Sea, on the North-West by the Gulf of Kutch, and the East by the Gulf of Khambhat. From the higher of these two gulfs, the tiny Rann of Kutch and Khambhat, waste tracts half salt morass half sandy desert, expanse interior towards one another and complete the isolation of Kathiawar, except one slender neck that connects it on the north-east with the mainland of Gujarat (Nowell, and Jackson, 1996).

The peninsula’s part is sometimes referred to as Kathiawar after the *Kathi Darbar*, which once ruled most of the region (Trivedi and Soni, 2012). They believed to migrate in the 8th century and controlled the Southwest peninsula of contemporary Gujarat. *Kathis* belong to the Rajput clan and were spread out in Amreli, Bhavnagar, Panchal Pradesh, and Junagadh and ruled the entire region. *Kathis* have an important role in the documented history of the region as they arise as the special culture and tradition having the highest virtues of life. Many prominent signs of religious and spiritual qualities are born in this community. They have influenced the peninsula during the period of 16th to 20th century.

“*Amara Kathiawad ma ko 'k di' bhulo pad bhagwan, tu thaa maro mehman, tara eva karu sanman key taney Swarag bhulavu Shamla*”

(O Almighty, become lost somewhere in our region Kathiawar someday, we will respect you so much that you’ll forget your abode) is famous local folklore inviting God to visit Kathiawar.

However, Saurashtra isn’t entirely synonymous with Kathiawar, since a little part of the historical Saurashtra region extends further than the Kathiawar region.

PEOPLE AND CUSTOMS

This region is home to many indigenous people such as the *Ahir, Barot, Bramhin, Charan, Jain, Kanbi, Karadia, Kharwa, Kathi, Khawas, Khoja, Koli, Lohana, Maher, Maldhari, Nagar, Rabari, Rajput, Sindhi, Soni, Vaniya* and *Vankar*. The main occupation of these communities is agriculture, farming, livestock, and trade.

The accent is rough but sweet-toned. It is slightly different from Gujarati as the peninsular was initially inhabited by *Kunbi* and *Koli* followed by *Kashtriya* clans like *Kathi, Rajput, Ahirs*, and *Mers* and other communities such as *Bharwads* and *Charans* from the Northwest. Some Rajputs from Sindh came along with their subjects and brought the flavor of Sindhi language with them which is still found influenced in *Kutchi* language. All in all, language has the mixture of the accent which has the flavors of different regions they came originally from. Kathiawad has a unique *talpadi* (Local) accent, which is very famous and identical worldwide.

FOODS LINKED WITH LIFE EVENTS

Birth- It is the process of bringing the child from the uterus to the world. Traditionally the majority of the communities perform rituals of welcoming the newborn. In that ritual, the elderly of the family give the sweet drop of water mixed with jaggery (*Gadthuthi/ Ghutti*) to the newborn.

Mundan- The ceremony of the first shaving of the head of a baby boy is called '*Mundan*'. Some communities celebrate this ceremony grandly whereas; others do it simply with no celebration. A feast is offered to the family and relatives.

Sacred Thread (*Janeo*): This ritual is performed by some common communities like *Brahmins, Lohana, Nagar, and Bavaji* in which sacred white thread is worn by boys followed by poojas and Yagya. On this occasion, the family invites their relatives and community people and serves them special foods such as *Kheer* (made from milk, rice, and sugar) and *laddos* along with other regular menu items.

Engagement (*Gol Dhana or Saggai*)- The engagement ceremony in Gujarati is called *Goldhana*, this means coriander seeds and Jaggery. Different sweets and Namkeens are served to the family and relatives.

Marriage- Gujarati weddings are full of entertainment and happiness and the wedding feast includes sweets such as *Shirkhand, Aam Ras (Mango pulp) Adathiya, Carrot Halwa and Farsans (Namkeens)* like *Mix Bhajiyas, Lilva Kachori, Patra, Khaman Dhokla* accompanied with *Rumali Roti, Parathas, Puris and Naans* and curries such as *Undhiyu, SevTameta, Lasaniya Bateta, etc.*

Baby Shower (*Shimant*)- In Gujarati, the ritual of a baby shower is called '*Shimant*' locally known as *Khodo Bharavo* which means to fill the mother's lap with blessings and happiness. This ritual is not celebrated by all communities but most of them celebrate it more than other ceremonies and the feast served to relatives and community people is just similar to food served at weddings.

Funeral (*Antima Sanskar*)- Death is the ultimate truth of our life. The ritual followed by the relatives of the demised person is very simple and with grief. The *ladoo* made with whole wheat flour and jaggery is packed with the dead body. Traditionally for twelve days after the demise of a young person, a simple menu like *Millet Roti, Khichdi, Mung dal, and buttermilk* is served.

FOOD TRENDS OF DIFFERENT COMMUNITIES

Kathiawar region of Gujarat is a **semi-arid region** and pulses and legumes are commonly eaten along with cereals used are pearl millet, sorghum, corn, wheat, *kang*, and rice and vegetables such as brinjal, ladies finger, snake gourd, bottle gourd, ridge gourd, bitter gourd, cluster beans, pumpkin, broad beans, and green peas. The common roots and tubers grown in Kathawad are elephant yam, potatoes, sweet potatoes, carrots, beetroots, ginger, garlic onions and the leafy vegetables grown and consumed are spinach, fenugreek leaves, coriander leaves, and amaranth leaves.

Kathiawadi food is a spicier than Gujarati food and less sugar and jaggery are used in their curries. Commonly used fat is butter, ghee, mustard oil, groundnut oil, sesame oil and common nuts are peanuts and sesame seeds. Milk or milk products such as curd and buttermilk are a part of every meal.

THE FOOD TRENDS OF LOCAL COMMUNITIES

Each community of this region has their own culture and celebrations.

- The *Brahmins* are associated as priests in the temples, perform socio-religious ceremonies, and belong to the highest class of the society.

- The *Lohanas* are in the trade and business and belong to the *Survanshi Kshatirya* family;
- The *Soni* community is Goldsmiths and the *Nagar* community comprises artists and poets.
- The *Jain* community is involved in the business, trades; merchants in textile and jewelry. The restricted foods for *Jains* are roots and tubers to prevent injury to microbes living underground and leafy vegetables especially during the four months of monsoon. In some seasons they consume only warm water to stop harming living organisms in the water. In monsoon, they do not eat Brinjal. They restrict the use of honey.
- The *Kanbi* community includes the *Patels* further divided into the *Kadva* and *Lehua Patels* who are involved in farming, trade, and are merchants and consume wheat, rice, and dals in their diets as compared to *khichadi*.
- The *Kharwa*, *Khoja*, *Kodi* communities are involved in the fishery, trading, and farm labor respectively. The use of non-vegetarian foods is common in the *Kharwa*, *Khoja*, and *Kodi* communities.

FOOD AND FESTIVALS

The festivals in Kathiawad are celebrated with much fun and frolic. The entire atmosphere lightens up with color and light. Kathiawad's favorite celebrations are commemorated with much zest and enthusiasm and the food becomes an integral part of all the celebration.

Makar Sankranti - *Chikkis* are made from peanut, dry fruits, coconut, sesame seeds (white and black), Roasted Gram *dal* (*Dariya*). Puffed rice balls popularly known as '*Mamara Ladu*' are also prepared. They eat *Jalebi* and *Undhiyu Shaak* on this special day. *Chikkis* are very famous for their unique taste, crispiness, and aroma. The key ingredient or hero of all *chikkis* is Jaggery. It is a very good source of antioxidants and phytophenols and it plays a very important role in diluting blood clots and preventing nervous diseases like dementia and Alzheimer's.

Although jaggery is also made from the sap of coconut and date palm, the one made from sugar cane is the one that's used most widely. Peanuts are an excellent source of resveratrol, another phyto-phenol known to prevent induction of nervous diseases and regulate the blood volume by flushing out toxins. *Chikkis* are loaded with essential amino acids that are very essential for growth and development. It is a perfect choice to munch instead of fast foods like noodles and wafers. *Chikkis* not only fulfill the basic nutritional requirement but also give satiety to kids.

Holi - *Patasa*, Dates (*Khajoor*), Dried dates (*Kahrek*), Roasted Bengal Gram (*Darriya*), and *Lapsi* (broken wheat sweet dish) are eaten. Dates are an excellent source of essential vitamins, minerals, fiber and a great finger food.

Sitla Saatam and Janmashtami - A day prior to the birth of Lord Krishna is the *Sitla Saatam* festival where *Shitla Maa*, the Goddess who keeps the body cool, is worshiped and a special *bajra* flour-jaggery sweet *ladoo* called *kuler* is offered. *Janmashtami* day is fasting for most Hindus and the next day is celebrated as *Nand utsav* wherein many sweets and *namkeens* are prepared.

Navratri- Worship of goddess Durga during holy nine nights along with fasts and a special *Naivaidya*

Prasad is made for the Goddess and people enjoy the traditional Raas-Garba dance of Gujarat and the tenth day is celebrated as Dussehra wherein *jalebi*, *fafada*, *gathiya*, and other sweets are prepared.

Diwali and Bestu varsh- Diwali festival is celebrated for five days including *Dhanteras* (*Laxmi puja*), *Kali chaudas* (millet *vadas* and sesame and wheat flour sweets are made), Diwali (sweets such as *ghugra*, *gulab jamun* and *farsan* such as *bhakarwadi* and *padvali puri*, etc. are made and exchanged among family and friends).

The next day of Diwali is the Gujarati New Year or the *Bestu varsh* where *Rabdi* or *Basundi* sweets are served along with the *thali* and the fifth day is the *Bhaibeej* wherein *kheer* is made (festival to celebrate brother by sisters).

Winter special sweet such as *Adadiya Pak*, which is made from *urad dal* flour, ghee, condiments, spices, and edible gum, which keeps your body warm, is commonly prepared in all households.

VARIOUS TYPES OF OFFERING TO GOD (PRASAD) MADE BY DIFFERENT COMMUNITIES

Naivaid- *Naivaid* is the food offering to Goddess Mother before any celebration or festivals such as a wedding, *shimant*, engagements, *mundan*, *janeo*, *Navratri* etc. by elders of the household (women who are having her menstrual period are not allowed to be present on the occasion or at the place of cooking). *Naivadya* items include the *sweet rice*, *talvat*, *lapsi*, *khee*, *double pad wali Roti* (2 layer *Rotis*), *kuler*, *dhokla*, *kang*, etc.

Satyanarayan Katha- The special *Prasad* (*shiro*) is made as an offering to Lord Vishnu. *Shiro* is made from fine semolina, milk, ghee, sugar, cardamom, nutmeg powder, and dry fruits. *Panchmrit* (made with 5 items: milk, *khadisakar*, honey, curd, ghee) is also offered to Lord Satyanarayan. The participants of the *Puja* (worship) carry the fasting throughout the day and relieve their fast once the *puja* is concluded.

Randal Teda- It is the *Puja* offered to Goddess 'Randal Maa'. In which, the special *kheer* is cooked following the strict rules of female hygiene. *Prasad* is then served to the young girls who have not yet attained their menarche and served *kheer* and double-layered *Rotis* (*padwadi rotli*).

POPULAR SWEET DISHES SAURASHTRA

'*Mishtan*' (sweet-dish) is the most essential part of Saurashtrian *thali* as they are sweet lovers and their cuisine consists of '*Mishtan*' which means *Mithai* or Sweet. There are various traditional sweets which are specially made on occasions and on festivals.

Mohan Thal- This is a *besan barfi* served as an offering to the Lord and prepared during festive times. The followers of *Swaminarayan Sampraday* prepare this sweet daily for the *Prasad*. The sweet is made of gram flour, milk, ghee, sugar and nuts. This is a gluten-free dessert rich in protein and fat.

Shrikhand- This is a hung curd sweet with a rich, silky smooth, and creamy texture and can be flavored with cardamom or saffron. Fresh and dry fruits are also added to *Shrikhand*. This is a soothing sweet during the hot summer days. It is also known as *mattho*, and served in Gujarati weddings, and also offered as *prasad* in various temples and on festive occasions. This sweet is specially served with *Puris*

or *Rumali Rotis*. This milk-based sweet is soothing for the stomach in summers and is rich in calories, proteins, and calcium.

Golpapadi- ***Golpapdi* is the favorite sweet of Saurashtra; cut into bite-sized rectangles is commonly made by almost every housewife and made easily during all celebrations. Ingredients used for making *golpapdi* or *sukhadi* are wheat flour, ghee, and jaggery.**

This wheat and jaggery based sweet has a long shelf life and ideal for tiffin box, sports persons and usually carried while traveling.

POPULAR NAMKEENS

Some local snacks are:-

Fafada- *Fafada* is a very popular snack that is famous worldwide for its unique spicy and salty taste. Right from Saurashtra, it has crossed the boundaries and made a special place internationally. Made from Gram Flour, the spices added to the savory such as carom seeds, black pepper powder, and asafoetida are all-time favorite breakfast recipes. People relish the tasty *Fafada* with fried green chilies and sweet *Kadhi*. It is also served with *Jalebi* on special occasions such as Dusshera and Diwali.

Nutritional Benefits: As it is made up of *besan*, it is highly nutritious. But at the same time, this item is deep-fried so it is a calorie and fat dense. The majority of Gujarati is vegetarian so their daily protein requirement can be fulfilled by these snacks. This is gluten free snacks so it may be consumed by the gluten intolerant people.

Farsi Puri- Crispy *Puris* made from wheat flour or fine flour, cumin seeds, and pepper powder are the most matched snacks with tea. It has a crispy and flaky texture, yet melting in the mouth due to the addition of ghee into the recipe. The *Farsi puris* are specially made with adding ghee to the dough to make it crispy and soft is the most favorite item of school lunch for young children. It is enjoyed throughout the year but specially made during *Janmashtami*.

Dhokla- When we think of Saurashtra one cannot escape the thought of *Dhokla*. It is enjoyed across the country especially in Saurashtra. It can be made by fermenting gram flour or by soaking gram dal and rice and ferment it after making a blended mixture. Thus, it can be made variously. The tempering or seasoning makes it tastier. The soft, spongy, and bubbly texture of *Dhokla* tastes even better with Imli chutney or green Chutney. The dish is nutritious and tasty and is made by steaming.

Nutritional Benefits: It is made by fermentation so it is a probiotic food stuff that has many health benefits. The besan base used in *dhokla* is rich in protein. Since *Dhokla* is prepared by the fermentation process, it increases the bioavailability of nutrients such as Vitamin B and B complex, Vitamin K, and Vitamin H (Biotin).

Khandvi- This snack is a delicious treat to eat but can take a bit of practice to make. The rolled gram flour and yogurt batter is excellent, especially as the chilies provide that hint of spice. The combination of ingredients, as well as the rolled-up appearance, make it an appealing snack. It is commonly eaten as an appetizer and is available across India. Many people choose to buy it. From the shop rather than

making it at home because of the complications while cooking it make it more difficult for the learners. It is advisable to prepare this recipe with proper planning to avoid any disappointment and to ensure you create an authentic Gujarati snack to enjoy. Serving it with garlic chutney will enhance the flavor and taste of *Khandvi*.

Nutritional Benefits: *Besan* (gram) flour is protein-rich as it is prepared from chickpeas. *Khandvi* is gluten-free and rich in fiber which reduces or controls hunger pangs and maintains blood glucose levels. In tempering, mustard seeds and sesame seeds are used. Mustard seeds are loaded with iron, manganese, protein, and dietary fiber.

CURRIES AND VEGETABLES (*SHAAK*)

Saurashtrian Curries are fully loaded with spices like onion, garlic, ginger, and red chilies are all-time favorites of all age groups. They call it '*Shaak*'. The spices that are generally used in all types of curries are almost the same.

Curcumin is the pigment present in turmeric and is very well known for its anti-inflammatory properties. The various spices used in curries are rich in antioxidants that reduce the risks of high cholesterol and triglycerides. The combination of spices in different curry recipes is a great way to add flavor and health benefits. Capsaicin is the main plant compound found in red chilies and it is responsible for the taste and health benefits. The amount of capsaicin is proportionate to the fiery taste and nutritional benefits that it adds to the food. Coriander seeds are beneficial in reducing the blood sugar level. Coriander seeds are packed with antioxidants that help in preventing the cell damage caused by free radicals and also protect the skin from aging.

Coriander powder promotes digestive health. Coriander contains antioxidants that may protect your skin from aging and sun damage. It may also help treat mild skin rashes. It is crystal clear that vegetables are the hidden heroes of the food recipes. Vegetables are enriched with high calories, vitamins, minerals, and fiber. While, some vegetables rise out from the rest with added proven health benefits, such as the ability to fight inflammation, infections. Some of the vegetables are proven to reduce blood sugar, cholesterol, and triglycerides. In winters, the region has to encounter a severe dip in temperature and this spicy salver helps them keep up with hostile weather conditions.

Ringan Oro- A hot and spicy dish made with chargrilled aubergine is the most popular item of winter season consumed with Millet Bread called *Rotla* as dinner. Roasted or grilled brinjals are cooked by peeling the burnt skin of aubergine and seasoned with lots of spring onions, ginger, garlic, tomatoes, and red chili powder. Garnishing with fresh coriander leaves makes it tempter.

Lasaniya Bateta- The curry made of potatoes and garlic is called *Lasaniya Bateta*. The dish is spicy and hot with the extra use of garlic and ginger gives it a hot flavor. The curry is consumed in hotels, *dhabas*, and also at home with great zest.

Undhiyu- *Undhiyu* is the curry that is the most consumed during festivals like Diwali, *Uttarayan*, and *Dhuleti*. It is a curry made of mixed vegetable casserole cooked in a clay pot. The clay pot is filled with vegetables and spices and is buried underground in a large furnace covered by a pile of dried leaves and set alight to cook. Traditionally this dish is cooked upside down and the name comes from the

Gujarati term '*Undhu*' which means upside down. This is the traditional method but nowadays the curry is made formally in any utensil with a combination of different vegetables grown during the winter such as Brinjal, Cauliflower, Bottle Gourd, Broad Beans, Fresh Beans, *Tuver*, Yam, Potatoes, Plantain, and spices such as Red Chillies and *Undhiyu masala*.

Sev-Tameta- *Sev Tameta shaak* is the most famous and favorite curry of Gujaratis. It is made of Gram flour noodles and tomatoes.

BREADS OR CHAPATI (ROTLA/ ROTLI)

Bajri Rotla- The bread made from Millet Flour is a very famous and main cereal in Kathiyawad. Most of the labourers eat Millet Bread as their main staple food. It is economical and nutrient dense cereal which is widely consumed throughout the year, but more during winter.

Nutritional Benefits: Millet is a very rich source of protein. Protein is an essential nutrient to build muscle mass and nourish each cell. It is Gluten-free. Fiber is present in abundant quantities in Millet. Millet is rich in Magnesium which increases the insulin response by dropping insulin resistance which is good for diabetics and helps to maintain nerve function and normal heartbeat. The fiber in Millet helps to reduce low-density lipoproteins and increases the high-density lipoprotein and helps to prevent constipation.

Methi Thepla- Bread made with mixed flour like wheat, millet, and Bengal gram flour added with fresh fenugreek leaves, garlic, and ginger and shallow fried with oil. This is the most famous item consumed in all three meals of the day. Sometimes cumin seeds or sesame seeds can be added to enhance the flavor and nutritive value. The nutritional benefits vary depending upon the ingredients added.

Nutritional Benefits: Fenugreek leaves are a good source of calcium and magnesium of which the former nutrient helps in the development of bones and teeth and later has anti-aging properties. Wheat the main hero of the recipe is rich in B-complex vitamins and fiber.

KHICHDI – AN ESSENCE OF KATHIYAWADI FOOD

Khichdi is a combination of rice and lentils. It contains high-quality nutrients. It has always been this debated vegetarian dish – people either love it or hate it. The lovers love its simplicity. It brings a sense of warmth.

Plain Khichdi- It is the most basic form of *Khichdi* (*saadi khichadi*). This has no other seasonings except for Cumin seeds, turmeric, and salt. Sometimes we replace *dal* with our own choices such as *Tur Dal*, Green gram, or Chana Dal.

Nutritional Benefits: Since *Khichdi* is made from the perfect combination of rice, lentils, and ghee, it provides carbohydrates, proteins, fiber, and minerals like calcium, magnesium, phosphorus, potassium, and vitamin C. To increase the nutritional value of the *Khichdi* different vegetables can also be added. *Khichdi* is the perfect meal for people who are sick, elderly, and babies as it is highly nutritious and at the same time the consistency of the *Khichdi* is also soft. Rice doesn't contain gluten it is a choice for gluten intolerant patients.

Vaghareli Khichdi- The added combination of vegetables along with the seasonings in plain *Khichdi* makes it more delicious and healthy. By adding vegetables the health benefits of *Khichdi* are doubled. *Khichdi* aids in easy digestion and helps ease digestion and absorption and is hence advised by physicians during sickness for a speedy recovery. *Khichdi* is also the initial soft food that children are introduced to in India.

Along with meals or after having meals people tend to have the classic combination of jaggery and ghee called '*gol ghee*'. This is the healthiest and traditional way of adding iron to their diet. Both jaggery and ghee help to boost immunity and regulate hormonal balance. Jaggery and ghee combination is best in flushing out toxins from the body and reducing the complications associated with acidity.

Another essential classic item is the *sambharo* (seasoned and slightly roasted vegetables). Buttermilk, curd, *papad*, fried chilies, onion, and pickle are other essentials of the Saurashtrian cuisine.

Khichdi diet or a regular diet of Saurashtra is accompanied by buttermilk *Chhaas*. It is considered to be one of the soothing drinks during the hot summers of Saurashtra. A glass of buttermilk topped with roasted cumin seed powder, coriander powder, mint, and a pinch of salt. This drink is useful in maintaining water balance and prevents dehydration in our body and also aids digestion and metabolism. Buttermilk is rich in calcium and helps to prevent degenerative diseases like osteoporosis. A glass of buttermilk can help in instantly easing gastric acidity caused by oily and spicy foods. The lactic acid in buttermilk regulates the acidity in the stomach and gives a relaxing effect.

Table 1: Foods which can be promoted for the eat right movement

Food item	Health benefits
Winter foods	
Green chickpeas	Green Chickpeas are quite a healthy grain to add to the winter diet. Chickpeas are rich in protein which is important in muscle growth. Green Chickpeas are rich in antioxidant properties. Vitamin A and C are present abundantly in Chickpeas. Green chickpeas are rich in vitamin B9 or Folic acid, which is known to fight against depressive symptoms.
Peanuts (Ground Nut)	"Almonds of the poorer". Peanuts have a rich content of unsaturated fats. The nutritional value of groundnuts is similar to walnuts and almonds. It is loaded with essential nutrients. Groundnuts are an exceptionally great source of vegetable protein. Groundnuts are a rich source of Niacin, Folate,

	<p>Phosphorus, Magnesium and Vitamin E and H and B1. A high level of Anti-oxidants is present in Groundnuts which helps to combat free radicals and thus helping against degenerative diseases. Groundnuts are helpful in healthy lipid profile as it is rich in HDL and lowers the LDL level. The anti-oxidants namely Genistein and Biochanin-A play a major role in nullifying the damages caused by free radicals in the skin resulting in having nourishing and beautiful skin. Groundnuts helps in the regeneration of cells by enhancing collagen. Peanuts are also known to help with cell regeneration by boosting collagen production.</p> <p>The tryptophan present in groundnuts helps to increase the serotonin level and thus helps to fight against depression. Niacin in Groundnuts help to reduce memory-related disorders like Alzheimer's Disease.</p> <p>Groundnuts are beneficial for Obese, Skin problems, Neurogenerative disorders, Gluten Disorders, Psoriasis, and Eczema</p>
Amla (Indian Gooseberry)	<p>Amla is Preloaded with Vitamin C, which helps to build strong immunity and metabolism. It has anti-biotic properties which are known to fight against both bacterial and viral infections. It is an excellent source of Fibre that helps to cure digestive problems and constipation. Amla possesses anti-inflammatory properties it helps to relieve pain caused by Arthritis, joint aches, ulcers. Amla acts as a detoxifying agent. Amla regulates blood sugar level as it is rich in chromium, and so Amla is excellent for diabetics. Amla is considered as a superfood, as it is loaded with several vital vitamins, minerals, amino acids which help in maintaining the health of the scalp, strengthen the hair follicles.</p> <p>It can be eaten in raw form, or Amla murabba, Amla pickles, and Amla Juice.</p>
Cactus Fruit(Cactus Fig)	<p>This wild fruit has an ample amount of Iron which helps to treat the severely anemic patient. Fruit of cactus contains a wide variety of phytochemicals such as Betalains, minerals, and polyphenols. The prickly pear fruit is rich in iron, riboflavin, magnesium, and vitamin B6 and C. The juice of the fruit</p>

	constitutes anti-inflammatory properties that help to control blood glucose, heart diseases, and some cancers.
Custard-apple	This is super sweet fruit eaten mainly in winter. It is rich in antioxidants and minerals.
Bor (local berries)	This is also the local fruit which is eaten widely for the taste and health benefits.
Guvava	Guava is also known as 'Jamfal' is rich in Vitamin C and its seeds are also full of fiber which is water-insoluble which aids gut health.
Summer foods	
Mango	It has a very high content of Carotene and anti-oxidants properties. Gir Mangoes have a unique fragrance and taste. It is one of the world-famous mango type called "Kesar keri "
Papaya	Papayas are rich in Carotene which is the precursor of Vitamin A. Full of dietary fiber helps to cure diabetes and other heart disease and obesity.
Water-melon	The more than 70% content is water in all types of melons make the melon family fruits favorite for summer to keep hydrated and balanced electrolytes.
Musk-melon	It has almost similar health benefits to watermelon. Only the size and appearance make it unique from watermelon.
Mattho (Shrikhand)	It improves the microflora of the intestines.
Aam Ras(Mango pulp)	This is the pulp made from ripen mango. This is a very famous fast food as well as consumed on routine hot sunny days.

Monsoon Foods	
Pear	Pear is rich in Vitamin C and water-soluble fiber pectin’.
Jamun	Jamuns are low calories nutrient-dense fruit. Which are helpful to control blood sugar and cholesterol level.
Pomogranate	The purple-colored fruits are called to be superfoods for their unique properties of anti-oxidants, anti-cancer, and anti-inflammatory.
Gunda	<p>The sticky juice of the fruit is useful in removing excess phlegm from the lungs and treat cough, asthma.</p> <p>Gunda can be eaten fresh, dry, and pickled. Gunda displays significant anti-ulcer and protects the cells and tissues from damage due to freezing. The medicinal property of Gunda helps to bring the mucus and other material from the lungs, bronchi, and trachea.</p> <p>Gunda helps in relieving inflammation and irritation. All these above-said benefits of Gunda help treat chronic bronchitis, influenza, and burning micturition.</p> <p>It can be used as laxatives (facilitate the evacuation of bowel.</p>
Garmar –dara	Grammar dara are the roots having medicinal properties such as a diuretic, anti-diabetic and anti-cancer. The herbs are used as a pickle adding only salt and turmeric powder.
Kerda.	It helps in relieving flatulence and other stomach problems, stimulates the blood flow in the pelvic area and uterus, stimulates menstruation. This beery is useful in boosting libido, acts as an appetizer, good for lumbago, cough, and asthma, and possess anti-diabetic and hypo-cholesterolemic, and diuretic properties.
Carrots	The sundried items are taste enhancer or Appetisers. They do not have much health benefits but it has the tempting tastes. Can be
Bhindi(Ladies finger)	consumed by dry roasting or deep frying.

Guvar(Cluster beans)	
Kothimda	
Mango kernel	The seed of mango has plenty of health benefits. The anti-Carcinogenic and anti-inflammatory seed is rich in Vitamin B ₁₂ and Vitamin C. The seed is roasted with ghee and used as a mouth freshener (Mukhwas). It helps aid digestion.
Paan no Mukhwas (betel leaves)	Pan Mukhwas is appetizing, lip-smacking, and energizing. Those who feel heavy post-meal used to have betel pan. Betel pan is loaded with riboflavin, calcium, Vitamin C, and carotene. The ingredients added to betel leaves (paan) include gulkhand (rose petals dipped in sugar syrup), cloves, coconut powder, cardamom, betel nuts, coconut powder, etc are independently nutritionally beneficial. Betel leaves are loaded with riboflavin, calcium, Vitamin C and carotene, and Vitamin B ₁₂ . It helps in digestion, by chewing betel leaves the secretion of saliva juice is enhanced which in turn essential for digestion. Betel leaves contain anti-bacterial properties that can assist to counter bad oral hygiene. As it increases the metabolic rate, betel leaves are proven well for obese or those who want to reduce body fat. Betel leaves are extensively used in curing ulcers and sores. Betel leaves help in treating the wart without leaving any scars. The analgesic properties of Betel Leaves aid in help in bring down headaches and impart relief in cough. That is why it is eaten after having heavy meals. The characteristics of betel leaves enhance the release of gastric juice which aids the digestion system.
Indian Mackerel	It is one of the most famous staple fish of the Gujarat coastal area. Mackerel has a very low content of Mercury. It is also very rich in selenium and omega -3 fatty acids. It enhances the eyesight.

Tuna	This is high in mercury so it is recommended to eat six servings in a month. Though it is very rich in omega 3 fatty acid and potassium which in combination gives the best protection to the heart. It is also rich in Vitamin B complex which helps to strengthen the bones.
Silver Pomfret	Pomfret supplies a good deal of protein and omega 3. However, the fish is among the costliest fishes in India owing to its novelty. The white meat and rich flavor fetch a great price for this fish.
Squid	This type of fish is low in Mercury. It is also a rich source of protein as well as omega-3 fatty acids.

CONCLUSION

The Saurashtra and Kathiawar regions are famous for their ultimate taste of food and festivals. Both vegetarian and non-vegetarian items especially fish are consumed here. Many food items in their cuisine are healthy and mentioned in the chapter and should be promoted in the Eat Right Movement.

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ANTHROPOLOGY OF FOOD and DIETARY CULTURE OF BANASKANTHA IN NORTH GUJARAT

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ABSTRACT

Banaskantha district is the third-largest district of Gujarat and is located in the North-Eastern part of Gujarat State. The total area of the district is 10,743 sq.km and geographically lies between 23.49 to 24.42 Northern latitudes and 71.03 to 73.02 Eastern longitudes. There are 12 Talukas in the district. The majority of the population in the district belongs to the Hindu religion followed by the Muslim, Jain, Christian, Sikh, Buddhist, and other religious communities. The major agricultural produces of the district are namely *Bajra*, *Jowar*, Maize, and *Moong*. This district also possesses Asia's largest milk procuring organization namely Banas dairy which greatly contributes to the livelihood of the people. The day to day diet main staples consumed here is majorly Wheat, *Bajra*, *Jowar*, and Maize. Some of the common ingredients are milk, buttermilk, sesame seeds, jaggery, and ghee. Some of the main traditional varieties widely consumed in the rural area of the district are *Rotla* (*Bajra*, Maize and *Jowar*), *Ghesh* (*Bajra* and *Banti*), *Raab* (*Bajra*), *Kuler* (*Bajra*), *Matar* or *Sukhadi* (Wheat), *Haldi ki sabji* and *Karengada* (*Kalingan*) *ki Sabji*.

INTRODUCTION

The name of the district is presumably kept on the name of its river 'Banas'. Banaskantha district is the third-largest district of Gujarat and is located in the North-Eastern part of Gujarat State. The total area of the district is 10,743 sq. kms and geographically lies between 23.49 to 24.42 Northern latitudes and 71.03 to 73.02 Eastern longitudes. Palanpur city is the District Head Quarter for the State Government Administration. There is 12 *taluka* in Banaskantha district namely Vav, Tharad, Dhanera, Dantiwada,

Amirgadh, Danta, Vadgam, Palanpur, Deesa, Deodar, Bhabhar and Kankrej. There are a total of 12 *taluka* having 12 towns and 1233 villages in the district. The rank of the district is 4th in the area of the State. In the north, it is bounded by Marwar and Sirohi area of the Rajasthan State, in the south by Patan and Mehsana districts, in the east by a part of Sirohi and Sabarkantha district and in the west by the Desert of Kutch which forms the frontier with Pakistan reported by Government of India, 2016.

Though the population of Banaskantha speaks the Gujarati language, however, their dialects vary from *Mehsani* to *Marwadi*. The economy of the district is mainly based on Agro and Food Processing, Textiles, Ceramics, and Tourism. It ranks 1st in the production of vegetables by contributing approximately 17.67 of the total vegetable production in the State. It is the 3rd largest district in producing oilseeds in the State.

Table- 1 Population statistics of Banaskantha District

Description		No.
Population	Total	31,20,506 Person
	Male	16,10,379 Person
	Female	15,10,127 Person
Population Density		290 Persons per sq. km
Village Population		27,05,591 Person
Urbanised Population		4,14,915 Person
Population increase rate (Decadal)		26.61 %
Male- Female ratio		1000:938
Scheduled Caste Population		3,27,460 Person
Scheduled Tribe Population		2,87,937 Person
Labour Force Population		12,48,600 Population

Source: Census 2011, Banaskantha District Census Handbook.

As per official census 2011 and population data 2020 of Banaskantha district, Hindus are the majority in Banaskantha state (Table 2). The total population of Banaskantha district is 3,120,506 as per census 2011. Hinduism constitutes 92.62% of the Banaskantha population. As the table shows, almost all the different religious people are living in the district. The majority of the population in the district belongs to the Hindu religion followed by the Muslim, Jain, Christian, Sikh, Buddhist, and other religious community as well reported in Pearl Millet Project Gujarat, 2012.

Table- 2 Religion wise population statistics of Banaskantha District

Population	3,120,506
Hindu	92.62 %
Muslim	6.84 %
Christian	0.05 %
Sikh	0.02 %
Buddhist	0.01 %
Jain	0.41 %
Others	0.05 %

Source: Census 2011, Banaskantha District Census Handbook.

PERCEPTIONS ON PRODUCTION, CONSUMPTION, AND STORAGE OF VARIOUS CROPS IN BANASKANTHA

Though the shift in the land use of the agriculture sector to the non-agriculture sector has been increased in Banaskantha, yet agriculture is still the main occupation of large numbers of farmers in the district. The district is subdivided into six sub-micro-regions based on physiography, climate, geology, soils, and natural vegetation namely (1) Vav Sandy Plain (2) Sandy Plain (3) Banas Valley (4) Banas Aravalli Range (5) Jasore Hills, and (6) Umardasi and Saraswati Plain. The district has nearly 52% of the area under irrigation but some talukas have soil salinity and sodicity problems.

The main thrust of the district is to increase the profitability of the farmers by way of sustainable agriculture and judicious use of natural resources like water. The district has a wide range of cropping systems like groundnut-Potato-*Bajra*, *Bajra*-Mustard- *Bajra*, *Bajra*-Castor, Potato-*Bazar*, Pulses-Mustard, Pulses-Cumin, and Cotton-Wheat. The major agricultural products namely *Bajra*, *Jowar*, Maize, *Moong* of the district are shown in table-3. Also, the varieties of fruits and vegetables are cultivated seasonally in the district namely Pomegranate, *Amla*, Custard apple, and Muskmelon.

Table-3 Statistics of main agriculture produced in Banaskantha

Year	Bajra	Juwar	Maize	Mung	Potato	Pomegranate
	00 MT	00 MT	00 MT	00 MT	00 MT	00 MT
2008-09	2056	90	189	88	7840	35.04
2009-10	1688	62	149	32	8265	40.00
2010-11	4883	57	225	173	9238	73.00
2011-12	4908	36	252	203	12606	100.35
2012-13	4289	83	138	100	13813	129.20
2013-14	5255	41.05	163.74	139.34	10720	169.52
2014-15	4283.84	63.51	146.57	64.71	17107	536.80
2015-16	3730.72	86	93.19	20.61	18046	1016.01
2016-17	4197.1	86.84	89.81	68.23	20843	1088.19

Source: Director of Horticulture. Gandhinagar, Gujarat (2008-17)

Milk Production

Dairy is an essential component of rural areas of the Banaskantha District. The cows and buffalos population are instrumental in the collection of the highest milk in district co-operative in Asia. There is a long tradition of rearing dairy animals by the farmers in the district. Large numbers of landless families are also engaged in dairy rearing. There are 660073 numbers of cattle and 955034 numbers of buffalos in the district as per the report of State Agriculture Plan and State Infrastructure Development Plan, 2017-18. The numbers of crossbreed cows are 131022, which is almost half of indigenous cows. However, the choice of the farmer is reported in the Comprehensive District Agriculture Plan (C-DAP) Banaskantha Report, (2013).

Very often all the farmers in pursuit of supplementing their needs of food, the majority of them are revolving around the crops and livestock component. In 2009, Alam and co-workers reported that the integrated farming system approach is considered to be the most powerful tool for enhancing the profitability of farming systems, especially for small and marginal farm holders to make them generous. The district possesses Asia's largest milk procuring co-operative union called Banas Dairy. It has 0.18 million shareholders, which are spread across 1,450 cooperative societies. The livestock and dairying business are the main contributors to flourishing the rural economy of the district.

Table-4 Statistics of milk production in Banaskantha

Year	Average Milk Production
	LLPD (Lac liters per day)
2012-13	27.36
2013-14	28.65
2014-15	32.44
2015-16	37.22
2016-17	40.33
2017-18	45.49
2018-19	54.48
2019-20	55.59

TRADITIONAL FOOD CUISINES, RECIPES AND PREPARATION METHODS

Banaskantha district is considered as the core for varieties of traditional dishes. The day to day diet main staples consumed here is majorly Wheat, *Bajra*, *Jowar*, and Maize. Some of the common ingredients are milk, buttermilk, sesame seeds, jaggery and ghee. There are slight variations in consumption habits and menu items and their preparation, because of the climatic and cultural vitality. Some of the orthodox food recipes are going to be obsolete since the increase in district urbanization. Few recipes are collated as under:

1. Rotla

Bajra, Maize or *Jowar* is a very healthy grain to eat. Generally in Banaskantha, the rural population consumes *Bajra Rotla*. However, a tribal area of Banaskantha consumes *Rotla* made with Maize flour. *Rotla* made with *Bajra* flour has its own sweet taste and flavour which makes it absolutely delicious. The colour of *Rotla* made with *Bajra* flour is slightly greenish while *Rotla* made from Maize flour and *Jowar* flour is whitish and slightly reddish in colour, respectively. *Rotla* is best served with *baingan ka bharta*, but it can be dished up with any kind of vegetables. It tastes delicious with homemade butter and pickles too.

2. Raab

Raab is a semisolid health beneficial food often prepared and consumed to strengthen the immune

system and keeps you energized throughout a today. It is used as a complementary food as well as food during convalescence. Traditionally, Raab is prepared from Bajra flour.

3. Ghes

Ghes is a semisolid health beneficial food often prepared from *Bajra* or *Bantiya*. The *Ghes* is prepared and consumed mostly in the eastern part of Banaskantha. This particular cuisine has peculiarity due to the typical soured taste and consistency like *Khichdi* made from rice and can be promoted for the populations or hospital patients who need a light diet.

4. Kuler

Kuler is a traditional sweet product made on the occasion of *Nagpanchami* in Banaskantha. It has been observed that *Kuler* is served as a *Prasad*. *Kuler* is also made and eaten during the winter season as it is richer in ghee and jaggery. This is a low-cost energy bar for the locals.

5. Matar (Sukhadi)

Matar is a popular homemade sweet dish prepared from whole wheat flour and jaggery. It is the easiest and quickest sweet to prepare and consumed in the Banaskantha.

6. Haldi ki Sabji

A specialty winter dish from the northern part of Gujarat especially Banaskantha, it is prepared with *Kachhi Haldi* (Raw turmeric) and Curd which is mildly flavored with a variety of spices. *Haldi* has its healing properties and since *Haldi* is dry and increases heat, the addition of Curd helps balance it. This dish is often made for festive occasions and marriages particularly in the winter season.

7. Karengada ki Sabji

Karengada is a particular vegetable grown in the north region of the Gujarat state especially in Banaskantha. The *sabji* made from the *Karengada* is having a peculiar and mouth watering taste relished in the summer season. The nature of the soil (Sandy) of this distinct highly favors the cultivation of *Karengada*.

CONCLUSION

The diet of Banaskantha revolves around the pearl millet, local greens and milk and milk products. It is a very rustic, less spiced, low inflammatory diet. Recipes such as *bajra rotla*, *ghes*, *matar*, along with local seasonal vegetables such as green turmeric and *karengada*, which are full of antioxidants, should be promoted for the Eat Right Movement.

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AN INSIGHT INTO TRADITIONAL GUJARATI CUISINE AND THE EAT RIGHT MOVEMENT

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ABSTRACT

Being such a huge and diverse country, India is bound to have a plethora of recipes, owing to the climate, production, and availability they were developed in. Indian cuisine has had a special emphasis on local, seasonal, and traditional foods. This chapter presents some of the traditional recipes of Gujarat which needs to be promoted in the Eat Right Movement. Many of these are seasonal and associated with good health and recommended for centuries by the elders of the households.

INTRODUCTION

India is a melting pot of a variety of cultures. It has diverse soils, climatic conditions, and traditions. Being a huge country, the lifestyles of people change significantly as one moves from one part to another. The style of cooking is unique in every part too. Indian cooking is known for its generous usage of spices. Various civilizations that inhabited the country at some point have shaped the food culture as we know it today. Tea, for instance, is said to have made its way into Indian food in the middle ages, about when the Gupta dynasty was thriving. *Samosa* is said to be another *Mughlai* influence on the food culture. The Western Indian state of Gujarat has several traditional recipes that need to be promoted in the Eat Right movement.

Listed below are some of the traditional healthy recipes from the land of Gujarat, known for its variety of snacks.

Damni Dhokla- Many of the old recipes tend to go into oblivion because either they are time-consuming or they need ingredients that are inconvenient to procure. In the case of *Damni Dhokla*, the reason is the latter. A combination of rice, pulses, millets, and spices, this batter is fermented for about eight hours. What's special about this? It is the method of cooking. Banyan leaves are washed and shaped into cones. The *dhokla* batter is poured into them and steamed. Leaves are a rich source of

polyphenols, also known as the antioxidants found in plants. They are said to be absorbed in the food when it is cooked with the leaves. The juice from the leaves makes the food more flavourful. It is a complete meal and can be consumed for snacks or dinner.

Kang (foxtail millet) Sukhdi- This is a classic example of a recipe gone into oblivion, as many people do not have an idea about this millet today. *Kang*, or foxtail millet is a good source of soluble fiber, which is very good for the gut. It is also a good source of carbohydrates and protein. In recipes that do not require the elasticity of gluten, *Kang* makes a very good replacement in terms of both nutrition and diversity.

Daabda- Typically made with slices of roots and tubers, this is a delicious side dish that is slowly losing to obscurity. A dry stuffing is made to be fit into slices of these roots and tubers such as potatoes, sweet potatoes, and yam. This dish is a great source of energy along with micronutrients. The roots and tubers are great food for the gut bacteria. The bacteria feed on these and produce short-chain fatty acids, which boost our health in countless ways. This is a hassle-free dish and tastes equally great. With an intelligent combination of spices in the stuffing, one can bring out the authentic flavor. The ingredients in the stuffing change according to availability. Fresh coconut, coriander, tender pigeon peas, and chickpea flour are some of the options for the stuffing, along with asafoetida, ginger, chili, turmeric, carom seeds, sesame, lemon, sugar, and salt is the constant.

Baafnu- While we are on the subject of roots and tubers, it is interesting to note that people of the bygone era have come up with very innovative ways to include those in our diets. Pickling them for a short period is one such way.

Just a spoonful of pickle on the side cheers up a meal like nothing else. It is not only good for us but also good for our gut bacteria. It is so potent in terms of both taste and health that it has been passed down to generations effortlessly. It is made in a lot of oil if it is meant to store annually, while some pickles made in winter contain only a bit of oil as they are meant for ready consumption, within a fortnight. Many times, pickles made for winter are also made in mustard oil to keep the body warm, while the pickles meant for annual consumption are made typically in peanut oil. This pickle is made according to the availability of the ingredients, but it is more common in winters. It works as a nice accompaniment with *dhokla*, *Khichdi*, or *handvo*.

Kuler- This is a sweet dish made from pearl millet flour. Millets are easy to cultivate and they grow well even in extreme conditions. Because their cultivation is easier, it is being explored as a future option owing to the erratic and drastic climatic changes. Gujarat is one of the main cultivators of *bajra* in India. The uses of this millet in Gujarati cuisine are wide. It is made as an offering to *Naag* on *Nagpanchami*. Snakes are worshipped on this day. They are fed milk and *Kuler* as a token of gratitude for protecting people's farms from pests.

Bhaidku- This is a wholesome meal that gets cooked quickly. A combination of millet and legumes, it is a filling meal that keeps one full for a long time. It is consumed as a breakfast porridge with buttermilk or accompanied with a millet flatbread. It is a perfect meal for children and the elderly alike since it is easy to chew and digest. All households have their customized *Bhaidku* mix, but generally, it is a combination of seven grains, which is known as '*Saat Dhaan*' locally.

Gorasamli (Manila tamarind) curry- *Gorasamli* can be classified as a hyperlocal food available for only a short time. Known as manila tamarind, it is astringent in taste. It has a good amount of vitamin C. It helps in proper digestion and lowers inflammation. Local lore has it that it cools down the body heat; hence it is available abundantly through summers till the advent of monsoon. Today, *gorasamli* is consumed raw as snacks. But earlier, people also used to stuff it with dry *masala* and put it into a curry. It is a good use of the tamarind which is not available for a long time. Also because of its astringency, it is not preferred raw by many. In that case, a curry proves to be a great option.

Kodri Handvo- *Kodri* or *Kodo* millet as it is called is making a comeback again. After being in oblivion for long, it is now being demanded again, this time all over the world. *Kodri* is packed with nutrients. It is diabetes-friendly, prevents constipation, and helps in weight management. It is good for women facing post-menopausal problems. It was a staple diet before the Green Revolution. It was eaten with *dal*, made into *Khichdi* or *Upma*. In this recipe, rice is substituted with *Kodri*, with the rest of the ingredients being the same as that of the *Handvo* that is consumed today. It is eaten with pickle, curd, or even vegetable soup. It is a wholesome meal consumed mostly for breakfast and dinner. Because *Handvo* is a fermented product, very good food for boosting gut health. Vegetables are added according to availability and preference. The addition of a grated bottle gourd gives *handvo* a good texture.

Panki- Cooking meals in leaves of various trees is a very welcoming idea when one wants flavourful food along with nutrition. Polyphenols from the leaves go into the food and add the typical aroma to it. South Indian cuisine is known for its extensive usage of banana leaves in cooking. *Panki* is a Gujarati way of including leaves in steaming. Made with rice flour typically, it has many variants. It can use different flours and different types of leaves as well. Banyan, *Khakhra*, and banana are some of the popular ones as they are available easily. This recipe is popular in the greener regions of Gujarat. It is the go-to meal for convalescents as it is easy to digest, and helps repopulate the good gut bacteria.

Rice flour is fermented with yogurt for around six hours. Then a little amount of spices is added to the ferment and steamed on banana leaves. *Panki* tastes best when consumed fresh and hot. It is served along with the leaves. It can be accompanied by chutney or buttermilk.

Dapka Kadhi- *Dapka Kadhi* is made from buttermilk which is a by-product of *makkhan*. Buttermilk has around 1% fat and is a rich source of phospholipids. It helps to increase one's appetite. As it has a protein content lower than that of milk, it is easy to digest. In Northern Gujarat, buttermilk is consumed widely. Dumplings made from *dal* are added to the *Kadhi*. They get cooked in the boiling *Kadhi* itself. The dumplings make up for the protein that is lesser in *Kadhi*. It is consumed with *bajra Roti*, *Khichdi*, or steamed rice.

Ghasiyo- *Ghasiyo* is a basic mix of roasted flour, ghee, and a bit of milk. Because *bajra* is abundant in Gujarat, *ghasiyo* is made out of *bajra* flour, but it can be made with any other flour. It is made in a way that increases its shelf life. It used to be carried by travelers for consumption. It just needs to be mixed with milk or curd before consuming. It can also be mixed with ghee and melted jaggery to give a *sukhdi-like* texture and taste. On room temperature, it stays good for fifteen days. It is specially made during *Navratri* as an offering to Maa Durga, a goddess that is said to visit the homes in those nine days. Thus, this recipe holds a culturally important place in Gujarati cuisine.

Adadiya Pak – Black gram flour fudge-In Gujarat, winter is a season of abundance. Vegetables are plenty, fresh jowar harvest is in season, and appetite is massive. Winter is also believed to be an important time for building health. And when it comes to building health; ghee, nuts, seeds, dates are some of the many foods that hold importance in traditional cuisine.

Adadiya Pak is made using *urad dal* flour. The flour is said to be difficult to digest, but because our metabolism is geared up in winters, it does not pose a problem. Add to it the goodness of ghee and nuts, and it serves as a nutritious, wholesome snack that also helps to keep one full for long.

Aatho – supplemental feed for lactating mothers

This recipe, unclear as to why it's called *Aatho*, is an intelligently designed food specifically for lactating mothers. It is extremely rich in good fats, thus providing the much-needed energy for the mothers. The growth of the baby, after all, depends on the quality of the breast milk, which in turn is decided by the food that the mother eats. *Aatho* also helps to replenish the nutrient stores depleted during pregnancy.

Kachariyu- Sesame oil, as the tradition says, provides heat to the body. *Kachariyu* employs sesame seeds as one of its major ingredients and is consumed in winters due to the same reason. Here, sesame seeds are used raw, that is, even without roasting. There are variations as to the amount, proportion, and variety of nuts and seeds added to the *Kachariyu*, but the principle ingredient remains the same. *Kachariyu* and *Adadiya Pak* are some of the extremely popular sweets in Gujarat during winters, and for all the right reasons.

Lili haldar nu shaak - Turmeric root curry- Fresh turmeric roots are available only in the few months of winter. They are turned into pickles, or eaten raw with a dash of lemon juice and salt. They are also sun-dried in some households to make turmeric powder. But another way of incorporating fresh turmeric into a diet is by using it in curry. Along with ghee, curd, onion, and tomato to make a curry, it is not hard to guess that this recipe belongs to North Gujarat.

As is evident from these recipes, the traditional cuisine has significantly more variety than what we are accustomed to eating today. Maybe the success of the people in preserving and transferring a healthy and vibrant human genome is not very difficult after all. Good nutrition through such local, seasonal and traditional recipes seems to be the well-preserved secret to leading a life that brims with health and joy. Incorporating these recipes back in our eating patterns can do to our health what no pill in the market can.

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NEW TRENDS IN WILD FOOD AND FLAVOURS OF DANGS- GUJARAT

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ABSTRACT

It is said, “A handful of grains are enough to feed a person” but in today’s foodie world; where we consume processed and refined food, a handful of grains are not enough. The literal meaning of having a handful of grains is to consume it without refining and processing; then only it will be a wholesome source of nutrition with natural flavour. Botany Fest, a plant-centric festival, brought this thought into living in 2018 when students were asked to make their food recipe from locally known wild food. The Dangs, a district in South Gujarat is known for its diverse vegetation and ethnobotanical herbs and food. Every year, since 2018, students are motivated to innovate highly nutritious new food recipes with indigenous wild plants of Dang. Mushroom Lollipop served with *Changeri Chutney*, Shimado (*Bombax ceiba*) flower Soup, and balls; Dangi Manchurian with *Chutney* are some of the delicious recipes developed by students since its inception giving new insight into forgotten food with new flavour and fragrance.

INTRODUCTION

Dang, a district in South Gujarat is known for its diverse vegetation and ethnobotanical herbs and

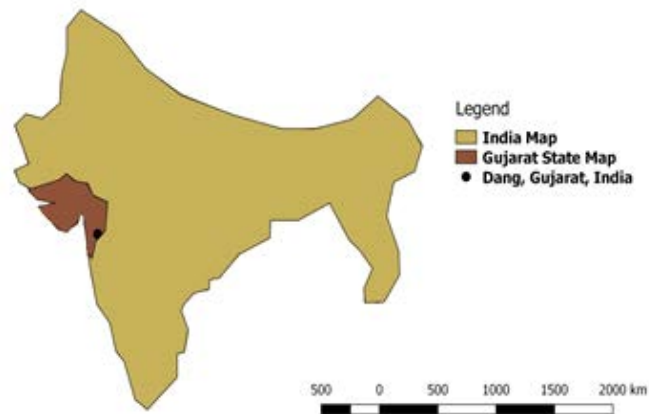
food. It was historically known as 'Dandakaranya or Dandak Van' during the period of Ramayana. It is comprising mostly hilly tract covered with dense forest, It is surrounded by Surat (Gujarat) at North, Dhule (Maharashtra) at North East, East by Nashik (Maharashtra), West by Valsad (Gujarat) Districts. The elevation of the district ranges from 675 to 1290 meters above MSL. The main rivers of Districts are Gira, Purna, Khapri, and Ambika. The Dang experience a heavy rainfall of 1390-1900 mm every year. Dang covered by Deccan Lava flows as horizontally bedded shits. Hence, flat-topped hills are common. The soil in the valleys is mostly black cotton soils composed mainly of clay minerals while red soil is present at the slopes of the hill. The agricultural soil in Dang is mainly acidic to neutral with pH values ranging from 6.7 to 7.

The local dialects are Dangi or Konkani. The five Royal Bhil kingdoms of Dangs are Daher-Amla, Linga, Gadhvi, Vasurna, and Pimpri. Currently, they are only hereditary rulers in India and receive a monthly political pension by the Government of India through all privy purses for the princely states of India stopped in 1970. As per the treaty signed in 1842 between British rule and Kings of Dang, the British allowed using the forest and its products against 3000 silver coins.

Dang is home to Nagli based cuisine. Nagli strengthens bones and body muscles as it has the highest amount of Calcium and Potassium among all grains and millets. It is also rich in protein and dietary fibers. In Dang, Nagali is served in various preparations like Chapati, Biscuits, Fries, Papad, Nankhatai and other Sweets, etc. Our elders said, "A handful of grains are enough to feed a person" but in today's foodie world where we consume processed and refined food, a handful of grains are not enough and it will not. The literal meaning of having a handful of grains is to consume it without refining and processing; then only it will be a wholesome source of nutrition. Botany Fest, a plant-centric festival, brought this thought into living in 2018 when students asked to make their food recipe from locally known wild food.

The preparations we consume in the modern world has different taste due to the different combination of spices. In modern food recipes, the taste of spices is dominated by the taste of vegetables. To have a real taste of vegetables one must have to eat it raw and if needed, some amount of spices can be added to enhance the taste but not to change it. To make participants aware of the true taste of nature, with the same idea, Botany Fest has designed the game called 'Chef of Jungle'. Every year, since 2018, students are motivated to innovate highly nutritious new food recipes with indigenous wild plants of Dang.

Chef of Jungle, aka Chef of Dang, is an event where the experts identify a jungle having a wide range of diversity. Participants were asked to roam in the jungle and to collect the live material of their known or unknown plant and bring it for validation of their edibility to the experts. Once the material gets validated, a new recipe gets ready to invent. Participants use their basic as well as advanced cooking skills for invention. Most of the collected material is untasted before. For an award-winning recipe, one has to understand the basic taste of the material and the probable taste after adding spices and cooking.



Some plants lose taste in frying and some release aroma and give texture to food. To maintain the basic taste, one has to choose the necessary method of preparation.



Map 1- Area of Study, Waghai, Dangs

NEW FOOD AND FLAVOURS OF DANGS

1. Mushroom Lollipop with Changeri Chutney and *Bombax ceiba* Soup

Ingredients

- i. Changeri Leaves (*Oxalis corniculata*)
- ii. Karmada Flower (*Carrisa congesta*)

- iii. Shimlo petals (*Bombax ceiba*)
- iv. Sweet Potato (*Ipomea hypogea*)
- v. Groundnut (*Archis hypogea*)
- vi. Chilly (*Capsicum annum*)
- vii. Turmeric Powder (*Curcuma longa*)
- viii. Ginger (*Zingiber officinalis*)
- ix. Garlic (*Allium sativum*)
- x. Oyster Mushroom (*Pleurotus ostreatus*)
- xi. Oil
- xii. Salt



Recipe

Changeri Chutney: To make chutney Oxalis leaves, chilly & groundnut with a pinch of salt.

Mushroom Lollipop: Boil mushroom Oyster & Sweet potato; mash it well, add salt, turmeric powder, some chili powder then mix it well & roll it in round shape, then shallow fry it in hot oil, fry it till crispy layer is obtained, use a minimum amount of oil.

Soup: Boil Petals of Shimlo then drain its water after that pest of chilly, ginger and garlic add it in soup & mix it well.

2. Dangi Manchurian with Chutney

Ingredients

- i. Marsilea crenata leaves (20 gm),
- ii. Curry leaf 20 gm,
- iii. *Carissa congesta* flower (karmda 40 gm),
- iv. Karmada Leaf 100 gm,
- v. Brahmi Brahmi 20gm,
- vi. Turmeric powder,
- vii. Sesame seed,
- viii. Cumin (2 teaspone),
- ix. Salt,
- x. Green chili,
- xi. Garlic,



- xii. Ragi flour (Nagali – *Eleusine coracana*) (5 tablespoone),
- xiii. Oil,
- xiv. Jiggery (40gm)

Recipe

Wash the leaf of Marsiliea, Brahmi, Shivli, Curry Leaf, and Flower of Karamada. Fry all the above ingredients separately in shallow oil for 5 minutes. Prepare a paste with karamada flower, cumin, chili& garlic.

Now mix the paste, turmeric, spices, sesame seeds, jaggery, salt, and oil (10 ml) with ragi flour and hot water. Make Manchurian balls and add some sesame seeds then fry it in shallow oil for 10-15 min. After 15 minutes, cut the Manchurian balls and again fry in shallow oil for 5-10 min. They are now ready to be served with chutney.

Chutney

Prepare a paste of curry leaves, Marsilea, karamada flower, cumin, chili, and garlic. Mix the paste jaggery and oil (5ml) with ragi flour (2 teaspoons) and water. Heat it for 10 min.

3. Fig Sabji

Ingredients

Oil, mustard seeds, Sesame seeds, Turmeric, Spices, chili powder, salt, Fig, and Coriander.

Recipe

First, cut the fig and boil in hot water. Then take oil and add mustard, dry chilly, turmeric, chili powder, spices, and sesame seeds to it. Fry well and then add fig and salt. Garnish it with coriander leaves.



4. Marsilea Nagli Thepla

Ingredients

Nagli flour, *Marselia* leaves, chili powder, turmeric, and salt.

Take nagli flour and add *Marselia* leaves, chili powder, turmeric, and salt to it. Mix well, add hot water and make the batter and use it for making thepla.



5. Bombax Androecium (Male Reproductive Structure) Murabbo

Ingredients and Recipe

Bombax androecium (male flowers), Jaggery, Sesame Seeds, and Fennel Seeds.

Cut the Bombax androecium, take it in a pan, add and melt jaggery. After 1-2 min, add fennel and sesame seeds.



6. Palash Sharbat (*Butea monosperma* (Kesudo))

Ingredients and Recipe

Palash Flowers, Water, and Jaggery.

Crush the petals of the flower and take out the juice. Add required jaggery and water.



7. Oxalis Nagli Tikki

Ingredients

Nagli flour, Oxalis Leaves, Salt, Garlic, Ginger, Green Chilly Chutney, Sesame, Turmeric

Recipe

Take Nagli flour & Add Chopped Oxalis leaves, garlic-ginger pest & add salt according to the taste. Make round tikki & fry in a small amount of oil.



8. Crispy Nagli Vada

Ingredients

Nagli flour, Sargva leaves, Green chili, Turmeric powder, Salt, Oil, Sesame seeds, Garlic, Funnel

Recipe

Take nagli flour, Sargava leaves, green chili, turmeric powder, oil, sesame seeds, fennel seed and make the dough. Take oil, make small size vada and fry into the hot oil.



9. Sulikibhaji, Tikhikhatti, with Nagli Chapati

Ingredients

Groundnut, sweet potato, tamarind leaf, Sulibhaji, nagli flour, turmeric powder, salt, clove, oil, garlic, coriander powder, mustard seed, red chili, cinnamon

Recipe

Tikhikhatti Chutney

Take 3-4 red chillies and 5-6 garlic cloves and crush them in the fennel seeds. To make it sour, add few drops of lemon.

Suli ki Bhaji

Add 3-tablespoon oil and then heat it. After few minutes add cinnamon, clove, tamal patra (boil it for 15 sec). Add the pieces of suli ki bhaji, sweet potato, one tablespoon turmeric powder, one-tablespoon red chili powder, and coriander powder and add salt to taste, and cook it for 30 minutes.

Nagli chapatti

Take Nagli flour, add salt to taste, and add water to make the dough. Cook on a mud tava or shallow fry after rolling round chapattis.



10. Bathiyaro Undhiyu

Ingredients

Sweet potato, Bombax ceiba flower petals, Coriander leaves, pea, chilly, Chili Powder, lemon, turmeric powder, mustard, Typha plant, Salt, Garlic and Oil

Recipe

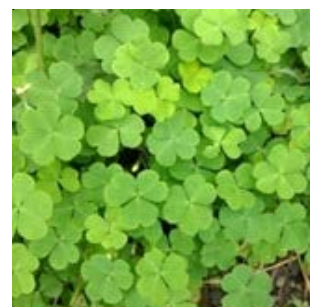
Boil the sweet potato in saltwater. Then take a bowl and add oil. Fry with the dry chilly, sweet potato, pigeon pea, and *Bombax ceiba* flower petals till it becomes brown, add garlic and spices. Garnish it with *Bombax ceiba* flowers and lemon.



ETHNO-BOTANICAL VALUE OF PLANTS OCCURRING IN THE DANGS FOREST

1. *Oxalis corniculata* - Changeri Leaves

Used in the treatment of influenza, fever, urinary tract infections, enteritis, diarrhea, traumatic injuries, sprains, and poisonous snake bites. The juice of the plant, mixed with butter, is applied to muscular swellings, boils, and pimples. An infusion can be used as a wash to rid children of hookworms. The plant is a good source of vitamin C and is used as an antiscorbutic in the treatment of scurvy. The leaves are used as an antidote to poisoning by the seeds of *Datura* spp, arsenic, and mercury. The leaf juice is applied to insect bites, burns, and skin eruptions. It has antibacterial activity.



2. *Carissa carandas* – Karmada

Its fruit is used in the ancient Indian herbal system of medicine, Ayurvedic to treat acidity, indigestion, fresh and infected wounds, skin, diseases, urinary disorders, and diabetic ulcer as well as biliousness, stomach pain, constipation, anemia, skin conditions. The roots serve as a stomachic, an anthelmintic medicine for itches, and also as insect repellents.



3. Oyster Mushroom

Oyster mushroom is a rich source of protein, vitamins, minerals, fiber and other antioxidants like selenium protect body cells from damage that might lead to chronic disease and help to strengthen the immune system. Oyster mushroom is low in calories, fat-free, Cholesterol free, Gluten-free and very low in sodium.



4. *Ipomoea batatas* – Sweet potato

Sweet potato, is an extremely versatile and delicious vegetable that possesses high nutritional value. It is also a valuable medicinal plant having anti-cancer, anti-diabetic and anti-inflammatory activities.

5. *Bombax ceiba* – Shimlo

Plant parts like flowers, young roots, gum, leaves, shoots, and bark have medicinal properties and are used as a treatment for various conditions and diseases Like cholera, fractures, toothache, coughs urinary problems influenza, and snake bites among others. Leaves juice is a good blood purifier, a paste of the root is applied on acne, skin, blemish, and burns.



6. *Murraya koenigii* – Kadhipata

Leaves are digestive, tonic, stimulant, rich in vitamin A and calcium. Leaves are also used for diarrhea, dysentery, and checking to vomit. Bark paste is antiseptic, applied to skin eruptions. The root extract is taken for relief from renal pain.



7. *Centella asiatica* - Brahmi

One of the great multipurpose miracle herbs of oriental medicine. The leaf and root extract has been used in ayurvedic medicine for a long time but has become very popular in the past couple of years for both internal as well as tropical applications. Brahmi leaf juice used as a brain tonic.

8. *Butea monosperma* – Kesudo

A hot poultice of leaves is used for the treatment of boils, skin ulcers, swelling, and piles.



9. *Cocculus hirsutus* – Jal Jamini



In Ayurvedic literature, patalagarudi is a straggling shrub, widely distributed all over India, especially in dry regions. The leaves and roots of this plant are largely employed in Indian traditional medicine for a variety of diseases including, hepatic obstruction, jaundice, bronchitis, diabetes mellitus, anorexia, gonorrhoea, and leprosy. *Cocculus hirsutus* is well documented for its anti-inflammatory, analgesic, anti-diabetic and spermatogenic activities. Considering its varied biological activities and traditional therapeutic use for hepatic disorders



10. *Ficus racemosa* – Audamber

A decoction of the root is given in dysentery. Fruits are used as an aphrodisiac and edible. The latex is used to make milk into curd.

11. *Moringa oleifera* – Sargavo

Moringa leaves are very nutritious, rich in antioxidants, lower blood sugar levels, reduce inflammation, and lower cholesterol.



12. *Typha angustifolia* – Typha

Mainly used in folk remedies for the treatment of tumors, as anticoagulant, astringent, sedative, and tonics. The whole inflorescence is used in the healing of wounds. The stamens, with the pollen, are used as an astringent and styptic. Seeds were used against burns. Several parts of the plant are edible, including dormant sprouts on the roots and bases of the leaves, ripe pollen, the stem, and the starchy roots. Roots can be consumed raw or cooked. They can be boiled and eaten like potatoes or macerated and then boiled to yield sweet syrup. Roots can also be dried, ground into a powder, and then used as a thickener in soups, etc., or added to cereal flours, and this protein-rich powder is used to make biscuits, etc.

Young shoots are eaten in spring raw or cooked. The base of the mature stem is also edible raw or cooked. The tender, young flowering stem is also edible raw, cooked, or prepared into a soup.

13. *Tamarindus indica* – Khati Ambli

India and Thailand are the major tamarind world producer and generating 300,000 to 140,000 tons annually. There are two main types of tamarind: Sour (the most common) and sweet (mostly comes from Thailand). It grows as a large tree and is found in all medicinal systems for several diseases, these include its usefulness in jaundice, in the liver, complaints, as an acid refrigerant, as a gentle laxative, in yellow fever, as a blood tonic, and as a skin cleanser. It contains invert sugar, citric acid, oleic acid, linoleic acid, pipercolic acid, lupeol, orientin, vitamin B3, vitamin C, vitexin, Phenylalanine, leucine, potassium, campesterol, etc..



14. *Cryptocoryne spiralis* – Suli ki Bhaji

Cryptocoryne spiralis grows seemingly everywhere in southwest India. This water plant can be found growing along streams, springs, grassy plains, paddy fields, and swamps. It can grow submerged or more commonly emerged above the waterline. It is used for Ayurvedic medicine as table fare in India. It contains an anti-itching nature from the leaves. Rhizome extracts are used for cough, fever, nausea, abdominal pain, vomiting in infants, and abdominal complaints. It has been discovered that it can also lower blood pressure as well. It has a wide variety of uses and is easy to get.

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FOOD CULTURE OF PARSIS

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ABSTRACT

The Parsis are descendants of Persian Zoroastrians who came to India, Gujarat in the 8th century. The Parsis have a huge contribution to blooming India's economy and their food culture carries the flavours of Iran and Gujarat. The tradition of eating stew, meats, dry fruits and nuts, draws its influences from Iranian cuisine. They added fish to their diet after settling on the coast of Gujarat, and later, with the British influence in colonial India, they took to snacks and desserts. This cuisine has some remarkable recipes which can cater to malnutrition, improve muscle health and improve the overall health of a person if consumed correctly. The cuisine is majorly rich in protein and iron.

INTRODUCTION

Parsis descended from Persian Zoroastrians who immigrated to India to avoid religious persecution and first settled at Diu in Kathiawar but soon moved to Sanjan, Gujarat, and from the 16th century more and more Parsis migrated to this town and remained for about 800 years as a small agricultural community. They were the preferred brokers for the European traders who preferred to conduct business through this community which had a minority and gave them the necessary flexibility. Over some time Parsis established themselves as entrepreneurs.

PARSI CUISINE

Parsi cuisine is a melange of dishes that are as rich as its culture. It has a multicultural influence. The tradition of eating stew, meats, dry fruits and nuts, draws its influences from Iranian cuisine. They added fish to their diet after settling on the coast of Gujarat, and later, with the British influence in colonial India, they took to snacks and desserts.

Traditional Parsi cuisine combines the flavours of fragrant spices like saffron and cinnamon, the sweetness of jaggery, and the tanginess of barberry. Most preparations are also topped with dry fruits

and nuts. The result is a dish with not just one flavour, but many, namely, sweet, sour, and spicy, better spoken as '*khattu, metthu ane tikkhu*' by Parsis. Most dishes require onions, tomatoes, ginger and garlic as an Indian influence, but it also includes vinegar and jaggery for the Iranian influence.

Parsis only took to fishing after coming to India, since Iran is a dry to semi-arid country. The well-known *Patra Ni Machchi* is completely Indian. It is pomfret which is wrapped in a banana leaf. Though Parsi cuisine majorly comprises non-vegetarian dishes, vegetables are an important part of the cuisine as well. Lots of forgotten dishes like *Chorpat par Edu* (eggs on bitter gourd), *Tameta par Edu* (a tangy tomato chutney topped with eggs), and the likes have a fair share of vegetables. The famous *Dhanshak* is a recipe that is authentically made with five types of pulses, certain vegetables, and meat. It is had with savoury caramelized rice.

A TYPICAL MEAL PATTERN OF A PARSI FAMILY

Breakfast -*Akuri* (spiced scrambled eggs) with *pav* (bread), *Bharuchi Akuri* (delicately spiced scrambled egg topped with fried onion and nuts) with *pav* or in general any type of egg preparation, *Jam malai* (fresh milk cream) on toast, *pav makhan* (bread with white butter), *Maska bun* (bun bread with sugar and butter, generally accompanied with tea), *Chaapat* (crepes served with honey), *Khurchan* (offal meat cooked in ginger-garlic paste and a few spices and herbs), *Kheema* (meat mince) *pav*, *Bumla* (Bombay duck) and *Tarela levta* (Fried Mudskipper).

Lunch/Dinner- *Mora daal chawal* with *Tamota Patio* (split pigeon peas delicately flavoured and had with plain rice and sweet, tangy tomato chutney which has fish/prawns in it), *Saas ni macchi ane Khichdi* (White fish curry made with just fresh green chillies and whole cumin seeds and an egg-sugar-vinegar mixture and served with basmati rice *Khichdi*), *Kharo ras chawal* (chicken or mutton cooked in a thin tomato and ginger-garlic gravy with potatoes and served with plain rice), *Curry Chawal* (curry made with coconut milk and homemade Parsi curry masala. One can add chicken, mutton, fish, prawns or boiled egg to it and served with rice), *Salli Chicken* (chicken cooked in spices with a light gravy and topped with deep fried thin potato sticks), any vegetable topped with egg like *Bhinda Par Edu* (egg on okra), *Tamota par Edu* (egg on tomato), *Papeta par Edu* (egg on potato), *Dhanshak* (Simplified by making with split green pigeon peas and mutton and served with brown caramelised rice), *Patra ni Macchi* (*Pomfret* marinated in green coconut chutney, wrapped in banana leaf and steamed to perfection) etc. *Kachumbar* (a salad consisting of onion tomato coriander, dressed with sugarcane vinegar) is generally accompanied with most meals.

Snacks-*Bhakhra* (doughnut made with whole wheat flour, semolina and delicately flavoured with fennel seeds), *Battasa* (savoury butter cookies), *Nankhatai* (cookies), *Dar ni Pori* (sweetened lentils stuffed in a light pastry), *Doodh na Puff* (cardamom flavoured milk froth) *Khaman na Ladva* (dumplings stuffed with sweetened coconut), *Dahitra* (rose flavoured fried dough).

Desserts-*Sev* (ghee roasted vermicelli cooked in sugar syrup), *Ravo* (sweet semolina pudding. Authentic *Ravo* would have egg beaten in milk for cooking the semolina) and *Malido* (a fudge made of mixed flours and topped with fried nuts, generally served during religious ceremonies). *Falooda* with *kulfi and nuts*, *Lagan nu Custard* (a cardamom and nutmeg flavoured milk pudding, generally served at weddings).

On any auspicious day, it's mandatory to cook *Sev* or *Ravo* and *Mora Daal Chawal* with *Machi no Patio*.

Dhanshak is not to be cooked on auspicious days. The famous *Dhanshak* is actually a meal mandatorily made on the fourth day after the demise of a family member and is cooked with mutton.

PARSI PICKLES

Parsi pickles are unique in taste and ingredients which have been modified as per the availability of ingredients in India. Some examples of Parsi pickles are mentioned below:

Gharab nu achar or fish roe pickle: *Bhing* or Herring roe is harvested in the monsoon season and pickled in spices and sugarcane vinegar. This one is surely unique.

Gajar mewa nu/ Lagan nu achar: Parsi wedding season is in winter, and that's when carrots are plenty. Select carrots are shredded and pickled with the choicest of dry fruits to make spicy-sweet pickles using sugarcane vinegar. It is served at the start and eaten with *Rotis* while the rest of the *patra* gets loaded at weddings and *Navjotes* too.

Bafenu: This is no ordinary pickle, made with ripe Alphonso mangoes pickled in a Parsi special blend of spices, mustard, jaggery, and vinegar. The secret to a good *bafenu* is the steaming of the mangoes and the skill of blending the special spices.

Tarapori patio/ Bombil or Bombay duck pickle: A fishy, sour, and spicy pickle cooked on stovetop using the dried *Bombil* or Bombay duck as the star ingredient.

Kolmi nu achaar or prawn pickle: it's a favourite of many. A hot and sweet pickle made with the freshest of prawns. Even the Bengalis are crazy after this one.

Methia nu achaar or mango and fenugreek pickle: A spicy unripe mango pickle married to the bitterness of fenugreek to create a symphony preserved in oil.

Vengna nu achaar or brinjal pickle: Pickle made with brinjals, which tastes spicy and sour.

Mix veg achar: Much like the north Indians, the Parsis have their own mix veg *achaar* that has a peculiar but pleasant taste.

Tamota ni chutney: Made with ripe tomatoes and studded with raisins, this sweet, spicy and sour chutney is a perfect accompaniment to fried food, with crackers or an innovative basting for the chicken.

Gosh nu achaar or mutton pickle: It's yet another stove top cooked *achaar* using meat, and preserved in vinegar and spices lending the fragrance to this sweet and spicy mutton pickle.

Fish nu achaar (Bangda/ Rawas/ Surmai): These are made from both fresh and dried fish when in season and are preserved in oil and the usual pickling spices like mustard seeds, cumin powder etc. Most of the non-vegetarian pickles have a shelf life of one year if stored correctly in the refrigerator.

Table 1: Parsi Foods that can be promoted for the Eat Right Movement

Recipe	Nutritional Benefits
<i>Dhanshak</i> with caramelized rice and <i>kachumber</i> . (mutton cooked with lentils and served with caramelized rice and salad)	<p>1 serving of dhanshak yields about 7% daily caloric requirement.</p> <p>Lentils are an excellent source of B vitamins, iron, magnesium, potassium and zinc. They're also a great source of plant-based protein and fibre.</p> <p>Lentils are a great source of health-promoting polyphenols, which have strong antioxidant and anti-inflammatory properties with potential cancer-cell inhibiting effects.</p> <p>Red meat has high-quality protein. It also contains varying amounts of fat, mostly saturated fat but also small amounts of CLA (conjugated linoleic acid), which has several health benefits.</p> <p>Meat is a rich source of many vitamins and minerals, including vitamin B12, iron, and zinc. These are important for various bodily functions. Red meat can also be used for anaemia prevention. Salad gives fiber to the diet.</p> <p>Can be suggested to patients with anemia, low muscle mass and are malnourished.</p>
<i>Doodh na puff</i> (whole milk froth)	Rich in fat, protein and calcium, suggested to be good for Children.
<i>Patra ni macchi</i> (Pomfret marinated in green chutney and wrapped in banana leaf and steam cooked)	<p>Pomfret is a great source of calcium, vitamins A and D, and B vitamins, including Vitamin B12, vital for the nervous system. It also offers iodine, critical for the thyroid gland. Useful for the brain and eyesight. Helps keep skin glowing and healthy hair.</p> <p>Coriander, good source of dietary fibre, manganese, iron and magnesium. It is also rich in Vitamin C, Vitamin K and protein. They also contain small amounts of calcium, phosphorus, potassium, thiamine, niacin and carotene.</p> <p>Coconut, high in manganese, which is essential for bone health and the metabolism of carbohydrates, proteins, and cholesterol. It is also rich in copper and iron, which help form red blood cells, as well as selenium, an important antioxidant that protects your cells.</p> <p>It can be suggested for overall health benefits</p>
<i>Bhinda par Edu</i> (Egg on Okra)	<p>Okra contains potassium, vitamin B, vitamin C, folic acid, and calcium. It's low in calories and has high dietary fibre content. It helps in improving insulin sensitivity and also aids in controlling and maintaining blood sugar levels in the body.</p> <p>Eggs, a very good source of inexpensive, high-quality protein. More than half the protein of an egg is found in the egg white, which also includes vitamin B2 and lower amounts of fat than the yolk. Eggs</p>

	are rich sources of selenium, vitamin D, B6, B12 and minerals such as zinc, iron and copper. It can be suggested to patients needing moderate caloric, high fibre, high protein diets.
<i>Kolmi no Patio</i> (Prawns cooked in tomato sauce)	Prawns, rich source of selenium, one of the most effective antioxidants at maintaining healthy cells. They also contain high levels of Zinc, which is important to develop a healthy immune system. Eating prawns helps build strong bones because they contain phosphorus, copper and magnesium. Tomatoes have high content on lycopene which is an antioxidant. It can help prevent certain cancers. It helps in lowering LDL cholesterol. Other nutrients in tomatoes, like vitamins B and E and antioxidants called flavonoids, may boost your heart health, too. Tomatoes have substances called lutein and zeaxanthin that help protect your eyes from the blue light made by digital devices. Overall health benefits.

CONCLUSION

Some common Parsi foods such as *doodh ba puff*, *dhanshak*, caramelized rice, *lagan nu custard*, *Macchi no saas* (fish in white curry) are highlights of Parsi Cuisine which has a blend of Gujarati and Persian foods.

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MAHARASHTRIAN FOOD CULTURE AND ITS NUTRITION ASPECTS

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INTRODUCTION

It is well known that the people of Maharashtra consider their food as *Anna he poornabrahma* meaning they consider *anna*, or food, equal to God, or the creator of the universe. In Maharashtra cuisine, Rice, *Jowar*, *Bajri*, and Wheat are the staple foods and peanuts and cashew nuts are widely used in vegetables, and peanut oil is used as the main cooking medium. The meat was traditionally used sparsely or only by the well off until recently, because of economic conditions and culture. The Maharashtra cuisine includes an enormous variety of vegetables in the regular diet and lots of fish and coconuts are used in the South East area called *Konkani* or *Malvani* cuisine.

Since Maharashtra occupies a vast area with distinct geographical differences and food availability, the Marathi people from different regions have produced a diverse cuisine. Maharashtra cuisines are divided into many regions like Konkan, Vidharbha, Marathwada, Kolhapur, and Western Ghat of Maharashtra.

CULINARY REGIONS IN MAHARASHTRA

- 1. Konkani Cuisine-** This region is further divided into Raigarh, Sindhurgarh, and Ratnagiri, on the coastal line. *Konkani* food is mostly influenced by the traditions and culture of Maharashtra, Karnataka, and Goa. Seafood like prawns, crabs and fish, coconut, and local spices are some of the main ingredients used in their delicacies. You will also find a lot of fiery and spicy dishes with a hint of coconut. *Amboli*, *Thalipith*, *Koshimbir (Raita)*, *Sabudana Khichdi*, and *Aluchi Vadi* are some of the traditional dishes. Nutrition Aspects: Overall it is nutrition dense food as it includes lots of protein, good fat, and vitamins.
- 2. Kolhapuri Cuisine-** The non – vegetarian dishes consumed are mutton and chicken items – Mutton *Kolhapuri* is the best-known of all. *Desi* chicken or *gavthi kombdi* is preferred to the regular broiler variety. Crabs that are found in the river water are also popular. Nutrition Aspect: Too spicy, contains good quality protein, good fat. Millets are used and use very few vegetables. *SolKadhi* is very nutritious as it is made up of Coconut Milk.

3. **Vidarbha Cuisine-** This region includes the districts of Nagpur, Chandrapur, and Yavatmal. The main profession of the people here is farming and they mostly eat a dish called *hurda*, which is roasted raw *jowar* mixed with curd. The food is very spicy and is usually dry or mixed with ginger, green chilies, and lime. *Jowar* is a staple food and they made *Bhakari*. *Vada bhaat* or lentil fritters mixed with boiled rice are very commonly consumed in this region. The famous *poha* comes from this region of Maharashtra. Fruits like oranges grow in abundance here. Nutrition Aspects: As we all know Millets are more nutritious than grains. Oranges are a good source of Vitamin C.
4. **Western Ghat Cuisine-** The important cities along the coastline are Nasik, Pune and Mumbai. Bombay duck or *bombil* is a dried variety of fish that is very popular. It is prepared in gravy or just stir-fried and served. *Papad*, *pickle*, *chutney*, and *koshimbir* (salad with some coconut, peanuts, and tempering) are popular accompaniments of food in this region. *Pithal Bhakri* is a famous dish of Nasik region. Main meals consist of *chapati*, one Veg, boiled rice; *varan* (plain *toovar dal*) with some ghee in it. Nasik Grapes and wine is very famous. Nutrition Aspect: Good source of protein, fat, and vitamins.
5. **Marathwada Cuisine-** This region comprises of Aurangabad, Nander and Latur. Moderately spiced food is preferred here. Freshly ground masalas are preferred here to flavour the food. Chutneys are prepared here out of the peels of vegetables such as *doodhi* and Groundnut. These chutneys have a flavour of their own and they are eaten along with the food for lunch as well as dinner.

Table 1: Crops of Maharashtra

Food Groups	Konkan	Vidarbha	Marathwada	Kolhapur	Western Ghat
Cereal, Millets	Rice, <i>Ragi</i>	Jowar, Pearl Millet, Rice, maize	Jowar, maize	Jowar, Rice, wheat	Wheat, maize
Pulses	Black gram	Soyabean, green gram, black gram, red gram	Soyabean, green gram, black gram, red gram	Black gram, red gram	Soybean, green gram, black gram, red gram
Veg	Potato	Brinjal, Tomato, cauliflower, cabbage		Leafy vegetables	Leafy and all types of fruit vegetables
Fruits	Strawberry, coconut, mango, Jack fruits, banana	Oranges	Pomegranat, Sweet Lime	<i>Sangli</i> , Grapes, strawberry	Grapes, Guava

	Karvanda, Kokum				
Milk and Milk Product	Cow Milk	Cow milk	Cow Milk	Cow milk	Cow and Buffalo milk
Fats and oils	Coconut oil	Cotton seed oil	Sunflower oil, safflower oil	Pure ghee	Sunflower oil, safflower oil, pure ghee

Table 2: Food groups and their representations in the diets of various regions of Maharashtra

Food Groups	Konkan	Vidarbha	Marathwada	Kolhapur	Western Ghat
Meat and Meat product	Fish ,lamb	Chicken Mutton,	Chicken Mutton,	Chicken Mutton,	Dry fish, chicken, mutton
Nuts	Betel nut, coconut	Groundnut	Groundnut	Ground nut, Almond, cashew	Groundnuts,
Oilseeds	Mustard ,sunflower	Cotton seed oil	Sunflower, safflower	Sunflower seeds, sesame seeds	Sunflower seeds, sesame seeds
Dry fruits	Cashew	NA	NA	Cashews	NA
Sugars	NA	Sugar	NA	Sugar jaggery	Sugar jaggery
Fats and Oils	Coconut oil	Cotton seed oil	Sunflower oil, safflower oil	Pure ghee,	Sunflower oil, safflower oil, Pure ghee
Spices	Cinnamon,	NA	NA	Cinnamon	NA

A TYPICAL MENU OF MAHARASHTRIAN FAMILY

For a Maharashtrian family of an urban area, daily diets include wheat (as *chapatis*) and plain rice as the main staples by the rural households consume millet *bhakri* on the Deccan plains and rice on the

Breakfast may include *poha*, *missal*, *upma*, *sheera*, *sabudana khichadi*, *thalipeeth*, seasoned leftover rice (*phodnicha bhat*). Lunch/dinner items include *chapatis* or *ghadichi poli*, rice, *koshimbir* (salad), *papad*, chutney, pickle, *Aamti* or *varan*, *dal* or *Kadhi*, seasonal vegetables (gravy based or dry). Use of *Usal* or sprouted legumes is common. Non-vegetarian items such as fish and meat are also relished.

In the *Konkan* coastal area, boiled rice, and *rice bhakri*, *nachni bhakri* is the staple, with a combination of the vegetable and non-vegetable dishes described in the lunch and dinner menu.

Festive Foods of Maharashtra include *Puran Poli*, *Chakli*, *Shankrpale*, *Besan Laddu*, and *Karanji*. *Anarase* and *Ukdiche Modak*. **Special Snacks of Maharashtra are** *Vadapav*, *Sabudana Khichadi*, *Shevpuri*, *Milsalpav*, *Pohe* and *Upma*

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ANTHROPOLOGY OF FOOD IN MARATHWADA, ITS LOCAL CUISINES, DIETARY HABITS AND THEIR HEALTH IMPLICATIONS

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ABSTRACT

Marathwada is a region in central Maharashtra and comprises 8 districts. Aurangabad was an important city in the erstwhile Nizam's state of Hyderabad, and that has influenced some portion of its cuisine. The rest of the region typically consumes traditional *Marathwadi* food. Marathwada has rich black soil from the Deccan Traps, but since it falls in the rain shadow region, it generally experiences drought and severe weather conditions. *Jowar*, groundnut, sugarcane, and pulses are the major crops grown in the region. *Ukad shengule*, *metkut* and *kala masala* are a specialty of this region. People have adapted to the drought conditions and the scarcity of fresh produce, thus have developed innovative dishes that ensure nutritional adequacy.

INTRODUCTION

Maharashtra is one of the largest states in India and is divided into 4 regions, namely, western Maharashtra, Konkan, Vidarbha, and Marathwada. Marathwada occupies 64,813 sq. km area of the total land of Maharashtra. It comprises 8 districts-Aurangabad, Jalna, Parbhani, Beed, Hingoli, Nanded, Latur, and Osmanabad [1].

ETHNOGRAPHIC DATA OF THE REGION

The region of Central Maharashtra is known as Marathwada and falls under the Aurangabad division of the state. The moniker 'Marathwada' literally means the house of Marathi people and was used to describe the land occupied by Marathi-speaking people during Nizam's rule. This name has been in use since as early as the 18th century. The 7th Nizam of the former Hyderabad kingdom established the agricultural research centers for sorghum, fruits, and cotton in the region, which was further developed by the Indian government after independence [2].

The terrain of Marathwada is generally flat, with some elevation ranging from 300 to 900 meters. It also has some mountain ranges such as the Balaghat range [3-4]. However, these ranges do not attract rains or provide water for agriculture, hence are not very significant for the economic growth of the region. The soil of this region is generally dark colored and stiff, mainly due to Deccan Traps lava flows [3-5]. The northern part of Marathwada is highly fertile, while the southern part is comparatively dry. Godavari, Purna, and Manjara are the main rivers that flow through the region [3].

The climate of Marathwada is the typically hot and dry climate of the tropical regions. The average temperature during the day ranges from 27.7-38.0°, while the night temperature falls between 26.9-20.0°. The summer months from March to May are extremely hot, with the maximum temperatures reaching as high as 46.0° in some areas.

The winter months from November to January are quite pleasant, but the temperatures may dip as low as 2.2° in some districts. The southwest monsoons bring rain to the region from the middle of June till the end of September. These monsoons precipitate majorly over the western coast of Maharashtra due to the Sahyadri Mountains, and only some amount of precipitation is received by the Deccan plateau, which falls in the rain shadow region of the Sahyadris. Hence, even though the average rainfall of the region is around 90 cm, it varies greatly each year. Additionally, the rainfall is not uniform in all districts of the region; it is maximum in the Nanded district, while least in the Beed district [1].

HISTORY OF FOOD OF THE REGION

Every region has some foods that have been passed down through the generations, and are almost indigenous to only that particular place. Marathwada is no exception to this.

Mughal influence on food: Aurangabad was an erstwhile Mughal military base due to its strategic location on the Deccan plateau. Owing to this, the soldiers couldn't light fire for cooking at night, in order to prevent the enemy from knowing their location. This necessitated them to find out ingenious ways of cooking dinner. Thus was born the technique of slowly cooking food in a tandoor for 8 to 10 hours, which is used even today. Unlike other important Mughal cities, Aurangabad wasn't a lavish place. The culture was more of workmanship and labor, which can be seen even today [6,7].

Maharashtrian modifications: Other districts like Jalna, Beed, Parbhani, etc. also have been under Muslim rule for hundreds of years hence have a mix of various religions residing here. However, unlike Aurangabad, the people here mostly prefer traditional Maharashtrian food such as *puran poli*, *batata vada*, *dal*, chutneys, *upma*, *khichdi*, etc. They are primarily vegetarians, who use spices and chilies quite heavily in their food preparations. Having said that, the people, especially non-vegetarians, still like having the Mughlai delicacy-Biryani during festivals and celebrations [8,9].

GEOGRAPHY AND CULTURE OF THE REGION

The total geographical area of Marathwada is 64,813 sq. km. The region is surrounded by Jalgaon, Buldhana, and Yavatmal districts in the north, Solapur district in the south, Nashik and Ahmednagar districts in the west, and Andhra Pradesh in the east [1]. Out of the total geographical area, about 57 lakh hectares are suitable for agriculture. However, the net sown area is only 75 percent of the total geographical area [1].

Marathwada, like most other parts of Maharashtra, was formed around 60 to 90 million years ago by the outpouring of lava through the fissures, which created horizontal layers of basalt over vast portions of land [10].

The topography of Marathwada is such that it always receives less rainfall as compared to other parts of Maharashtra. When the Southwest Monsoon winds reach Maharashtra, they are obstructed by the Sahyadri ranges, resulting in heavy rainfall in the coastal areas. Once they cross the Sahyadris, the western belt of Maharashtra, which comes under the rain shadow region, receives some amount of rain. By the time they reach the Marathwada region, there is very little rain left for precipitation.

This topography has been present for centuries. The farmers of the region understood this well, and started growing *Rabi* crops. However, the major issue faced by the farmers today, is that there is an impractical and non-viable demand placed on an area which has entirely different characteristics [11].

The region is quite famous as the 'land of saints'. It has various renowned tourist places such as Shri Hazoor Sahib Gurudwara, Tuljapur, Kandhar fort, Aundha Nagnath, and many more [12].

Nanded is considered to be one of the oldest places in Marathwada. It is also known as Hazur Sahib, and is one of the holiest places for Sikh pilgrims, second only to the Golden Temple of Amritsar [12]. Aurangabad district has a collection of tourist attractions such as Ajanta-Ellora caves, Daulatabad fort, *Bibi Ka Makbara*, etc. making it the 'tourism capital of Maharashtra' [2,12].

Agriculture/crops /Local foods

The entire Marathwada region falls under the Deccan Traps. The granite rocks have resulted in the formation of red and black cotton soils [1]. The majority of the region has deep black soil, which has been derived from the trap-rocks. However, differences in exposure and protection of the soil have resulted in variations in its texture and depth. The eastern parts of the region have a mixture of black and laterite soils. The riverbanks have laterite, black, as well as sandy soil, which can retain moisture [1,13].

The chemical composition of the soil is such that it is rich in calcium and magnesium but deficient in nitrogen and phosphorus. This characteristic composition is the reason for the cracking of the soil during the hot summers [1].

The agro-climatic zone has been defined by the Food and Agriculture Organization (FAO) as a land unit represented accurately or precisely in terms of major climate and growing period, which is climatically suitable for a certain range of crops and cultivars. The Agro-climatic zone is one way to ensure maximum production and yield from the existing resources and climatic conditions [14].

Maharashtra state has been divided into nine such Agro-climatic zones, and the Marathwada region falls under three of these categories, namely, scarcity zones, assured rainfall zone, and moderate to moderately high rainfall zone [13]. A large part of the plateau including the western part of Parbhani, the southern part of Nanded district, and the northern, southern, and eastern part of Aurangabad, Beed, and Osmanabad districts, falls under the assured rainfall zone. The soils in these parts are vertisoils and entisoils, which range from medium black to reddish-brown [15].

Cropping pattern

The soil on the riverbanks is medium black and deep, and during favorable rainfall years, can produce large amounts of *rabi* crops. It is rich in plant nutrients and is suitable for producing good kharif or *rabi* crops like wheat, pulses, *jowar*, sugarcane, and groundnut [13].

Groundnut, pulses, sugarcane, oilseeds, and millets are grown in large parts of the region. However, *jowar* is the most important crop grown here [15]. However, farmers from the drought-prone districts of western parts of Aurangabad, *Beed* and certain talukas of Osmanabad district, have shifted their agricultural practices from growing traditional cash crops like cotton, to pulses such as *tur*, soybean, *moong*, and *udad*. This has helped them to save approximately 40 to 50 percent of the groundwater, thereby saving the groundwater reserves [16].

TRADITIONS/FOOD HABITS /CUISINES IT'S RELATIONSHIP ON FOOD AND NUTRITION SECURITY OF VARIOUS POPULATION GROUPS

The Marathwada is a typically dry area, which receives almost 30 percent less rainfall as compared to the rest of the country. Hence, people here have limited access to fresh vegetables during the majority of the year. Winter months are the only time when gourds, green leafy vegetables and some other vegetables are available. This has made it necessary for the locals to majorly use sun dried products in their daily meals [17].

In winter, people coat vegetables such as chillies, beans, and okra in buttermilk, season it with cumin powder, and dry it in the sun. These are then fried and used as accompaniments during meals [17].

Another important component of local *Marathwadi* food is the *kala* (black) masala. Various spices such as *Sankeshwari* red chilli, grated dry coconut, coriander seeds, black pepper, *triphala*, mace, fenugreek, dried ginger and tonnes of other ingredients are dry roasted and ground into a powder. This is used as a base for almost all preparations [17-18].

Metkut is also a very popular dry powder, consisting of a mix of dry-roasted wheat, rice, lentils, and spices. It has multiple uses, the most common being yogurt dip or for sprinkling over hot rice or *poha* [17].

Like the rest of Maharashtra, traditional *Marathwadi* food is served on a large metal plate, also called '*taat*'. The food has to be served in a particular sequence. Salt is served first at the top of the '*taat*'. Going anti-clockwise, lemon, pickle, chutney, and *koshimbir* (a sort of a salad/ *raita*) is served on the left side. Vegetable preparations and *aamti* (lentil preparation) are placed on the right side. The center of the plate is for rice, *Roti/ bhakri* and occasionally, papad (or other fried accompaniments), and sweets.

Jowar is the most commonly grown grain in Marathwada. As a result, most of the traditional food here comprises mainly *jowar*. *Jowar bhakri* (flatbread) is the staple food in most of the areas. However, urbanization has resulted in many city-dwellers preferring wheat *Rotis*. Owing to the shortage of products in many areas of Marathwada, people have found innovative ways of ensuring a wholesome meal.

Thalipeeth is a type of flatbread that is shaped by hand and roasted on a *tawa*. The dough is made of a mixture of flours or grains like *jowar*, *bajra*, various *dals* and pulses. This helps achieve a balance of nutrients, without using too much of one grain.

Another nutritious dish is ‘*valvat*’, which are hand-rolled kinds of pasta. They are made with whole wheat flour, *jowar* flour, and semolina. They are shaped like grains of rice, small shells or little balls, and can be eaten fresh, or dried in the sun for storage. Popular dishes made with *valvat* include savoury snacks or desserts.

FOOD FOR DROUGHTS

People of rural Marathwada face the most brunt during drought conditions. But they have found crops and turned them into dishes that are drought-friendly. Potatoes are sauteed instead of boiling, dal preparations are watered down, and curd is served to provide a cool end to the meal. Also, *moringa* (drumstick) is also a popular preparation, due to its drought-tolerant nature. Its leaves and pods are nutritious, as well as tasty, and eaten as curry or dry *sabji* [19].

FOODS THAT CAN BE PROMOTED FOR EAT RIGHT MOVEMENT

Most of the traditional Maharashtrian, and in extension, *Marathwadi* food is prepared using healthy cooking methods. These include simmering, steaming, roasting, *tawa*, and pressure cooking. The deep frying technique is used only occasionally, such as during festivals or religious occasions. Other methods such as sun-drying and fermentation are also frequently used in the region. This is the reason why people from the older generation had less prevalence of NCDs like diabetes, hypertension, etc. Marathwada has the lowest burden of the prevalence of NCDs as compared to the rest of the state [20].

However, today’s young population has been influenced by the media and prefers to eat unhealthy, refined foods. Hence, it has become necessary to focus on promoting health, instead of concentrating on curing the disease [20]. Healthy eating, promoting traditional foods, physical activity, a complete ban on tobacco, and reduction in consumption of alcohol should be included in the health education program.

Table 1: Traditional Recipes That Can Be Promoted for Eat Right Movement

Recipe	Main ingredients	Benefits	Beneficial for	Modifications
<i>Ukad shengule</i>	Jowar flour, wheat flour, besan	Boiled, rich in fiber, polyphenols	Diabetes, weight loss, CVDs	Can be made without wheat flour to make it gluten-free
<i>Jwariche dhirde</i>	Jowar flour, wheat flour, semolina	Low oil recipe, rich in fiber, polyphenols	Diabetes, weight loss, CVDs	Can be made without wheat flour to make it gluten free

Drumsticks curry/ dry	Drumstick pods	Rich in Vitamin A, fiber, antioxidants, minerals	Modest reduction in blood sugar and cholesterol levels, antioxidant and anti- inflammatory action	Drumstick leaves can be added to the curry to increase the nutritional value
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ANTHROPOLOGY OF FOOD IN GOA AND ITS CONTRIBUTION TO FOOD AND NUTRITION SECURITY

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ABSTRACT

Goa, a tiny region on the Indian West Coast was ruled by various powers including the Maurya's, Bhojas, Chalukyas, Kadambas, Bahamani, Bijapur, and the Portuguese. All dynasties left their imprint on the parts of Goa ruled by them. Portugal's 451 yearlong rules however influenced the Goan lifestyle and cuisine more than any other particularly among the Christians (Petrini, 2003). Food has shaped our world and our food is shaped by our world. Economics and religion often define the type of food people eat in Goa. Christians generally had no food restriction based on religion. Both Hindus and Muslims did not eat pork while the Hindus also refrained from eating beef (Fatima, 2011). The mainstay of almost all Goans is rice, curry, fish, and boiled vegetables except for a day or two each week and during the month of *Shravan* or on religious occasions the majority of the Hindus in Goa are non-vegetarian. The food habits of this region were rice centric. With the influence of ready to eat and cook foods, with the influence of other regions, Goa is on the verge of losing its traditional recipes which calls for revival. Nutritionally, the Goan diet is adequate in all the nutrients and if eaten in moderation with certain modifications can be considered as a balanced diet. Nutrition security with Goa's immense biodiversity with intake of a wide range of foods is of great advantage to Goans.

INTRODUCTION

Goa State was formed in 1987 after separating from the union territory of Goa, Daman, and Diu and has one of the highest GDP per capita and Human Development Index among Indian states (Research, 2013) though it has the smallest state by area. Goa is situated on the western coast of India between the Sahyadri mountain range and the Arabian Sea, and has a rich and diverse mosaic of culture that has evolved and embellished itself during a history of more than 2000 years (Pandurang, 2004) such as the Usgalimal rock engravings of the upper Palaeolithic or Mesolithic periods which exhibit some of the earliest traces of human settlement in Goa. The Mauryan and Satavahana Empires ruled modern-day Goa during the Iron Age. During the medieval period, Goa was ruled by the Kadamba kingdom, Vijayanagara Empire, Bahmani Sultanate, and Bijapur Sultanate. The Portuguese invaded Goa in 1510,

defeating the Bijapur Sultanate (Research, 2013). Every ruler probably has influenced Goan culture, cuisine, and architecture with a heavy influence of Portuguese rule being lasted for about 450 years. Many Catholic dishes are either similar to or variants of their Portuguese counterparts in both naming or their use of ingredients.

The well-springs of Goa's culture are rooted in three great religions, Hinduism Christianity and Islam . Many of the forms developed as a part of the religious observances. Right from mother goddess worship, betal worship, and Mallikarjun Cult to mosques of the Sultanate period to the Christian heritage from 16th century onward, these forms have been an integral part of people's lives in this region.

Goan culture cannot be studied as a monolith. Kamat (2001, 2004) defines Goan culture with a multidisciplinary perspective as 100,000 years old culture of the migrated humans settled and evolved on the central West Coast of India represented by 4 racial types, minimum 41 kinship groups, deeply rooted traditions of eco theological worship of the biosphere. The people of Goa are largely Konkani speaking who adapted an influx of global ideas, maritime trade, and other service sector enterprises (Pandurang, 2004).

Goa scores were high on all three levels of biodiversity: - ecosystems, species, and genes. Climatic fluctuations and the changing monsoon precipitation have influenced the flora and fauna of Goa. Goa has been transformed by history as a tropical Botanical Garden on account of a curious blend of indigenous and introduced plant species, the wild salt-tolerant rice varieties. It has a large number of mango cultivars, a diversity of medicinal plants and herbs, and a rich basket of indigenous and exotic flowers and fruits including some rare varieties of seasonal monsoon fruits which make Goa a paradise of agrobiodiversity (Pandurang, 2004).

FOOD CULTURE OF GOA

The ethnic culinary art always supported natives for fasting or feasting despite the different religions such as Hindu, Christians, and Muslims by way of several traditional dishes. One finds an enormous range of traditional nonvegetarian and vegetarian Goan dishes. The culinary art and food ethics of Goa is a unique heritage of this state; this knowledge is slowly disappearing with the onslaught of mass media and the fashion of processed, ultra-processed, and other regional cuisines.

'Adi jev, magir dev' (first eat, then pray - a Konkani proverb) this verily, is the highest form of the soul (*atma*), namely food; for truly, this life (*prana*) consists of food. Thus it has been said: if one does not eat, he becomes a non-thinker, a non-hearer, a non-toucher, a non-seer, a non-speaker, a non-smeller, a non-taster and he lets go his vital breaths (and): if indeed one eats, he becomes well supplied with life; he becomes a speaker; he becomes well supplied with life; becomes a speaker, he becomes a seer, a smeller, a taster and he lets go his vital breaths. Thus it has been said; from food, verify, creatures are produced, whatsoever (creatures) dwell on the earth. Moreover by food, in truth, they live; moreover into it also they finally pass. Maitri Upanishad: 6, 11-13.

GOAN CUISINE

The food that does not contain grated coconut or coconut oil is not Goan food and of course, the style of preparation renders unique *Goenkarpann*. Goan meals include three major meals with two small

and if closely analyzed from a nutritionist's point of view, the diet is quite balanced. Throughout colonial rule, Goa lacked agricultural resources to feed its population and was dependent on imported food.

The cuisine can be divided into Goan Hindu cuisine, Goan Catholic cuisine, and Goan Muslim cuisine and is very distinctive with the use of ingredients, the recipe name, and style of preparation, although food is relished by all the religions equally. Christians, while preparing Prawn *balchao* (pickle) use toddy vinegar while the Hindus use tomatoes. Asafoetida (*hing*) is commonly used in Hindu cuisine but not in Catholics.

Hindus use *urad dal* to ferment rice while Christians generally use toddy for fermentation. Goan Christians were more influenced by the outside world as seen in their cuisine. Goan cuisine includes rice, seafood, fish, coconut, coconut oil, vegetables, meat, pork, and spices in abundance. Since Goa is located in a tropical climate, spices and flavours are intense. The use of *kokum* (*Garcinia indica*) and *teflam* is another distinct feature. The most hospitable delight that a Goan offer is by overfeeding and with a provoking say "SOUKAS JEV", eat leisurely.

GOAN HINDU CUISINE

Goan Hindu cuisine is mainly pescatarian and lacto-vegetarian and uses tamarind and *kokum* for souring, and jaggery for sweetening. The *masalas* used in Goan food, be it *shagoti*, *vindaloo* or *khathkhate* are dependent on the spices and herbs available in the region. Use of *hing*, *curry patta*, peppercorns, mustard seeds, dry *methi* seeds, *urad dal*, turmeric, *teflam*, and varieties of local red chilies:- *khola mirsaang*, *hadfadchi mirsaang*, onion, and garlic is prominent (Usgaonkar,2001).

Goan main meals also include vegetables, such as local leafy vegetables, pumpkins, gourds, bamboo shoots, and roots. Fresh coconut is used in gravies and boiled vegetable preparations. Many traditional desserts are cooked in non-dairy coconut milk which can be enjoyed by those with lactose intolerance as well as by those who could not afford milk.

1. Vegetarian dishes (*shivraak*)

In the month of *Shravan*, vegetarian food is cooked without onion and garlic in most Hindu Goan homes. All the preparations are made from coconut, raw bananas, mangoes, and hog plums. Jackfruit is used to prepare various delicacies such as *sushel*, *chacko*, the seeds are boiled or added to various other vegetable preparations or fried into tasty chips (Usgaonkar, 2001). Jackfruit tree leaves are used for flavouring in the traditional desserts *soji* which served for celebrations or used as a wrapping for steaming the fermented rice-based preparation.

Some traditional healthy recipes include, boiled *sabji* (*bhaji*) using local leafy vegetables (*alu*, *tere*, *mulo*, *taambdi bhaji*) and other vegetables like lady finger, drumsticks and leaves, *gherkins*, yam, brinjals, raw and ripe jackfruit (*chako*, *sushel*, *gharay*), bitter gourd. Some recipes include *futi kadi* or *solkadi*, *karatya raitem*, *kill*, *khataakhatem*, *kunval*, *karam*, *lonchem*, *mugam Gatti*, *chanyache tonnak*, *sansav*, *shak*, *tallileo fodi*, *tondak*, *uddamethi*, *usali*, *vade*, *maska fulaan daangar*, *kayloryo*, *bhakri*, *sheppeche polle*, *wild mushrooms seasonal tonnak* and many more delectable and nutritious traditional recipes.

Pure vegetarian food is always a must at the Hindu Goan wedding; the cooks are booked well in advance (Lourdes, 2004).

2. Non-vegetarian Hindu dishes

These include over 20 ways of preparing or cooking mackerel. *Mori masala*, *saangta*, *aamat tik*, *humann* using varieties of fish, *kalputi*, *kismoor*, *xagoti* (chicken/mutton), *bangdyache/sungtache lonche*, *bangdyachi uddameti*, *Sukem/Dabdabit* (Fatima, 2011).

The medium of cooking originally was coconut oil, however, over several decades other vegetable oils are being used probably with the influence of advertising agencies and easy availability. Most of the authentic Goan recipes derive their flavour from the finely prepared wet and dry masala.

HINDU GOAN GARAM MASALA

Indian food differs based on the *garam masala* prepared, Punjabi *chole* varies from Kashmiri *dum aaloo* and so is Goan *masala* immensely contributing to its vegetarian and non-vegetarian gravies. This *masala* is unique in its preparation which enormously contributes to the world-famous chicken *shagoti* (*Xacuti*) and not all can get the same delectable flavour despite the standardized recipe (Usgaonkar, 2001). The main ingredients used in making *goan masala* are – coriander seeds (*Kothmiryo*), dried red chillies (*Tambdi mirsaang*), mustard seeds (*Saasva*), *shahi jeera* (*Sarejeere*), peppercorns (*Miri*), large *masala* cinnamon (*Badi elaichi*), nutmeg (*Jaiphal*), cloves (*Lavang*), cinnamon sticks (*Tiki*), mace (*dagadful*), poppy seeds (*Khus khus*), fennel (*Badishep*), Fenugreek seeds (*Methi*), turmeric pieces (*haldi kut*) and bay leaves (*Tikyeche paan*). To make the *masala*, roast chillies, coriander seeds and fenugreek in a little oil. The rest of the spices have to be dry roasted separately. On browning and release of aroma, remove from pan, mix altogether and powder and store in an airtight container.

It is interesting to note that some foods like fruits and tubers were not consumed for long. Even when finally accepted they were not included in food for the Gods by Hindus, like aubergines, tomato, and potato.

Potato was brought by Portuguese to Goa possibly at the end of the sixteenth century. Potatoes were usually added to meat-based gravies to reduce the cost and to add flavour and thicken the product. They have now become an integral part of our cuisine however till-date not been offered to the Gods.

The State fish is *Mullet* (*Shevto*). The most commonly eaten seafood includes Kingfish (*visvan*), pomfret (*paplet*), shark (*mori*), tuna, Anchovy (*Motiyali*), Silverfish (*Velli*), ladyfish (*muddoshi*), *chonak*, *paalu*, Red snapper (*tamso*), sardines (*talle*), (*Dodyare*) and mackerel (*Bangdo*) amongst other river fishes. Among the shellfish are crabs (*kulli*), prawns (*sungat*), tiger prawns, lobster, squid (*Manki*), clams (*tisryo/khube*) and mussels (*xinanyo*).

Popular Goan Hindu Dishes In Main Meals Include Variety Of Delicacies On A Weekly Basis

Dish	Description
Boiled rice (शीत)	
Fish curry (हूमण)	
<i>Chapati</i> (चपाती)	interestingly <i>chapatis</i> in Goa are eaten for breakfast unlike other regions where it is a part of either lunch or dinner
<i>Bhakri</i> (भाकरी)	usually prepared using rice flour with chopped onions, green chillies and fresh coconut
Fried fish (तळिल्ले नूस्ते)	
Fish <i>Sukha</i> or <i>dhabdhabit</i> (सुकें)	Dry spicy preparation of different types of fish eaten as a side dish
<i>Kismur</i> (किस्मुर)	A type of side dish normally consisting of dried fish (mostly mackerel or shrimp), onions, kokum and coconut
<i>Dangar</i> (डांगर)	Goan cutlets either using fish, clams or prawns
<i>Kalputi</i>	A dish normally prepared from the head of a large fish, with onions and coconut
Udid methi or uddamethi (उद्दमेथी)	Type of gravy consisting of fenugreek and blackgram (<i>urad dal</i>) using mackerel in non-vegetarian preparation, a vegetarian version of this dish is prepared using hog plums (<i>aambado</i>), raw mango (<i>tor</i>), <i>bimbli</i> , pineapple (<i>ananas</i>).
<i>Karam</i>	A type of dry gravy using hog plums (<i>aambado</i>) , raw mango(<i>tor</i>), <i>bimbli</i> , pineapple (<i>ananas</i>)
<i>Saasav</i>	Usually prepared using a smaller variety of mangoes called Ghota
<i>Bhaaji or shak</i> (भाजी or शाक)	A generic term for stews, curries, and stir-fried dishes made from different indigenous leafy vegetables, roots and tubers and other vegetables like lady fingers, drumstick leaves, gourds and fruits
Zhunko (झुणको)	A dry preparation using chickpea flour with drumsticks/potatoes/cauliflower and coconut.
(Kaapa/कापां)	Used as accompaniments prepared from breadfruit, plantains, radish, ridge gourd, bitter gourd, knolkhol, yellow pumpkin, onions, brinjals with <i>rava</i> or rice flour (traditional) coating.
<i>Khatkhate</i> (खतखतें)	mixed vegetable preparation using local roots/tubers, stem of green vegetables and coconut with seasoning of <i>teflam</i>
<i>Mug gaati</i> (मुगा गाटी)	Sprouted <i>moong</i> in coconut gravy
Varan (वरण)	A lentil preparation often made with coconut milk tempered with mustard, curry leaves, and chilies, served as an accompaniment to rice for the Naivedya, prepared during all Hindu festivals, and an integral part of wedding feasts.

Potato Bhaji (बटाटभाजी)	Very unique in preparation in Goa, it is not dry but with gravy seasoned with mustard seeds, onion, cloves
Tondak (तोंडाक)	A dish with dehydrated beans, most commonly using indigenous cowpea (<i>alsaando</i>), dry peas, chickpeas, lentils etc. or different type of seasonal vegetables like bamboo shoot, <i>ankur</i> and cashews as the primary ingredients
	Brinjal <i>bharta</i> (वायग्याचे भर्त), Raw Jackfruit dry vegetable / <i>bharta</i> (चाको/सुशेल), Raw Jackfruit pancakes (आमोळ्यो), Yellow Pumpkin <i>bharta</i> (दुधयाचे भर्त), Banana flower vegetable (केळफूल बोंडयेची भाजी) and Bamboo shoot Gravy/ <i>ussal</i> (किल्लाचें तोंगाक/उसळ)
<i>Bhajias</i>	A popular snack, Fried fritters with <i>besan</i> batter. Different kinds of <i>bhajias</i> can be made using different vegetables. Popular <i>bhajias</i> include those containing onion or chillies.
Samosa-	Goan <i>samosas</i> differ in wrapping which is flat and not 3D like the Punjabi <i>samosas</i> .
<i>Shepu dosa</i> (शेपे पोळे)	Dosas made of batter prepared with <i>shepu bhaji</i> , <i>urad dal</i> , rice, <i>methi</i> seeds, jaggery and coconut, salt.
<i>Kokum curry</i> (सोलकडी)	A spicy <i>kokum</i> curry with and without coconut, with green chillies or red chillies, or with <i>ajwain</i> seeds used as a digestive post-meal and anti-helminthic action owing to <i>ajwain</i> seeds.
Fried slices (कापां)	using various roots and tubers like (Tapioca- <i>Madyechyo fodi</i> , Breadfruit- <i>nirpanas</i> , plantain- <i>bhajeche keli</i> , Radish- <i>mulo</i> , <i>Knol khol-knab</i> , yellow pumpkin- <i>dudhi</i> , bitter gourd- <i>karati</i> , etc) which one can say is a substitute to fried fish on a vegetarian day, the Hindus use this concept which many may find as a wrong belief or superstition, however, technically it is a lay off after a high protein and fat meal.
<i>Teflam</i>	<i>Teflam</i> (<i>Xanthozylum rhetsa</i>) is a unique kind of herb with a peculiar astringent flavour used to camouflage the strong fishy odour of fish preparations which uses mackerels, sardines, <i>kalli</i> as well as in the vegetarian delicacy of mixed vegetables called <i>khatkhate</i> and <i>dudhyachi bhaji</i> . This fruit is usually used fresh or in the dried form mostly in Hindu cuisine.

3. Hindu Goan Desserts

Traditionally many, Goan Hindu Desserts were prepared using coconut milk, probably due to the availability of coconuts in abundance along the coastal belt. This milk contributes to the unique flavour instead of mammalian milk and this can be considered as a viable option as a non-dairy milk source for

those with lactose intolerance. Traditions have been passed down the ages.

Hindu Goans first offer vegetarian food prepared on any auspicious occasions to God as *naivadya*, especially any dessert. *Atval*, *dudholi*, *doodh peda*, *elappe.fov*, *chayo boyo*, *kanna*, *dalichi kapaam*, *khajem*, *khichadi*, *ladu*, *manganem*, *muthlim*, *satva*, *nevreo*, *patoleo*, *payas*, *pole*, *panpole*, *poss*, *revdeo*, *sakarbat*, *dhonas*, *sanjo* (*goad/ tikhat*), *banana halwa*, *shevyanchi kheer*, *shirvoleo*, *soji*, *sukur unde*, *tavsali*. The well-known deserts include Cucumber cake (तवसळी), Banana *halwa* (मयडोळी केळ्याचो हाल्वो), Bottle Gourd *halwa* (कोकणदुधयाचो हाल्वो), Dry roasted green gram dal /polished dal sweet (मुगाचें कणण), Jackfruit cake (धोणस), *Khajiche laadoo-laddus* prepared using various nuts, coconut and jaggery, *Mangane* (मणगणे) prepared using sago and *chana dal*, jaggery, coconut milk, *Mulka* (मुळका)—deep fried balls using ripe bananas, coconut, jaggery, cashew nuts and salt, *Kuleeth pithi* (कुळीथ पिठी)-horsegram flour, jaggery and coconut milk porridge, *Muthlyo* (मुठल्या)- steamed rice flour or *rava* dumplings stuffed with coconut and jaggery, *Patolyo* (पातोळया)-Steamed stuffed rice flour preparation, *Payas* (पायस)—prepared using pounded rice cooked in milk, *Pedhas* (दुधाचे पेडे), *Pos* (पोस) type of a pudding prepared using colostrum of newly delivered cow/buffalo, Potato *halwa* (बटाटयाचो हाल्वो), *Puran poli* (पुरणपोळी), Red gram *halwa* (डाळी कापा), Sweet rice (साखरभात), Steamed Rice noodles (शीरवळ्या), Sweet potato *neuryos* (कणगाच्यो नेवर्यो) and Sweet potato *kheer* (कणगाची खीर) (Fatima, 2011; Usgaonkar,2001).

Wheat vermicelli *kheer* (गवाची खीर), traditionally the fine noodles would be made at home and during free time, the members would be engaged and would require a flat stone for rolling the dough to obtain fine extruded noodles which would be sundried.

It is also worth to mention that Hindu cuisine would use sugarcane jaggery as a sweetening agent whereas catholic cuisine used palm jaggery and continue to use it in some authentic recipes like *pinaca* and *Bol*. In any Goan preparation, the souring agents commonly used include *kokum*, *bimblim*, *tamarind*, hog plums, tomatoes, and vinegar (used by Catholics). The choice of souring depends on the recipe demand.

Most of these delicacies are getting lost probably due to the passing of non-authentic adulterated recipes to the next generations or may be due to the availability of wider options of ready-to-eat snacks and desserts. It is worth appreciating all those who have penned down these recipes and preserved them for the use of techno brats.

GOAN CATHOLIC CUISINE

Goan Catholic cuisine in Goa is a fusion of Goan Hindu and Portuguese cooking styles. Vinegar (made from the toddy of local coconut trees) is mostly used to give the zingy taste or souring taste to the non-vegetarian dishes. New recipes entered going Christian cuisine via the Portuguese yet very few remained in their original form recipes were modified to suit available ingredients climate or local tastes The Portuguese carried with them some ingredients from their country but local substitutes had to be introduced one supplies ran out for instance almonds or walnuts got replaced by cashew nuts and coconut. Cheaper and easily found jaggery made of *sur* or toddy replaced sugar used in Europe. Rice flour substituted imported wheat flour (Fatima, 2011; Lourdes, 2004).

Table 1: Popular Goan Catholic dishes

Dish	Description
<i>Ambot tik</i>	A spicy and sour curry prepared with fish
<i>Bacalhau</i>	dried and salted codfish cooked in onions, chickpeas, potatoes using spices and condiments
<i>Balchão</i>	A pickle made with prawns/shrimp
<i>Cafreal</i>	A masala marinate is mostly used for chicken or fish made from coriander leaves, green chillies, and other spices and is the most relished delicacy of other religions as well.
<i>Caldo verde</i>	simple soup served on festive occasions with mashed potatoes, garlic, onion, spinach-like vegetable called vauchi bhaji, with a dash of olive oil, salt and Chouriço (optional)
<i>Canja de galinha</i>	A type of chicken broth served with rice and chicken.
<i>Chamuça</i>	A Goan/Portuguese derivative of the samosa
<i>Chouriço</i>	A spicy pork sausage
<i>Crab xec xec</i>	Type of gravy made with roasted grated coconut, onion, <i>garam masala</i> , and pieces of crabs
<i>Croquettes</i>	Fried minced beef rolls and is a common snack
<i>Feijoada</i>	A stew brought by the Portuguese. It is made with meat (beef or pork), Beans, onion, green chillies, black pepper and cabbage
<i>Rissois</i>	prawn puffs
<i>Roast beef and beef tongue</i>	Popular entrees at Goan celebrations
<i>Ros omelette</i>	An omelet drowned in spicy chicken or chickpea gravy and served with <i>pão</i> (Portuguese-Goan bread)
<i>Samarein chi kodi</i>	Goan curry made with fresh and dried prawns using spices
<i>Sanna</i>	A variant of <i>idli</i> , rice-based which is fermented with coconut toddy
<i>Solantule kodi</i>	A spicy coconut and <i>kokum</i> curry
<i>Sorpotel</i>	A very spicy pork dish with tempero, vinegar, and even local palm brew, <i>feni</i> eaten with <i>sannas</i> or <i>pão</i> (Goan bread – spelled the same way as in Portugal)
<i>Vindalho</i>	A spicy curry traditionally made with pork. The name is derived from the Portuguese term for a garlic and wine (<i>vinho e alho</i> or <i>vinha d'alhos</i>) marinade. Contrary to popular versions made outside Goa, a traditional <i>vindalho</i> does not contain any meat besides pork. It also does not contain any potatoes nor is its name related to <i>aloo</i> (potato)
<i>Xacuti</i>	Type of gravy made with roasted grated coconut and pieces of chicken or lamb

GOAN RECHEIO MASALA

Just like the Goan *Hindu garam masala* immensely contributing to its vegetarian and non-vegetarian gravies, Catholic *recheio masala* is an integral part of Goan Catholics made using various spices and condiments with vinegar used to grind and preserve it for long. This masala is unique in its preparation which enormously contributes to the world-famous *recheio* mackerel and not all can get the same delectable flavour despite the standardized recipe.

GOAN CATHOLIC DESSERTS

Most of the catholic deserts use eggs as an essential ingredient along with cereals like rice and maida loaded with sugar. The traditional desserts are Bol, doce, arroz doce, dodol, bebinca, bolinhas, aale belle, dedos de damas, perado, caramel pudding, cakes, the imprint most of them is left by Portuguese (Fatima, 2011; Lourdes, 2004).

Table 2: Goan Catholic Desserts

Dessert	Description
<i>Arroz doce</i> (sweetened rice custard)	A Portuguese derivative of <i>kheer</i>
<i>Bebinca</i>	A multi-layered baked pudding traditionally eaten at Christmas (awarded Geographical Indication)
<i>Bolo</i>	It is a desert made using coconut, cashew nuts, sugar, eggs and wheat flour
<i>Dedos de Damas</i>	Caramelised dessert made with sugar, egg yolks and Cashew nuts /almonds.
<i>Batica</i>	Batk is a very popular Goan coconut semolina cake made all year round and Especially for Christmas.
Caramel pudding	Steamed dessert prepared using milk, eggs, sugar and flavouring agents.
<i>Dodol</i>	It is a dessert with black jaggery made of coconut palm and flour
Bolinhos	Goan Coconut traditional Cookies with grated fresh coconut, <i>Rawa</i> (semolina), Sugar, Ghee, <i>Maida</i> and eggs with <i>Elaichi</i> .
<i>Alle belle</i>	Pancakes using batter of maida and eggs, stuffed with coconut and jaggery
Mixed fruit cake	Baked using soaked fruits in Rum with All-Purpose Flour, Fresh ground nutmeg, Ground Ginger, Clove powder, Cinnamon Powder, Butter, Brown sugar, Eggs, Almonds, Cashew Nuts and Sugar Caramel or molasses
<i>Pinaka</i>	A delicious easy to prepare cylindrical shaped sweet from roasted and powdered parboiled rice, jaggery and coconut with a dash of cardamom

<i>Serradura</i>	also known as sawdust pudding, it's a dessert originated in Portugal and is a simple combination of whipped cream and crumbled Marie biscuit.
<i>Patoleo or patoli</i>	steamed delicacy of turmeric leaves are used as a covering for rice coating filled with cooked mixture of coconut, jaggery and <i>elaichi</i>
<i>Perado</i>	Guava cheese made using deseeded guava pulp, butter, sugar and cashew nuts.

GOAN PICKLES AND PRESERVES

Goa experiences heavy rains, which deprives many from visiting local markets or at times specific foods are not available and thus preparation for pickles and preserves is a much-practiced tradition. Right from vegetables, roots, tubers, and fish are being preserved to use during the lean period. Some of such pickles/ Preserves are -Stuffed mango pickle (भरील्ल्या तोरांचे लोणचे), Sweet raw mango pickle (तोरांचे गोड लोणचे), *Bimbli* /pickle (बिम्बलाचेंधकरमलाचे तिखटधोड लोणचे), Lemon pickle (लिंबाचे लोणचे), Mango *halwa* (आम्याचो हाल्वो), Pineapple *halwa* (अनसाचो हाल्वो), Sweet potato fritters (घोस), Jackfruit chips (तळीलले घरे), Dried Jackfruit pieces in brine (साला)-used in the month of *shravan* during lean season (The lost recipe), Dried Drumstick flowers (फुलां), Rice fritters (घोस), Sago fritters (साबूदाणा सांडगे), Spicy *poha* (तिकशे फोव), prepared using flaked rice in jaggery with green chillies, groundnuts and special type of asafoetida called *Shankar chaap hing*)

- Spicy *sev* (*Tikat shev* exclusively made using a variety of chilli called *tarvotti* in Portuguese means someone in merchant navy or cruise liner, probably the chilly came with Portuguese to Goa), Goan *Papad* (made using variety of chilli called *tarvotti mirsaang* and *Shankar chaap hing*)
- Ash Gourd fritters (*Kunvalyacho Voddio*), made of grated ash gourd with urad dal with spices and condiments and either added to gravies or eaten fried or used to prepare an accompaniment called *kismur*.
- *Goan Chakli*, there are lot of varieties made influenced by neighbouring states but traditionally they were made using rice flour, *urad dal*, tamarind, chilli powder, and other spices and condiments.

GOAN FENI AND SUR

Goa is known for its cashew and coconut generated alcohol, a known fermented product. Cashew *feni* (*kaju feni*) is a triple-distilled spirit. The first distillate of the fermented *neero* is known as *urrack*, about 15% alcohol (30 proof). *Urrack* is then mixed with *neero* in a proportion determined by the distiller, and redistilled to give a spirit called '*cazulo*' or '*cajulo*' (40-42% abv). *Cazulo* is again distilled with *urrack* to give a high-strength spirit called *feni* (45% abv). *Cazulo* is generally sold as '*feni*', as the spirit is considered too strong of an alcoholic beverage for consumption. All cashew *feni* now available is double-distilled. In 2016, the Goa government initiated a process for *feni* to be recognised as a heritage brew outside of the state. Coconut *feni* (*Maddachi sur*) is distilled from fermented toddy (*sur*) from the coconut palm (Mid-Day, 2016).

TRADITIONAL FERMENTED FOODS CONSUMED IN GOA

Spontaneous fermentation facilitating bacterial and yeast fermentation are the most commonly used foods in Goa (Fatima, 2011). Bread (yeast), *Heet (urad dal)*, *sanna* (using toddy for fermentation), vinegar, brined pickles and wine are the common fermented foods. *Heet (urad dal)* and *sannas* are steamed using traditional containers, today we see the traditional name is forgotten and this recipe is commonly known as *idli* (Fatima, 2011; Usagaonkar, 2001). It may be remembered that dietary staples are rice and are used in many preparations including coating for shallow frying.

GOAN FOOD DURING SICKNESS

A light semi-solid or liquid diet is usually recommended for gastric upset or tooth extraction and a light *kanjee* called as *pez* is served in Goa till date inclusive of febrile condition. The fact is that during fever a high-energy diet is advised however owing to poor appetite, food is not elaborate. In Goa a brined raw mango slice with *pez* is served to fever patients and the same *pez* on the first few days is eaten by families during mourning.

THE UNIQUE FAIR (JATRA) AND FEAST (FEST) FLAVOUR OF GOA

Goa is known for its temples and churches and its annual fairs and feasts. No such occasions would be complete without the kiosks selling the famous roasted peanuts (भिकणा), roasted chickpeas (चणे), sugar dolls (साखरेची बावली), Ginger *barfis* (आल्याची कापा), *Shev* (शेव), deep-fried chips (म्हाना) of local tuber called as *madi*, sugar coated or jaggery coated sticks (खाजें) and *Revdyos* (रेव्ढ्यो). *Khaje* (खाजें) is made of chickpea flour and coated with jaggery and ginger (awarded Geographical Indication) and deep-fried.

Similarly, *Revdyos* as locally known are Caramelized jaggery (रेव्ढ्यो) coated with sesame seeds, such outstanding logical recipes they are easy to handle, non-messy foods which are today replaced by chocolates with added preservatives and artificial flavors and were bought in large scale by the visitors, local and those settled in other states. These annual occasions would be celebrated with great fervor and pomp in winters which affect the basal metabolic rate. Further, these festivals and fairs were usually held for a week calling for large gatherings with overnight visits and stays, so these were energy foods with carbohydrates, plant proteins, and fats to withstand the cold temperature. This uniqueness is missed by migrated Goans.

TRADITIONAL FESTIVAL FOODS

In essence, traditional foods are those whole and ancient foods that have been eaten for centuries and even millennia enjoyed by ancestors. They are simple, naturally grown or raised, nutrient-dense, thoughtfully prepared. Goa during the seasonal festivals like Diwali, Ganesh *Chaturthi*, and Christmas get holistically engaged in unique preparations. They are relished and are referred to as occasional festival delicacies.

1. Diwali- The tradition probably only seen in Goa on Diwali day is stomping of wild bitter gourd (*karit*, *Cucumis trigonus*) under the left toe in front of the idols and family deity by the elderly, thereafter

tasting its pulp and then proceed to relinquish the authentic delicacies (फराल). Similarly in some villages, people drink bark concoction of *satvin* (*Alstonia scholaris*) on Diwali day. With the influence of neighboring states like Maharashtra and Karnataka, Goans also started preparing dry sweets such as *karanji/Nevri*, *laddoos*, *chakli*, *shankarpali*, *shev*, *chivdas* during Diwali, otherwise these are prepared exclusively during Ganesh *Chaturthi*, owing to it being a major Hindu festival.

2. Ganesh Chaturthi (Chavath)- Ganesh *Chaturthi* is the major Hindu festival. This festival immensely pays gratitude to Mother Nature right from decoration to the food platter. Plant Biodiversity is to its best in Goa in this divine month of *Bhadrapada* with a completely vegetarian menu without onion and garlic, kind of *satvik* food with fresh coconut being a mandatory ingredient. Coconut enhances the flavour, thickens the gravy, and nutritionally is rich in dietary fiber (Longvah et al., 2017). Most of the preparations include leafy and other vegetables, cereal, pulses, fats, oils, sugar, and jaggery.

Hartalika (Tay), *Chaturthi* (chavath), *Panchami* (pancham) are the three most important days of Ganesh Puja. Cashewnut *laddus* (बियां लाडू) are usually prepared during this festival. For the first day of *Hartalika*, salt-free meals are prepared as the legend says that goddess Parvati was expecting and had a preference for unsalted food preparations.

Day 1 – Hartalika thali- This *thali* includes all food groups such as cereals, pulse, vegetable, milk, nuts, fats and oils, sugar, and jaggery. The traditional *thali* items are mixed vegetable (*rishi bhaji*) with seasonal leaves such as pumpkin leaves, colocasia leaves, drumstick leaves, cassia tora, white amaranth leaves (any 5 types are used) with grated coconut, green chillies added with jaggery/sugar; *patoleos* (turmeric leaves with its loads of antioxidants used as wrapping and flavouring material, covering made either of rice flour / *rava* / wheat flour and the stuffing of fresh coconut , grated jaggery and some dry fruits; shallow fried bitter gourd slices, vermicelli *kheer* or *rice payas* as a dessert, boiled rice, and dal.

Day 2 –Chaturthi thali- A balanced lactovegetarian meal with plant proteins, boiled white rice, *varan*, *puri*, *ambaddyachi karam* (preparation using hog plums and coconut), sprouted *moong* gravy, colocasia Vegetable (आळवाचें तोणाक), steamed *modaks* using rice batter with jaggery coconut filling or deep fried using wheat flour/ *maida* covering with *chana dal* jaggery filling (*puran*), *navyacho payas*— the first rice paddy grains are added after performing religious *puja* with a prayer that the entire region be blessed with the best Paddy crop. Paddy grains are also offered as the *Naivadya*.

Day 3 – Panchami thali- This *thali* includes root and tuber preparations (11-32 types) called *khathkhate* (खतखतें), *suyo/doney* (सूयो/दोणें) (fermented *idlis*, batter is poured into conical shaped jackfruit leaves and steamed), dried green /white peas in gravy(चण्याचे तोंणाक), *tavsali* (steamed after mixing grated cucumber, jaggery, coconut, cardamom powder, salt, ghee), *kellyacho halwo* (केळयाचो हालवो) or any other sweet.

3. Christmas- Christmas in Goa is noticeable by lanterns and stars and tons of savouries and sweets on the streets (steamed, deep fried or baked). Deep fried sweets include *nevrees*, *kulkuls* which are made of flour and sugar rolled on the back of folk and deep fried. Other popular sweets are made using rice flour, coconut, semolina, *chana dal* and jaggery. A few like *bebinca*, cakes, *bolinhas* and *batika* contain

egg and are baked. The famous *Ghoss* is made up of tender coconut strips cooked in sugar syrup (Kamat, 2004).

Goa is also known for its famous Christmas rum cake. The other sweets prepared include *cocada*, *pinaca*, *batika*, *bebinca*, popular *Vodde* and *mandares* prepared using pumpkin and rice ground to a paste and deep-fried. Today *mandares* are hardly made in Goa.

Christmas lunch include a soup as a starter, followed by a fish in mayonnaise or baked fish or fish *balchao*, meat (roasted pigling or roast pork), chicken dish (*xacuti*, *guisados* or *assado*) and pulao garnished with olives, cashew nuts and slices of tender mango in brine (Fatima, 2011). *Sannas* and *pao* are also served.

TRADITIONAL GOAN MUSLIM FOOD

Muslim diet is based both on the *Quran* and the *Sunnah* which are the recorded words of the Prophet Mohammed. Swine flesh is prohibited but seafood is allowed. Except for fish, it is mandatory to slaughter an animal by cutting the jugular vein or by piercing the hollow of the throat using a sharper knife while uttering the name of Allah, a procedure termed as *halal* (Lourdes, 2004). Alcohol is forbidden and drinking is considered to be a great sin while wine is preferred. Islam enjoins that no food be wasted even leftovers are served and eaten. Fasting is enjoyed by all the faithful during *Ramzan*.

Day-to-day meals of Goan Muslims consists of rice, curry fish or meat (Fatima, 2011) where the curry is made of coconut to which chilli, turmeric, garlic, cumin and coriander seeds. Fried fish is cooked in a similar way like Hindus. The Muslims believe in eating food in a seated posture as per *Quran* recommendations that person should not eat to fill the stomach. Traditional *biryani* is prepared and the usual dessert is vermicelli *kheer* using a lot of *khoa*, sugar and dry fruits.

FOOD DURING PREGNANCY AND LACTATION

As per the Goa traditions, pregnant women are kept away from food that could harm her or her baby's health. Foods such as papaya, watermelon, shellfish, prawns, oysters, mussels, crabs, and clams are avoided. She is given special delicacies in the 5th month or 7th month when a special ceremony called *fullam* is practiced by the Hindus and she is offered sweets prepared using either milk or cereal and pulse combination.

A lactating mother is given a dessert prepared with rice, jaggery, coconut milk, fenugreek seeds, and added ginger. This is considered as a galactagogue recipe, similarly, *ragi* porridge (*satva*), semolina based dessert, fish, and *methi* vegetable with garlic is also served to a lactating mother.

The Catholic families recommend the use of non-vegetarian soup, chicken preparation, *doce bhaji* (Bulgar wheat based dessert), and *porto* wine is given to a lactating mother.

Muslims recommend chicken-based recipes and *halim* seeds, semolina porridge cooked in jaggery for pregnant and lactating mothers.

SHIFTS IN FOOD CULTURE OF GOA

Portuguese rule created a culinary gap between Hindus and Christians. They brought radical changes

in the governed food culture by introducing new plants, foodstuff recipes, and food habits. Today there is harsh criticism that the traditional food of Goa is being lost to the host of cuisines slowly becoming popular along the coastal belt. Portuguese influence on Goan Christian food is significant and gave rise to what is now called a Fusion Indo-Portuguese cuisine, which is a fusion of many cuisines (Lourdes, 2004).

Portuguese recipes such as *bacalhau* (dried and salted codfish), Portuguese *chorizo* (pork prepared with wine and a few spices) have now been transformed to Christian Goan food such as Goan *Chorizos* (spiced masala pork dried in cattle gut) and their curries use a liberal sprinkling of toddy vinegar.

A Hindu Goan preparation such as (prawn *humann*) differs from a Christian Goan prawn curry (*sungtachi kodi*) or a stuffed crab preparation as the latter is influenced by ingredients introduced by the Portuguese.

Portuguese also introduced Goa to oven-baked wheat bread such as *pao* (soft buttery interior with golden crust), *poyie* or *bhakri* (flat brown bread), *katreanche pao* (bread with 4 corners), *undo* (with a cut in the center) and *kakonn* (shape of a bangle and thought as purely of Goan origin), toasts or rusks either plain (*fati*) or sweet (*goad fati*) (Lourdes, 2004).

In addition to undernutrition, shifts in diet and lifestyle patterns have led to increased risks for non-communicable diseases (NCDs). Comprehensive National Nutrition Survey, 2016–2018 findings reveal that children, adolescents in Goa are suffering from the dual burden of malnutrition and it is apparent that nutritional factors play an important part concerning the pathogenesis of the prevailing disease profiles at both ends of the spectrum. This greatly increases the ambit of nutritionally adequate diets to maintain good health. Certain villages of Goa were known to cultivate *ragi* and horse gram for consumption, for some decades this cultivation is lost or rather forgotten and needs revival.

So, it makes sense to modify the nutrient composition of some traditional foods to make them more appropriate for the 21st century by eliminating or reducing certain ingredients like sugar or jaggery or an excess amount of ghee or oil or by enhancing the nutritive value of a product by addition of a healthier food group. There is a need to newly create cuisine to catch up with an increasing concern among many Goans overeating habits and health, which falls in line with the global health trend.

SUGGESTED RECIPES UNDER EAT RIGHT MOVEMENT

Nachnyache satva/Tizaan (Ragi Porridge)

This recipe is rich in minerals like calcium, phosphorus, proteins, with adequate amounts of carbohydrates and fats, all contributing to energy (Longvah et al., 2017). It is highly recommended for all age groups including pregnant and lactating mothers.

Khathkhate (mixed vegetable preparation)

Can be relished as it is or mixed with rice or with *chapatis/Rotis*. This recipe is rich in minerals like calcium, phosphorus, vitamins, proteins, with adequate amounts of carbohydrates with more complex carbohydrates, all contributing to energy (Longvah et al., 2017). It is highly recommended for all age groups including pregnant and lactating mothers.

Goan Hindu vegetarian thali

A standard menu for lunch include Rice, *Vaddyancho ros/saar/varan*, Cowpea gravy (*alsa andyache tonnak*), amaranth vegetable (*Tambdi bhaji*), kokum curry (*solkadi*) and Shallow fried root/tuber (*talilli kaapa*) and banana custard (*shikran*).

Goan Catholic non-vegetarian thali

Rice, fish curry, Chicken cafreal with bread, salad, Fried fish, and caramel pudding.

Goan Muslim Thali

Rice, fish curry, Chicken *sukha* with bread, leafy vegetable/salad, Fried fish, and *kheer*.

Goenchi Goan thali

The *thali* comprises all the basic food groups for any of the cuisines cereals, pulse, vegetable and fruit, milk, fats, and sugars.

Other traditional Goan foods that suggested for promotion include the *rishi bhaji* with seasonal leaves such as pumpkin leaves, colocasia leaves, drumstick leaves, cassia *tora*, white amaranth leaves (any 5 types are used) with grated coconut and spices, steamed *Patoleo* or *patoli* (with less sugar), fermented foods *heet* (*urad dal*) and *sannas* (toddy fermented), *Khathkhate* (mixed vegetable preparation), and assorted steamed or baked fish, chicken and meat items. Other dishes like *Kuleeth pithi* (कुळीथ पिठी) and *Pinaca* can also be promoted for Eat Right Movement

The Goan cuisine and its foodiness can be best summarised by a *konkani* poem.

जल्म मेळ्चो तर तो गोयांत
 आम्याच्या आनी माडांच्या म्हज्या गोमट्या गोयांत
 जेवण कशें आसचें ?? !!!
 सोमाराक.....
 सुरय शीत...
 वरण आनी कडी...
 भाजी, लोणचें, पापड...
 बटाटाच्यो फोडी.....
 मंगळाराक.....
 तळिल्ली सुंगटा...
 उकडें शिताबरोबर करबटाचें हुमण...
 भरिल्ली आमली...
 फस्ट क्लास जेवण.....
 बुधवाराक.....
 वालांची भाजी...

खुटी कडी
 तळिल्लो बांगडो...
 वेल्ल्यांचे सुकें...
 शिताबरोबर हुमणात आमाडो....
 ब्रेस्ताराक.....
 अळसांद्याच्यें तोंडाक...
 ओडयांची नाल्यार पापडाची किसमोर...
 शिताबरोबर मुसरादाची शीर...
 आनी शेवयांची खीर.....
 शुक्राराक.....
 शिताबरोबर दाळिचो रोस...
 सुकें गालम्याच्यें...
 भरिल्ल्यो माणक्यो...
 तोंडाक कालवांच्यें.....
 शेनवाराक.....
 मुळ्याची भाजी...
 उकडें शीत...
 भाजिल्लो सुको बांगडो...
 तारल्याच्यें धबधबीत.....
 आयताराक.....
 गरम गरम शागोती...
 आनी तळिल्ल्यो शिनाण्यो...
 शिताचोय इल्लोसो डोंगोर...
 कडेन तिस-यांचे डांगर....
 जोर केन्ना आयलोच जाल्यार उकडे तांदळाची पेज आनी तोराची शीर...

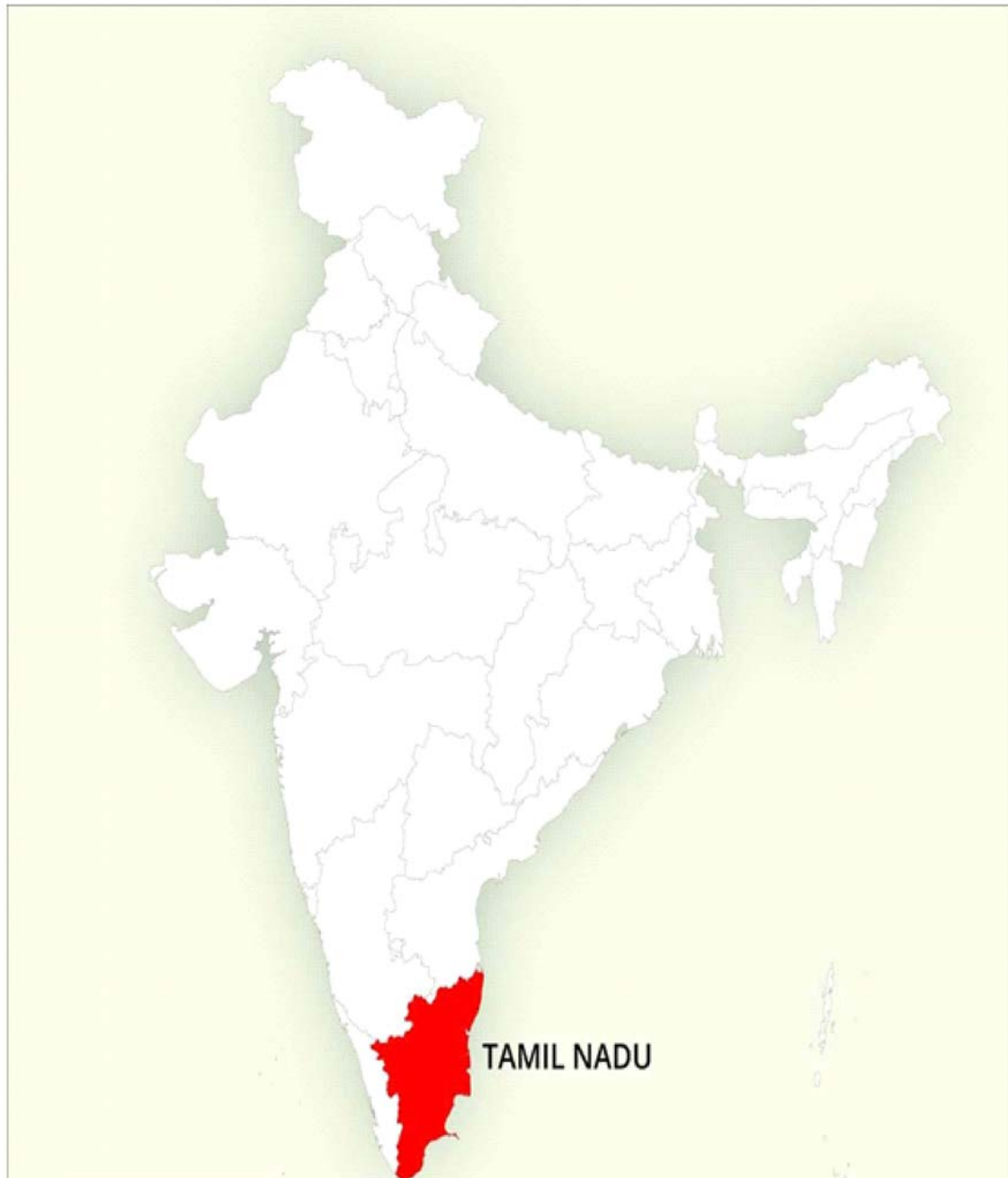
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UNDERSTANDING THE FOOD CULTURE/ NATIVE FOODS OF TAMIL NADU

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ABSTRACT

Food anthropology is the study of importance and role of foods in a specific community with reference to its history and geography. Food plays a significant part in human evolution and so in Tamil culture. In this article, the food culture of Tamil Nadu was studied using the review of literature. From ancient to modern times, the food practices of the people of Tamil Nadu, varied across different geographical locations. The traditional food preparations of Tamil Nadu, its eating practices and the ancient vessels used in cooking offer a plethora of health benefits to the humans. The state of Tamil Nadu has a rich agricultural heritage. The high nutritional profile of the abundant traditional rice varieties can promote nutritional security in India. Also, the state has its own speciality produce for different seasons of the year. Being a land of varied cultures and religions, the food culture followed is diverse across different festivals and religions. Hence, this study shows that it is important to create awareness about the inclusion of the traditional foods of Tamil Nadu, its preparation and eating practices to help mitigate nutritional insufficiency in humans.

INTRODUCTION

Tamil Nadu also known as *Tamilakam* is situated in the South-Eastern tip of India and has recorded human habitation since 15000 BCE to 10,000 BCE and was ruled by several dynasties such as the *Mauriyans, Kalabhras, Pallavas, Cheras, Cholas, Pandyas, Marathas, Poligars, Nizams and Nawabs*. The incursions of Muslims armies from the North-Western parts of India led to gradual decline of these

ancient dynasties by 14th C and later the influence of French Colonies and the Britishers, which constituted the Madras Presidency in the 18th C, they have greatly influenced the culture, cuisine, literature and languages of the state.

The present state was found in 1968 post India's Independence. Evidence from both archaeology and literature speaks of flourishing exchange of goods from the South Indian port cities of *Puhar* and *Muziris* with foreign traders from Greece (*Yavanas*), Rome, and then Arabs post 2nd CE and East Africa (*Auxumites*). The state has influence of several religions such as Jainism, Buddhism in earlier eras and later the Hindu sects Shaivism and Vaishnavism became dominant.

Over 70% of the population is engaged in agriculture for their livelihood. Rice is the major crop and the state is the largest producer of banana and tapioca, second largest producer of mangoes, coconut and groundnuts and a major producer of turmeric in the country. Other principal food crops such as maize, jowar, bajra, *ragi*, bengal gram, black gram, green gram and horse gram are grown here. Tapioca, drumstick, onion, tomato, brinjal and ladies finger are the important vegetables grown (Department of Horticulture and Plantation Crops, Tamil Nadu, 2020).

TRADITIONAL RICE VARIETIES OF TAMIL NADU

Local rice varieties such as *Red and black Kavuni*, *Kichili samba*, *Seeraga samba*, *Poongar*, *Garudan samba* etc. have been associated with many health benefits. This was confirmed by scientific studies and nutritional profile of the traditional colourful and aromatic rice varieties have a higher nutritional profile than white rice. Focusing more on these speciality rice varieties and its by-products not only save them from becoming extinct but also promotes nutrition security of the country, as they are a good source of vitamins, minerals and polyphenols (Rathna et al., 2019). Coloured rice varieties get their colour from anthocyanin deposits, which are a great source of phytochemicals and antioxidants. Local health benefits and rice varieties are mentioned below:-

1. ***Red and black Kavuni*** – Possess anti-microbial activity
2. ***Kichili samba*** – Improves physical strength and complexion
3. ***Seeraga samba*** – Regulates excess *vata*, easy to digest and controls flatulence.
4. ***Milagu samba*** – Contains selenium, fights cancer and lowers cholesterol.
5. ***Kaivara samba*** – Lowers blood sugar
6. ***Poongar*** – Consumed by women after puberty and is believed to avert ailments associated with the reproductive system.
7. ***Kattu yanam*** – lowers blood sugar and imparts strength.
8. ***Mappillai samba*** – It has hypocholesterolemic and anti-cancer activity. Improves fertility in men. This variety from Tamil Nadu has the highest anthocyanin content compared to other red rice varieties of other countries.
9. ***Garudan samba*** – It contains a range of bioactive compounds that provide hypocholesterolemic, anti-arthritic and heart and liver-protective benefits.

Source: (Rathna et al., 2019) & (Balasubramanian et al., 2019).

FOOD CULTURE OF TAMIL NADU

Sangam literature, the earliest texts in Tamil, describes the landscapes of Tamil Nadu as five distinct regions based on their geography and inhabitants:-

1. ***Kurinji*** – Hills
2. ***Mullai*** – Forests, pastor or woodlands
3. ***Marutham*** – Water bodies with wet fields and vegetation
4. ***Neytal*** – Sandy coastal areas
5. ***Palai*** – Dry, arid areas

Inhabitants of *Marutham* ate white rice with a thick pasty curry made from the flesh of crab and ridge gourd along with meat, spinach, vegetables, puffed rice, pulses, cereals, legumes and pickles. People of *Kurinji* lands ate tubers and honey. Some of the old paintings depicted a '*kuzhambu*' made from jackfruit seeds, raw mangoes and tamarind extract, eaten with bamboo rice and buttermilk. Another Tamil literature shows a recipe where *varagu* rice, lentils, tamarind pulp and huge bean seeds are cooked together. From these evidences of the *Sangam* literature, common man of those days had millets like *varagu*, *samai* and *thinai* as the staple and at times had some delicacies prepared. *Agananuru* depicts a recipe of tender pomegranate seeds sautéed in ghee, given as a dietary supplement to vegetarians. *Paalchoru* (milk rice) and *puliyogare* (tamarind rice) have their origin during the ancient times. Each region followed different styles of cooking. Direct fire cooking (termed as '*vakkuthal*') was seen in *Kurinji* and *Mullai* landscapes, whereas, frying and sun – drying were common among the people of *Neytal* and *Palai*. Pickling was more common in the dry, desert lands. People living in the agricultural lands of *Marutham*, cooking methods like steaming and boiling were followed which later changed into extensive cooking methods (Yuvraj, 2019).

Tamil Nadu cuisine comprises both vegetarian and non – vegetarian dishes. Every family eat 2 to 3 main course meals in a day consisting of important staple rice, coupled with varied accompaniments such as *kootu* (vegetable with dal), *poriyal* (sautéed vegetables), chutneys, pickles, *appalam* (crispy wafers), and desserts. Tamil cuisine is known for curries like *sambhar* (curried vegetable dhal), *rasam* (tamarind soup) and *kuzhambu* (tamarind based gravy).

Tiffin is the word associated with a light food taken for breakfast or dinner. Common breakfast dishes of the Tamil people are *Idli* (steamed cake of rice and black gram), *Dosai* (crispy crepe), *Vada*, *Pongal* and *Upma* eaten along with *sambhar* or chutneys. Chutney is a sauce or a relish made from different ingredients such as coconuts, peanuts and/or vegetables etc. with spices added to them. In Tamil Nadu, thicker form of the chutney called *thogaiyal* is prepared from medicinal plants and different vegetables. Tamil Nadu is known for its filter coffee, which is made with coffee decoction.

Tamarind is used in the curries to add tangy flavour, whereas both green chilli and red chilli and peppercorns are used to bring hotness to the dish. Curd is either taken along with the meal or is added to

many dishes to neutralise the effect of chilli and soothe the stomach. Spices such as mustard, garlic and cumin are used for tempering and seasoning of the foods (Akmal & Suneetha, 2016).

Tamil cuisine is divided into four major divisions based on their techniques and use of ingredients.

1. **Chola Nadu** which included the delta regions of Tamil Nadu and were the largest producers of the rice and several rice based recipes such as *puliyodhare*, *sambhar sadam*, *podu sadam* and *sevai* (rice vermicelli) are traditional dish of this region (*sadam* means rice). Tanjore region is known for its rice-based dishes and Chidambaram and Kumbakonam are famous for filter coffee.
2. **Pandya Nadu** comprises the Chettinad region comprising Karaikudi and its adjoining areas are famous for its unique spicy dishes and traditional foods such as *Idiappam*, *uthappam*, *paal paniyaram* and *kari dosai* (meat spread on pancake). Madurai is famous for a highly nutritious drink called '*paruthi paal*' (cottonseed milk) which is rich in protein, essential fatty acids and sugars. Cotton Seeds used in this drink can cure stomach ulcers, maintain blood pressure, regulate menstrual cycle, act as an antioxidant and also cures cold and cough (Kumar, 2019).
3. **Kongunadu** region comprises the hilly areas of Tamil Nadu which are abundant in coconut, onions and groundnuts, use of these is reflected in their cuisines. Consumption of local millets such as *ragi*, horse gram and black gram is common. *Oputtu* (*puran poli*), *kola urundai*, *thengai paal* jaggery, *kashayam*, *arisi paruppu sadam* (Coimbatore special dhal rice) are some of the specialities. The famous '*Panchamritham*' sweet given as a *prasadam* (offering) in Palani Murugan temple is a fermented fruit mix made from banana, brown sugar, dates, jaggery, cow ghee, honey, sugar candy and cardamom. A study done by (Uma Maheswari et al., 2019) isolated cultivable bacteria from three collected samples of *Panchamritham* exhibited anti-microbial and probiotic activity. Since, there is no coastline in *Kongunadu* region is a land-locked region, people rely on freshwater fishes, mutton and chicken for non-vegetarian protein sources. A 2017 study has shown that freshwater fish production has grown tremendously in the last 5 decades in India, contributing to nutrition security (Barik, 2017). Freshwater fishes are a great source of essential amino acids, calcium, vitamin A, vitamin D, and DHA (Paul et al., 2018).
4. **Nanjilnadu** region is surrounded by three major water bodies and thus the use of fish and coconut is a major part of the cuisine. Kanyakumari and its adjacent areas are famous for their *Nanjil* fish curry (Sharanya, 2017). *Puttu*, *appam*, fish curry are some of the signature dishes of this region (Ravishankar, 2015). The medium-chain fatty acids (MCFAs) and the fibre in coconut help to protect against atherosclerosis. Lauric acid, a component present only in coconuts and breastmilk, bears anti-microbial function (Akmal & Suneetha, 2016).

HEALTHY SPECIALITIES OF TAMIL NADU CUISINE WHICH CAN BE PROMOTED FOR THE EAT RIGHT MOVEMENT

1. **Koozhu** – Porridge of finger millets is an age-old Tamil recipe, which is commonly prepared in the month of *aadi* (Tamil month from July to August). *Ragi* is a rich source of calcium, dietary fibre and phenolic compounds. Consuming *ragi koozhu* can supply important amino acids such as leucine, isoleucine, methionine and phenylalanine that are deficient in other starchy cereals. *Ragi koozhu*

can normalize your body temperature during summer and prevents sunburn. With the presence of the amino acid tryptophan, it can control appetite and maintain body weight (Yuvaraj, 2019) & (Gull et al., 2014).

2. **Kozhukattai** – These dumplings are brought to Tamil Nadu by the trader merchants of East India. The *kozhukattai* make up a terrific appetizer with the goodness of dhal, coconut, jaggery and rice. This steamed food is light on the stomach with no oil, hence, a great food to keep the lipid profile under check (Yuvaraj, 2019).
3. **Appam** - *Appam* is a very old, conventional recipe of South India especially of Tamil Nadu, Kerala and also, Sri Lanka. It is low in calories that help in maintaining weight (Yuvaraj, 2019).
4. **Uluntha kanji** – The porridge of *urad* dal and jaggery is an extremely healthy conventional dish of Tamil Nadu. It helps to strengthen bones, especially the lower backbone of women. *Uluntha kanji* is usually taken with a dash of sesame oil, an excellent way to add good fats that helps in reducing LDL cholesterol (Yuvaraj, 2019).
5. **Puttu** – It is a breakfast dish made from steaming rice flour layered with coconut in a cylindrical mould. It is believed that eating *puttu* can give young girls the strength to bear the pain during menstrual periods (Yuvaraj, 2019).
6. **Kali** – *Kali* is a traditional dish made from rice flour with *urad* dhal flour (known as *uluntha kali*) or with *ragi* flour (*ragi kali*). Eating *uluntha kali* regularly has numerous health benefits to the human body by protecting the health of your gut, heart and kidneys. Black gram is an excellent source of fibre and proteins. It strengthens hair follicles, nerves, prevents constipation and blood sugar spikes. An excellent food for men with infertility issues, pregnant women and for lactating women (Yuvaraj, 2019).
7. **Pazhainya choru** – The leftover rice is fermented overnight by adding water, which helps in the development of good bacteria in the food. It is eaten with curd/buttermilk, shallots and green chillies. *Pazhainya choru* provides great strength to individuals who do heavy manual work. This food is a rich source of Vitamin B6 and B12. Promotes good digestive health and strengthens the immunity (Yuvaraj, 2019).
8. **Fermented foods** – *Idli* is a traditional breakfast of Tamil Nadu prepared from steaming the fermented batter of rice and black gram. Fermentation of the batter enhances the content of B-vitamins in them. *Dosa* is a famous South Indian type of thin pancake made from the same fermented batter of rice and black gram. These foods provide a good supply of proteins, calories and vitamins, hence, can be used as a dietary supplement to treat kwashiorkor and malnutrition in the developing world (Yuvaraj, 2019) & (Ghosh & Chattopadhyay, 2011).

TRADITIONAL BANANA LEAF MEAL AND ITS BENEFITS

Eating food from the banana leaf using hands and seated down is not only an age-old practice followed in Tamil Nadu but also a healthier one. When a person sits on the floor to eat, the majority of the muscles and nerves are activated. There is better blood circulation and flow of digestive juices in the

stomach. Vagus nerve performs better at this position, hence, the brain recognises the feeling of fullness more effectively and prevents overeating (Akmal & Suneetha, 2016). Plantain leaves contain a lot of polyphenols that can prevent cancer. It improves the taste and flavour of the food when served hot. This eco-friendly, chemical-free leaf stimulates appetite and the digestive fire, therefore helps indigestion. Banana leaf is also used in the treatment of toxicity, tiredness and gout (Hedge et al., 2018). It also contains traces of zinc and magnesium.

A typical banana leaf meal starts with the rice, varieties or plain topped with ghee. *Sambhar*, meat curries, vegetables are added separately for the rice. Side dishes include *Poriyals* (sautéed vegetables), *Varayils* (fried crisp), *Pachadi* (salad form or *raita*) along with *Appalams* followed by *Payasam* (milk vermicelli dessert). The second course is rice and *rasam*. The third course is curd rice with pickles. Curd is taken as a cooling for the body system (Yuvaraj, 2019).

BENEFITS OF ANCIENT VESSELS USED IN COOKING

1. **Kalchatti (soapstone)** – This inert cookware releases calcium & magnesium in foods, retains most of the nutrients and cooks food in lesser time (Kora, 2020).
2. **Irumbu kadai (iron kadai)** – Fortifies food with iron. A comparative study shows that pea paste cooked in an iron pot contained profoundly more iron than the counterpart (Xing et al., 2017).
3. **Man chatti (earthenware)** – In Ayurveda, cooking in clay pots promotes immunity. *Man chatti* is inert in nature and also increases the shelf life of the foods cooked in it. This cookware provides more colour, mouth-feel, taste and overall quality to the foods (Paranjape & Kulkarni, 2018).
4. **Sembu sombu (copper)** – This vessel is used to store water. A study reveals that storing impure water in copper vessels for more than 16 hours removed all the harmful bacteria present in it (Sudha et al., 2012).
5. **Vengala paanai (bell metal)** – Imparts intellect, improves appetite and purifies blood (Hedge et al., 2018).
6. **Eeya (iyya) sombu (metal coating of tin and its alloy)** – This vessel is religiously used to make *rasam* in olden days that is known to impart a characteristic flavour to it (Akmal & Suneetha, 2016).

TAMIL FOOD PRACTICES GOOD FOR HEALTH

1. **Ghee** – helps maintain/ repair the mucous lining of the stomach and prevents excess stomach acid secretion.
2. **Jeera water** – helps in digestion. Good for flatulence, dyspepsia, diarrhoea and cold.
3. **Jaggery** – Unrefined, contains most of the mineral salts.
4. **Medicinal rasam** – Eases stomach cramps and difficulty in breathing during cold.
5. **Turmeric** - Possesses antiseptic property, and is considered as a great medicine for cold, cough, stomach disorders and open wound (Akmal & Suneetha, 2016).
6. **Pirandai** – Rich source of carotenoids, triterpenoids and ascorbic acid. Possess anti-microbial and

antioxidant activity. It has been used in the treatment of weak bones, scurvy, cancer, haemorrhoids, peptic ulcer, etc. *Pirandai* can be used to make a range of Tamil dishes such as *Pirandai thuvaiyal*, *Pirandai dosai*, *Pirandai pickle*, *Pirandai vadai*, *Pirandai chutney*, *Pirandai kulambu*, *Pirandai thokku* and *Pirandai pappadam* (Tharshanodayan & Rohini, 2019).

7. **Thuduvulai** – *Solanum trilobatum* is used in the treatment of respiratory diseases. A study has shown that it can be effective in the management of allergic and inflammatory diseases (Ranjith, et al., 2010). *Thuduvulai* can be incorporated into traditional *adai* recipes to enhance the therapeutic value of the food (Vijayalakshmi et al., 2016).
8. **Sundakkai** – *Solanum torvum* contains antioxidants, vitamin B, ascorbic acid and iron. It exhibits heart and kidney – protective functions (Jaiswal, 2012).
9. **Manathakkali keerai** – *Solanum nigrum* possesses anti-microbial and antioxidant activity and can cure ulcers and protect the liver. It is used as a potential anti-cancer herbal medicine (Sudha et al., 2017).
10. **Vempampoo** – Neem flowers can reduce blood lipid levels and are also found to be protective against liver and breast cancer (Gbotolorun et al., 2008).

SEASONAL SPECIALITIES OF TAMIL NADU

1. **Nungu** – Palm fruit has a high content of antioxidants. It also exhibits anti-inflammatory properties and can cure skin inflammations. Ice apple is rich in vitamin C, iron, zinc, potassium, calcium, phosphorus, thiamine, and riboflavin. The fruit can prevent dehydration during summer. *Nungu* promotes digestion and prevents constipation. It is also the best snacking option for people with diabetes and obesity (Jerry, 2018).
2. **Pathaneer** – It is the sap or the juice extracted from the palm tree. It is a refreshing drink rich in vitamin C and some of the B vitamins. Important minerals such as sodium, potassium, phosphorus and magnesium are present that makes it a great drink during summer to replenish the electrolyte stores in the body (Jose, Deshmukh, & Ravindra, 2018).
3. **Panai Kizhangu** – Palm sprouts are composed of around 98% of dietary fibre in them, having a low glycaemic index. They also contain a good amount of enzymes that are usually not present in food. In a study by Khatri, Palmyra sprout flour was utilized in the production of muffins. Muffins containing 50% of Palmyra flour had the best score for sensory, nutritional and shelf life analysis, thus proving to be a viable option to produce value-added food products (Khatri et al., 2020).
4. **Coconut water** – This is an excellent natural drink that contains all the essential minerals such as sodium, potassium, calcium, magnesium, phosphorus and chloride required to treat dehydration and mineral loss. It is also a rich source of B vitamins. Coconut water can cure bladder infections, remove kidney stones and improve sexual virility (Reddy & Lakshmi, 2014).
5. **Mor** – Buttermilk prepared traditionally, is the leftover liquid obtained after churning out the fat from the curd. Salt, curry leaves, asafoetida and cumin are added to the buttermilk and are taken after the meal. It has a cooling effect on the digestive system, helps in digestion, treat stomach

ailments and ulcers. It is a good source of vitamin D. Drinking *mor* increases good bacteria in your gut and improves the immunity to fight diseases (Yeragi & Maske, 2016).

6. **Naval pazham** – Jamun is a good blood purifier and a thirst quencher. It is used to treat dysentery and ulcer (Sundaram, 2020).
7. **Elanthai pazham** – The Indian plum is used for curing constipation, high blood pressure and anaemia (Sundaram, 2020).
8. **Jackfruit** – The flesh of this seasonal fruit is eaten ripe, whereas, the seeds and the unripe fruit is boiled, roasted and /or cooked in curries. Jackfruits are hypoglycaemic and are used in ancient medicine for its anti-carcinogenic, anti-microbial, anti-inflammatory and wound-healing effects (Ranasinghe, Maduwanthi, & Marapana, 2019).

FOOD CUSTOMS FOLLOWED BY DIFFERENT RELIGIONS OF TAMIL NADU

1. Hindu food customs

Pongal	Diwali	Aadi	Navarathi	Marriage occasions
It is a festival of harvest. The newly harvested rice and dal are cooked in a mud pot and worshipped.	Special sweets and snacks are prepared and eaten.	Complete abstinence from meat.	The elders fast from the New Moon day to the 11th day of the lunar cycle.	<i>Idli, dosa</i> and <i>pongal</i> with <i>sambhar</i> and chutney varieties along with <i>vada, idiyappam</i> and any two kinds of sweets are served for breakfast.

(Akmal & Suneetha, 2016)

2. Muslim food customs

Muslim presence in the state of Tamil Nadu is many centuries older than that of the North, which was established by the trading of the Arabs with the South Indians (Fanselow, 1989). Muslims fast for 30 days in the month of *Ramadan*. Foods taken before the beginning of the fast consists of rice, meat and other foods that are rich in carbohydrates and protein, that help them sustain energy throughout the day. Water, dates, fruit juices are consumed while breaking the fast. *Nombu Kanji* is a porridge made with rice, lentils and meat, commonly consumed during *Ramadan* as a food of nourishment. *Biryani* is a famous rice-based dish cooked and eaten during Eid (*Ramzan or Bakrid*) (Akmal & Suneetha, 2016). Old Tamil literatures say that *Biryani* also seems to have its origin from the Southern part of India. In

olden days, the King offered the warriors or soldiers '*oon soru*' ('*Oon*' means meat and '*Soru*' means rice) before going on a battle or during victorious occasions (Yuvaraj, 2019).

CONCLUSION

Good nutrition and proper physical activity are essential for overall good health and to prevent chronic diseases (such as heart disease, cancer and diabetes). Authentic foods of Tamil Nadu contain enormous nutritional benefits. These foods are simple, delicious and naturally healthy. Creating awareness about the ethnic foods and its benefits of consumption are very important for the current generation in Tamil Nadu (Yuvaraj, 2019).

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CULINARY CULTURE OF MUSALMANS OF TAMIL NADU

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ABSTRACT

Food and religion are two closely knitted concepts. Every ethos has its specific frame of acquaintance on food and beverage and anthropological behaviour allied to the same. The spread of primitive dietary booklets and cookery books establishes the connection between cuisine and religion. The origin of unique features of food and Muslim culture has rooted in Middle Eastern countries. The modern-day work has been less imminent about the node of daily food practices and religion by *musalmans* worldwide. The mushrooming field reviewed here offers a bird's eye view of recent contributions, with a vision towards unfolding avenues for further research.

INTRODUCTION

The solemn learning of food reflects the system in which the family space, domestic congregations, and community get-togethers are personified, materialized, and celebrated in production, consumption, and food sharing. Also, how, where, and who hosts the gatherings, voices ample about the associations between creed, communal milieu, and gathering processes, which once appeared too ordinary or insignificant for a serious study, is on-demand today.

Nutritional and further functional perspectives of food gained researchers' attention since the post First World War and pre-Second World War days. Anthropological requirements were rendered a key site specifically in the functionalist treatises of the 1930s. Nevertheless, these researches peaked only post- Second World War era when disputes like reform of the war atrophied countries and bridging the gap between the developed and developing nations became decisive. Whiting's study in 1958 on cross-cultural nutrition comprising 118 societies in lieu of the major ethnic and topographical zones of the globe.

The anthropology of Muslim food culture has arisen as a retort to Islam's guidelines, legitimacy, and orthodoxy. Baderoon (2002) states that whirling to food and dietary practices proposed an opportunity

to study *Musalman* culture that integrates economy, virtue, and everyday life. Decisively, keen thoughtfulness to Muslim societies, individuals, and varying modern frameworks, through food, stretches an imperative disclosure for Islam's anthropology to move further than the stand-off between highlighting religiousness against everyday life. Thus, reviewing food as an important principle divulges key acquaintances between kinfolk, relationship, frugality, and Muslim religion.

DIETARY LAWS

Muslim cuisine and culinary practices are related to interrogations of taboos and dietary laws. *Halal* means "Permissible" *Halal* denotes "food products that are affirmed edible and permissible under Islamic dietary law". In the early days, *halal* referred only to bans on pigs, carrion, and meat that had been devoted to other religious Deities.

Later, *halal* practice's new basics echoed provincial concerns as shellfish, fowls, and reptiles were tied to *halal*. Also, with the founding of *Hadith* scholarship and the progress of a formalized *Sharia*, the slaughtering procedures were postulated and recommended under *Halal*. According to *halal*, while slaughtering, the animal is to be positioned on the ground in Mecca's direction, and *Bismillah-Allahu-akbar* is recited, and the two arteries are split with a sharp knife. Before slaughter, the animal should not see the knife and also the slaughter of other animals. These facets of *halal* practice are accredited to the Prophetic traditions (*Hadith*), and they are thought of as best practices rather than mandatory. In recent years, the *halal* practice has gone through noteworthy makeovers indicating new concerns in the arena of ethical relations international food market and food preparation.

The incredibly multifaceted discourse on *halal* comprises specific reasoning systems about the link amongst ritual practice, evidence, and performance, with understandings into the influential resources upon which *halal* practice is drawn. Yet, in spite of the concreteness of *halal* discourse, Muslims in several parts of the globe continue to transfer to *halal* as if it is even and candid. Thus, the strategy to understand *halal* in practice demands thought of the bond concerning sin, salvation, and intention (*niyyat*) within Muslim networks of trade.

The expansion of food trade has brought in the *halal* certification to warrant uniformity of foods and ingredients used in the formulation of foodstuff products and document regulations for the guilt-free consumption by *Musalmans* worldwide. *Halal* certification accentuates two novel fields of action as jeopardies to the reliability of *halal*. One is cross-contamination, where the likelihood for *halal* and non-*halal* foodstuffs to come into contact with one another in the course of production, dissemination, or delivery.

Alleviating the risk of cross-contamination necessitates exhaustive supply chain management and should ensure separate spaces, instruments, vessels, and transports. The other is the food technology industry, where the focus on ingredients listing and production processes becomes vital for determining the *halal* status of manufactured food. Consequently, *Halal* is drawn-out from concern with permissible animals and meat to all food items of Muslim consumption and use in modern times.

DIETARY PRACTICES

In the Muslim community, food is featured as a virtue that is instilled with ethical value. For instance,

Ramadan's holy month and the festivals of *Eid* are observed by the preparation, sharing and distribution of food to one another. Periods with religious significance are habitually marked by eating specific foods. This draws consideration to some of the communal concepts of '*Barakat*' as verbalized through Muslims' food practices across the world. As celestial grace, blessing and supremacy, *Barakat* is practiced, transformed and negotiated in everyday life by Muslims through which ingestion and foodstuff attain ethical value.

Mittermaier (2019) stated that *Barakat* is a "divine excess" that is "both transferred and shaped throughout the acts of sympathy, sharing, almsgiving, comradely and good will". *Musalmans* strongly believe that there is a link between God's blessings and food, which has translated their aspiration to engross in great food preparations to mark important events such as marriages, cremations, and *Ramadan/Eid* celebrations.

FASTING AND FEASTING

Fasting and feasting mutually mark significance in Muslim customs. During the month of *Ramadan* month, which is the month of fasting in the Islamic calendar, Muslims are indebted to fast from just before dawn until dusk. Fasting is reflected as a serious disciplinary training through which religious subjectivity is cultivated in order to control thoughts, actions and words.

Feasting by escalating the eminence of food during *Ramadan* is witnessed through an increase in "permissible" consumption, of which the prime portion is spent on food. In India and elsewhere, late-night markets preparing and serving special delicacies attract thousands of visitors. The blessings of *Ramadan* are evident in the variety of tastes on offer. Preparing food and sharing food are key to these *Ramadan* celebrations and are also considered a form of righteous activity during the month. This is also evident from the *iftar* meals provided in mosques for worshippers after dusk to break the fast, usually funded by nation-states, merchants and politicians.

PERSPECTIVES OF FOODS IN ISLAM

Muslims had a rich food heritage. According to K.T. Achaya, "Muslims bought a refined and courtly decorum of both individual and group dining, and of sharing food in companionship." Food becomes enriched with raisins, nuts, spices and ghee. Meat and rice dishes came up, dressed as *kebabs*, stuffed items such as *samosa*, and desserts like *halwa* and stewed fruits, which can also be cited by popular *iftar* meals today.

Achaya, also points out that, after coming to India, Babar mourned that there were no muskmelons or first-rate fruits, grapes, no cold or ice water, no cooked food or bread in the *bazaars*. He also stated that Akbar started his meals with curd-rice and abstained from eating meat on Fridays and Sundays. First day of every solar month is also added to the non-meat days and also the whole month of March and also abstained in his birth month, November also in the list. Jehangir also enjoyed eating meat and was especially fond of the mountain goat. According to some accounts, Aurangzeb did not touch animal flesh and ate only water and millet bread. Muhammad- Bin-Tughlaq gave a foreign visitor biscuit tin that included roast meat cut into huge pieces, cakes of bread soaked in ghee containing almonds, honey, and sesame oil and on which was placed a sweet cake called *khishti* (prepared with flour, sugar, and

ghee), pastries stuffed with minced meat and rice with roast fowl.

In continuation of the Muslim rulers' food tradition, the Muslims in India enjoyed a lavish meal on all accounts. For instance, the *iftar* meals are rich in calories, proteins and fats to provide enough sustenance throughout the entire day. Many dishes associated with *Ramadan* contain plenty of complex carbohydrates, which release energy slowly, and are high in fats and sugar. Foods that hydrate and are easy to prepare (like soups) are common, while spicy dishes such as curries are avoided. Traditionally *iftar* begins with the eating dates, which are good sources of sugar, fibre and carbohydrates. Dates are also assumed to be the foodstuff that the Islamic prophet *Muhammed* broke his fast with during *Ramadan*, along with water and camels' milk. *Iftar* contains foods typically from all food groups, along with hydrating fluids and vegetables.

TRADITIONAL *IFTAR* RECIPES ACROSS THE GLOBE

The traditional and popular *iftar* recipes of various countries are presented in the table-1. The dishes speak for themselves, the richness in terms of ingredients, nutrients and palatability.

TABLE 1: TRADITIONAL *IFTAR* RECIPES ACROSS THE GLOBE

Country	Recipe	Ingredients
Egypt	<i>Mahshi</i>	Rice stuffed with eggplant, tomatoes, peppers, and zucchini.
	<i>Kahk</i>	Cookies filled with honey, walnuts, and pistachios.
India	<i>Nombu Kanji</i>	Porridge made with broken rice, moong dal, Vegetables, Mutton/Chicken fenugreek seeds, shredded coconut, onion, tomato, spices, and green chilies
	<i>Biryani</i>	A dish made up of mixing rice with spices, egg/ meat /vegetables
	<i>Nihari</i>	Stew that is slowly cooked with mutton and is served with goat's bone marrow.
	<i>Shahi Tukda</i>	Mughalai dessert made with ghee fried bread, thickened sweet milk, saffron, and nuts
	<i>Seviyan</i>	Sweet pudding made with vermicelli, milk, and sugar and flavored with cardamom
	<i>Phirni</i>	Sweet pudding made with powdered rice, milk, almonds, saffron, and cardamom
Jordan	<i>Mansaf</i>	Lamb cooked in yogurt, served over rice and garnished with almonds and pine nuts
Levant	<i>Tabbouleh</i>	Salad made of soaked bulgur, parsley, mint, and tomatoes.
	<i>Ma'amoul</i>	Pastries made up of Shortbread filled with dates, pistachios, or walnuts.

Morocco	<i>Harira</i>	A rich brown soup made of lentils, chickpeas, rice, and meat stock
	<i>Laasida</i>	Buttered couscous served for breakfast.
Malaysia	<i>Kuih</i>	Colorful bite-sized cakes made with butter, wheat, eggs, and sugar.
Pakistan	<i>Gulab sharbat</i>	Rose lemonade
	<i>Pakoraye</i>	Potatoes, brinjal coated with gram flour, onions and spice paste
	<i>Nihari</i>	Stew that is slowly cooked with beef
	<i>Haleem</i>	Gravy blended with meat and lentils Shallow fried marinated mutton <i>kebab</i>
	<i>Dahi Bhalae</i>	Yogurt with white lentils dumplings
Palestine	<i>Maqluba</i>	Rice, meat, and fried vegetables mixed and placed in a pot, which is then flipped upside down

NOMBU KANJI: A RECIPE THAT CAN BE POPULARIZED FOR THE EAT RIGHT MOVEMENT

Nombu kanji, traditional Muslim cuisine from Tamil Nadu prepared especially in the months of *Ramadan* to break the fast, needs to be highlighted and popularised. Way back in 1948, Pulavar Asan Mohideen prepared *Nombu Kanji* in the mosque of Shengottai, Tamil Nadu, and distributed it to all the people who would come to break the fast at the mosque. Since then, *Nombu Kanji* became an official *Iftar* meal in Tamil Nadu and Kerala.

The *nombu kanji* can be enriched by adding any vegetables based on seasonal availability and preference in the region like drumstick leaves, mutton, or chicken. Also, the porridge can be consumed during lean times as it is easily digested, easy to prepare and tastes good.

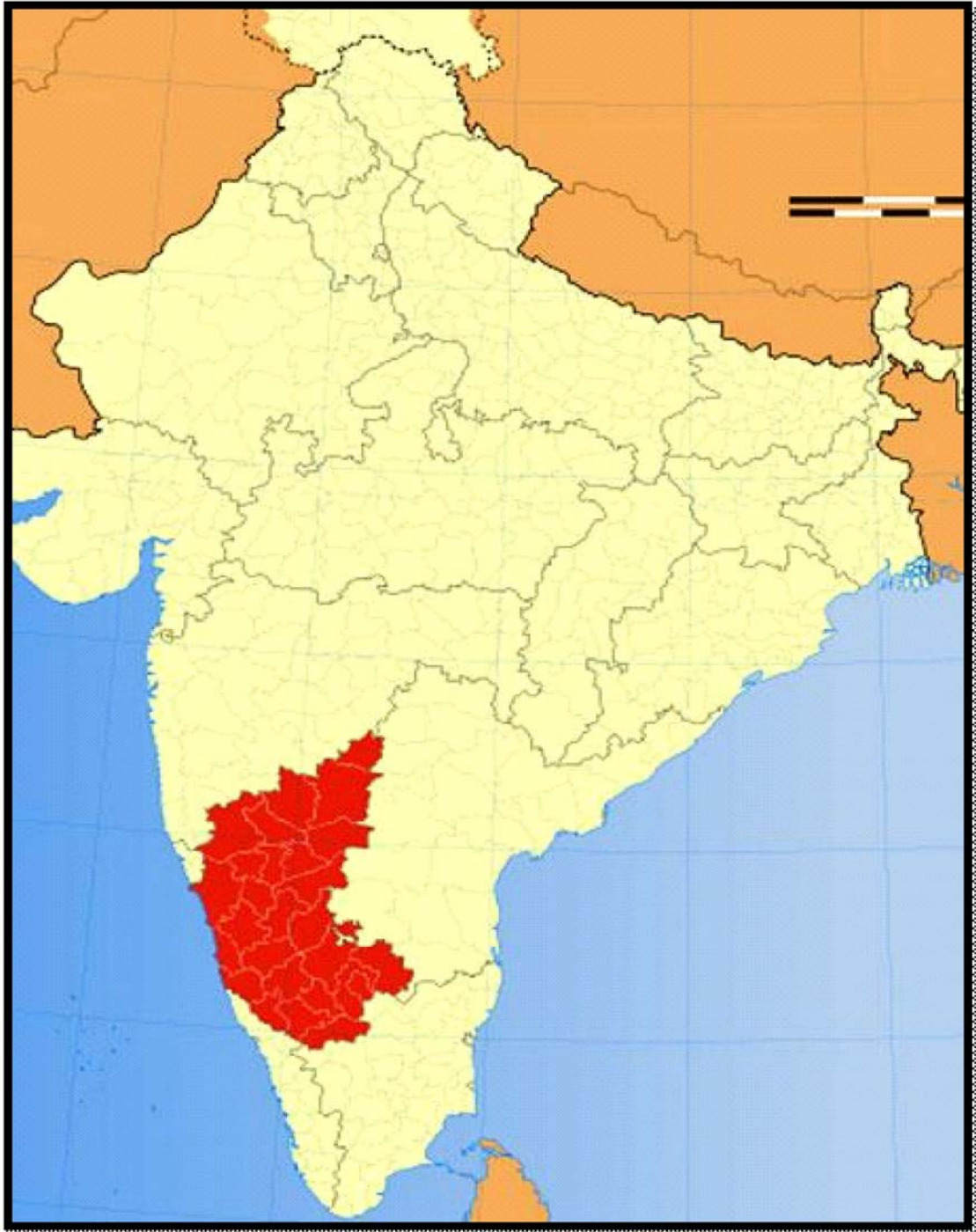
CONCLUSION

The implication of food in everyday Muslim life is indisputable. In this chapter, the ideas of charity, gifting and community authorized by the tradition of Islamic practice and thought are highlighted. An overview of several of the avenues to investigate the importance and complexity of food as implanted in Muslim social life is also discussed.

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ANTHROPOLOGY OF FOOD AND DIETARY CULTURE OF MYSORE PROVINCE - KARNATAKA AND ITS ROLE IN HEALTHY DIET PLANNING IN CURRENT CONTEXT

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ABSTRACT

Mysore was a Princely State for nearly 600 years and has a timeless and traditional example of architectural and cultural heritage. The *Dasara* commemorations of Mysuru are world renowned and the royal food culture of this state is distinct. Mysore is a home to delectable and exceptional foods that may not be found anywhere else. The city is a heaven for vegetarians, which is well represented in the heritage cuisine of the Mysore Province.

INTRODUCTION

Mysore was a Princely State for nearly 600 years (established in 1399) by the Hindu *Wodeyar* family. It was a strong Southern Deccan state of the Vijayanagar Empire, which expanded in the 17th century parts of Southern Karnataka and Tamil Nadu. It was under Muslim rulers Hyder Ali and his son Tipu Sultan in late 18th century who also contributed substantially to its economy and culture including plantation of mulberry trees and introduction of silk.

Mysooru OR Mysuru OR Mysore situated in the foothills of Chamundi Betta (Chamundi hills) nearly 160 kms from Bangalore, the capital of Karnataka is the largest city of the state of Karnataka. The major language articulated here is Kannada and some of the population speak Tamil, Tulu, Urdu and Hindi. The *Dasara* commemorations of Mysuru is world renowned and legendary, an idol of Devi

(Goddess) Chamundeshwari is positioned on a unique golden *Ambari (mantap)* which is carried on the back of a decked elephant and taken on a procession which is trailed by dance troupes, musical groups, tableaux, beautifully dressed elephants, horses and camels. The festivities end with a torch parade at the *Banni mantap*.

Agriculture in this region is highly dependent on rainfall. Kaveri and Kabini rivers provide the irrigation needs and the right bank high level canal of Krishna Raja Sagar identified as the *Varuna* canal passes all the way through Mysore. Paddy is grown predominantly, trailed by *Ragi* and pulses in this district.

The main crops include millet (*ragi, jowar, maize*), paddy, sorghum, cotton, sugarcane, peanuts and sesame. Some of the other important crops grown here are pulses (horse gram, *tuvar*, cowpea, green gram, black gram and *avarekai*), jowar, maize and sunflower. Horticulture is another area contributing significantly to the economy; especially the palm oil production in H D Kote Taluk.

FOOD CULTURE OF MYSORE

Historians concentrate on food as a crucial facet of culture that indicates the social and economic nature of the civilization. Archaeologists investigated the food perspective with evolution of civilization and migration of herds. Food Anthropology stipulates us to understand food culturally.

Mysuru also lends its name to various arts, delicacies, and traditional attires like Mysore painting, Mysore Inlay wood work, *Mysore Dasara*, *Mysore masala Dosa*, Mysore Sandal Soap, Mysore Ink (only company in India to manufacture and supply the Indelible ink for voting, to many countries in the world including India), *Mysore Peta* (traditional silk turban), Mysore silk sarees, the very famed sweet dish *Mysore Pak* and a distinct variety of jasmine flower fondly referred as *Mysore Mallige* and *Mysore Veelyadele* (Mysore betel leaves).

The general cuisine of Mysore province is largely vegetarian with rice as a staple and key element used in cooking along with several varieties of spices. The heritage cuisine of Mysore province is a blend of many cultures, religions, and traditions. The cuisine of the Mysore district is spread into (a) The culinary heritage of the *Wodeyars*, (b) The influence of the Muslim rulers (Hyder Ali and Tipu Sultan) on the cuisine of Mysore Province, (c) The *Satvik* cuisine of the *Iyengar* clan

a) The Culinary Heritage Of The *Wodeyars*

b)

The roads that lead to the state of Karnataka can witness estates and plantations of spices such as cardamoms, cloves, peppercorns, red chillies, cinnamon and bay leaves which were a part of the Hindu rulers of the *Wodeyar* dynasty. The cuisine of this province includes the fresh flavours of these spices along with flavours of the Buddhist and Jain culture. The Royal kitchens also include cuisines of foreign cultures to welcome the overseas merchants like Arabs and introduced Muslim flavours, non-vegetarian recipes and new methods of cooking. The *Bahmani* Kings of Persian lineage also influenced the newer menu.

The three-century old food tradition of the royal family of Mysore philosophy of five elements of nature like sky, wind, water, earth, and fire. This philosophy was even engaged in growing food. These elements are the base for the human body to function perfectly thus making food the fuel of life. The royal kingdom ensured that the chefs of the royal kitchens abided by ancient scriptures of *Paaka Shastra* that expounded the art of cooking. These scriptures explain “What to eat, how to eat and when to eat”.

It elaborated on the utilization of specific metals for the vessels so that it had a positive and helpful effect when food was being cooked in it. Copper and brass vessels were frequently used for the preparation and serving of food. Copper vessels were also part of the safety measure protocol for the royal family because copper reacts with poison and turns green. The *Paaka shastra* scripture defined the properties of spices and herbs that were used in food preparation.

The royal family of Mysore had private chefs for the female quarters of the palace and distinct chefs for the male quarters as the recipes and ingredients used for the female and male cooking were different as per the ancient *Paaka shastra* scripture.

To improve the fertility of women, ingredients like green cardamoms were used abundantly in the dishes prepared for them. Likewise, mace was generously used in the recipes prepared for men as it enhanced their virility. The royal kitchen also planned and cooked many preparations which were medicinal for the health of the members. Curd rice was advocated to cool the body during summers and the same was included in the diet of the elephants when they are in heat.

The royal kitchen of the Mysore palace boasts about having 150 chefs who prepared only vegetarian dishes and 25 chefs who cooked only non-vegetarian dishes. These chefs were further bifurcated into Hindu and Muslim chefs based on their unique skill sets. The royal family also employed 20 Brahmin chefs and gave them separate kitchens where meat, fish, poultry, and *tamasic* vegetables like onion and garlic were not entertained. These chefs cooked food for all the spiritual ceremonies. At least 25 unique and special dishes had to be prepared at every meal.

Red hot *Byadige* chilli, emerald green curry leaves, the sour *kokum*, the bronze coloured tamarind, freshly grated coconut and the amber yellow turmeric along with the spices like cloves, star anise, cardamoms, cinnamon, peppercorns and bay leaves are the stars of the royal kitchen’s masala gamut. Most of these spices like coconut, *kokum* and tamarind are grown in the palace gardens. The chefs from the royal family of the Mysore province have put together unique masalas and secret concoctions which remain private and the same goes into the aromatic curries and traditional dishes simmering in the royal kitchen. There are only three items in the Mysore *garam* masala, equal quantities of cinnamon, cardamom and cloves contrasting the usual *garam* masala from the North of India. The above stated fresh and dry ingredients form the flavours of Kannada cuisine and provides the balance of sweet, sour, and spicy hints.

c) The Influence Of The Muslim Rule On The Cuisine Of Mysore Province

d)

The culinary tradition of the princely Mysore Province acquired a melded distinctiveness during the

Muslim rule of Hyder Ali/ Tipu Sultan. An elaborate breakfast of the Muslim community would include blends of dishes like *Parathas* with *Kheema Sukha*, *Bheja Sukha*, *Khichadi*, *Paya ka Shorba*, *Anday ka Kharaz*, *Kubat* (made with egg and coconut milk) and *Phirni*. They would not have the typical *Idli*, *Dosa* or *Upma* dishes.

Lunch and dinner would offer *Biryani* (*Gosht* or *Murgh*) as the major dish along with a *Dal tadka*, a *raita*, and Chicken side dish with *Parathas*. The other delicacies that were bought along with the Muslim rule are *Gosht Khurma*, *Gosht tarkari salan*, *Gosht kofta salan*, *Gosht baigan salan*, *Kulthi ka Kat* (made with Horse gram extract) with mutton balls or boiled eggs, *Dalcha* (Mutton and Dal), *Murgh Khurma*, *Murgh Kadai*, *Machli ka Salan*, *Achar Gosht*, *Passanday* (a special curry of mutton and chicken), *Kaliji Gurdha Salan* with dill leaves. Though most of the prepared foods were non-vegetarian, the vegetables were also used along with non-vegetarian items to cook an elaborate menu.

The Muslim rule also introduced the rich and exuberant deserts to this region, *Sheer Khurma*, *Gud ki Kheer*, *Zarda*, *Anday ka Halwa*, *Lauki ki Kheer*, *Muzaffer* (rice pudding), *Phirni* (made with pure rose petals), *Badam ka Halwa* and *Falooda*.

e) The cuisine of the Iyengar clan

Iyengars/Ayyangars are religious groups of Hindu Brahmins found mostly in the Indian states of Tamil Nadu and Karnataka who follow Sri *Vaishnavism* and *Visishtadvaita* philosophy promulgated by Sri Ramanujacharya. Iyengars are divided into two sects, the *Vadakalai* and the *Thenkalai*. They are settled in different places of the Hoysala Kingdom (Current South Karnataka) and thus one can find them mainly in the southern districts of Karnataka especially, Bangalore, Mysore, Mandya, Tumkur, Hassan, Kolar and Chamarajanagar districts.

Iyengar cooking prohibits the use of onion and garlic in its customary dishes, these recipes are still passed along orally within the household. About a few years ago, a stringent and conservative Iyengar home would not use any English vegetables like cabbage, beetroot, and carrot. Spices like coriander, cumin, pepper, mustard, fenugreek seeds, cloves and cardamom are used but cinnamon and bay leaf did not have their presence in the kitchen.

The signature dishes of the Iyengar cuisine are – (1) rice and jaggery based sweet dish “*Sakkare Pongal*” and (2) the tangy flavoured rice dish *Puliyogare*. These two dishes are well known *Prasada* served in the Sri Vaishnava temples.

1. The breakfast generally consists of Varieties of *Idli*, Varieties of *Dosa*, Semolina preparations, Rice preparations with *Sambar* and special Mysore chutney.
2. A elaborate lunch consist of one or two *Kosambari* (soaked dal with vegetable preparation or salad), *Kootu* (Vegetable and pulse preparation with roasted and ground spice and coconut masala), Mixed vegetable *sambar* (*Kuzhambu*), *Rasam* (*Saatramudhu*), a special chutney preparation (*Thogayal/Thuvayal*), a *pachadi* (*raita*), Vegetable preparation (dry vegetable curry), a mixed rice dish, *pappad/sandige* and curd. The rice is the central part of this spread.

3. A specialty vegetable dish very native to the Iyengar community is the 'Yengai', generally prepared with much-loved vegetables like potato and brinjal with an interesting spice base.
4. No meal is complete without the sweet course, the traditional desserts of the Iyengar cuisine include 'Thuni Thenkol' – a fried snack made with *urad* dal batter and dipped in sugar syrup and 'Gasagase (Poppy seed) Payasa' - milk, poppy seeds and jaggery based dish, to be consumed fresh and hot else it will ferment into a brew. The Krishna Janmashtami sweets like *Kadalekai unde* (roasted peanut ball with jaggery and dry coconut), *Payaru maavu Unde* (Moong dal ball) and *Payatham maavu urundai* (whole skinned urad and moong balls with jaggery).
5. Most of the spice base or masala of the Iyengar cuisine is around red chillies, fresh grated coconut, mustard, cumin and coriander seeds.

TYPICAL MEAL PATTERNS OF MYSORE

The staple grains of this part of Karnataka are *Ragi* (finger millet) and Rice. *Ragi* is the main food of the population residing in the rural regions. Other major and normally used beans in the winter months are the 'Avarekai' (Hyacinth beans) which finds its way into numerous traditional dishes, from *Idli, Dosa, Pongal, Upma, Chitranna, Rasam, Sambar, Bisibelebath* to even the sweets and savouries.

The local *Kannadigas* around the Mysore region eat what they grow like grains, vegetables and livestock. They use a lot of onion, garlic, ginger and coriander in most of the food preparations. A traditional home-cooked lunch would comprise *Ragi mudde* (steamed balls of *ragi*) with a *Saaru* (thin *sambar*) made with either Mutton/Chicken or *Bassar* (a green leafy vegetable thin *sambar* or curry made with the drained water obtained after cooking the dal). With this they eat *Mosappu* (mashed greens with dal), a *palya* (dry vegetable), rice, *rasam* and curd. The sweet preparations or desserts are predominantly jaggery-based like *Holige (Puran Poli), Kadalebele Payasa (Chana Dal* and jaggery *payasam)* and *Hesaru bele Payasa (Moong Dal* and jaggery *payasa)*.

1. The breakfast spread typically comprises of *Idli, Dosa, Vada sambar, Pongal, Rave Uppittu* (a spicy dish made with semolina and vegetables), *Shavige Uppittu* (spicy breakfast made with vermicelli), *Oggarane Avalakki* (seasoned and spicy beaten rice), *Gojju Avalakki* (seasoned, spicy and tangy beaten rice with peanuts), *Nucchina Unde* (spicy mixed dal steamed balls), *Poori Saagu* and last but not the least, the indigenous *Rave Idli*.
2. Rice preparations such as *Chitranna* (spicy lemon rice), *Puliyogare* (spicy and tangy rice preparation prepared with tamarind paste and a powder made from pulses and spices with a traditional seasoning), *Vangi bath* (spicy rice preparation with brinjal and a special spice mix powder and seasoning) and *Bisi Bele Bath* (a spicy rice preparation with variety of vegetables and a traditional spice paste) are common.
3. Breakfast dishes will always have *sambar* (generally made with tomato and onion) and varieties of chutneys (made with roasted bengal gram, tomato, ridge gourd, onion) along with varieties of *dosa Mysore masala dosa* and *Rava dosa* along with filter coffee.

4. Lunch or *thali* of Mysore includes *kosambari* (salad made with split dals and vegetables like carrot or cucumber), variety of *palyas* (dry vegetable preparations made from different vegetables like beans, potato, brinjal, ladies finger, *chapparada avarekai* (flat and broad beans), cabbage, *thondekai* (Ivy gourd), *tove* (dal with salt and simple seasoning), vegetable *sambar*, *rasam*, *gojju* (a spicy and tangy liquid dish cooked with bitter gourd, ladies finger, brinjal or pineapple along with a distinct roasted spice powder), *majjige huli* or *majjige saaru* (a curd or buttermilk based curry or *rasam* with vegetables and assorted roasted spices, ground with fresh coconut) and curd served with rice.
5. *Paanaka* (drink made with water, jaggery, lemon, and cardamom) and *Neer Majjige* (buttermilk with salt, asafoetida, curry, and coriander leaves) are preferred beverages in summer.

During festivals and ceremonial occasions, a sweet dish and *payasa* is included in the menu and lunch is served on a plantain leaf.

TRADITIONAL SWEETS

The traditional sweets of Mysore Province are *rave unde* (sweet balls made with semolina, coconut gratings and sugar), *bele obbattu* (Bengal gram and jaggery filling), varieties of *payasa* (prepared with milk and sugar/jaggery), *sajjige* (made with semolina, milk and sugar), *chiroti* (made with refined wheat flour and eaten with Badam milk), *laddoo* and the world famous *Mysore Pak*.

POPULAR SNACKS

The usual and famed snacks of this place are *Chakkuli*, *Kodubale*, *Nippattu* (deep fried savouries), *Khara Mandakki* (spicy puffed rice with masala powders and salt), *Maddur Vade* (a crispy and all-time favourite snack made with semolina and refined flour with lots of onions, green chillies and spices), *Mysore Bonda* (prepared with Urad Dal and served with coconut chutney).

NUTRITION SECURITY AND LOCAL FOODS

The vision for all the programs related to Malnutrition and Undernutrition are the children who are the future of our country. The Ministry of Women and Child Development is placing higher importance and putting greater efforts to execute all the current government policies and programs for the wellbeing and growth of children and women. The Integrated Child Development Services Scheme (ICDS) was first started in the state of Karnataka on 2nd October 1975 with a pilot project at T. Narasipura of Mysore District with only 100 *Anganwadi* centres. Currently, it's developed and expanded to all the taluks of the State. The main importance of the programs is, the welfare of pregnant women, nursing mothers, adolescent girls, and children below 6 years. Supplementary Nutrition Program (SNP) Details (from the ICDS website of the Government of Karnataka). Supplementary Nutrition is provided for 300 days in a year.

Supplementary nutrition is provided to the beneficiaries under the ICDS programme with revised feeding norms of –

- a. 500 calories of energy and 12-15 gms of protein to 0-6 years children

- b. 600 calories of energy and 18-20 gms of protein to pregnant women/lactating mothers/adolescents' girls
- c. 800 calories of energy and 20-25 gms of protein to severely malnourished children as a supplement to their normal intake

The Menu provided in the SNP is chosen by the committee formed under the leadership of Deputy Commissioner of the District. The general menu supplied at the Anganwadi centres are -

- **6 months – 3 years** – Nutrimix, Wheat Rava, Rice, Green gram, and Rice *Khichdi* and *Ragi Payasa*
- **3 years - 6 years** - *Chitranna* (Lemon Rice), *Rava laddu*, Rice *khichdi*, Sprouted Green gram, Rice and *Sambar* and *Chikkis* (Peanut *burfi*)
- **Adolescent girls** – Multigrain Atta, *Chitranna*, Wheat, Green gram and jaggery *unde (laddu)*
- ***Ksheera Bhagya scheme*** - 6 months – 6 years children are provided 150 ml milk for 5 days a week (15 grams milk powder and 10 grams sugar)
- 6 months – 3 years severely malnourished children are provided egg for 3 days per week
- 3 years – 6 years severely malnourished children are provided egg for 5 days per week and children who do not consume egg are provided with milk for 6 days per week
- 6 months – 3 years moderately malnourished children of 5 backward districts viz., Bidar, Kalburgi, Raichur, Koppal and Yadgir are provided egg for 3 days per week
- 3 years – 6 years children are provided egg for 5 days per week, children who do not consume egg are provided milk 6 days per week.
- ***Maatrupoorna*** – one full meal scheme for maternal nutrition – under the SNP program, pregnant and lactating women are supplied with nutritious food that provides about 600 kcals per day, for six days of the week. The meal consists of Rice, leafy vegetables Dal/Sambar, Vegetables palya, Egg, Chikki and 200 ml milk. Along with the meal Iron and Folic acid supplementation is provided.

TRADITIONAL RECIPES AND THEIR NUTRITIONAL INFORMATION

Traditional foods are built on the sensible basis of culture, environment, local and natural foods consumed by the inhabitants of a particular area over a long period of time. These foods have evolved through years, have been reinvented, customised, and adapted to overcome repetitiveness in the food habits. The traditional recipes of these dishes are meticulously maintained through generations. It is important to research and appreciate traditional foods as they provide the knowledge of the local foods and if they are used in community nutrition programs they will be accepted with ease by the local population or community.

Table 1: Regional Foods/Dishes of the Mysore State Province and Their Health Benefits

Name of the food item	Ingredients	Reasons to promote in the Eat Right Movement
<i>Chitranna, Puliogare, Vangibath, Rice + Sambar, Bisibelebath, Pongal, Rava and Vermicelli Uppittu, Oggarane or Gojju Avalakki, Ragi Mudde</i>	Rice, Beaten Rice, Semolina, Vermicelli, Tuvar Dal, Moong Dal, Urad Dal, Vegetables and Spices	Energy and protein dense and rich in micronutrients and antioxidants. <i>Chitranna</i> and <i>Puliogare</i> can be used in SNP by the Government and included in the community Nutrition Programs
<i>Mix Vegetable Sambar, Rasam, Kootu, Bele Soppu Palya</i>	Bengal gram Dal, Tuvar Dal, Moong Dal, Vegetables and Spices	Energy and protein dense and rich in micronutrients, antioxidants and immunity boosting. The mixed vegetable <i>sambar</i> will be a good option for the SNP or Community Nutrition programs as it can be easily prepared in bulk. The <i>Soppu</i> (green leafy vegetable) <i>palya</i> with some spices will be a good option for adolescents and maternal nutrition programs.
Vegetable based foods – Variety of <i>Palyas</i> , <i>Kosambari</i> and <i>Gojju</i>	Vegetables, Legumes and Spices	It is rich in fibre, vitamins, minerals and micronutrients, antioxidants and helps in boosting immunity. The local vegetable based <i>palyas</i> can be used in the SNP which will provide good Vitamins, minerals, and fibre rich foods for the undernourished. The <i>kosambari</i> or salad cannot be used in bulk cooking as there is always a risk of contamination with raw foods

Meat/Chicken/Egg based foods – <i>Keema</i> and <i>Bheja Sukha</i> , <i>Anday ka Kharaz</i> , Dishes from <i>Gosht</i> and <i>Murgh</i> , <i>Dalcha</i>	Mutton, Chicken, Egg, Pulse, vegetables and Spices	It is rich in good quality protein. It is also rich in micronutrients and helps in boosting immunity. The mutton and chicken generally cannot be included in the SNP because most of the population of this region is vegetarian and the cost will be exorbitant. The egg will be a good option for malnourished children, adolescent girls, pregnant and lactating women.
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CONCLUSION

Globalisation and Urbanisation of the food systems are severely changing the cultural food habits of this region. If the local and traditional foods must be rescued from globalisation, it is very crucial that they are documented as they are a vital part of the cultural heritage. Traditional and local food consumption also means that the foods are eaten at a particular time of the year when the nutrition of that food is at peak. Local food consumption also spares a lot of resources and supports the environment. Research and studies related to the heritage cuisine of the different regions of our country, documentation of the traditional recipes and their nutritive value and how the beneficial traditional foods can be incorporated in the supplemental nutrition program of that region to combat the malnourishment of that region should be the way forward.

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ANTHROPOLOGY OF FOOD AND DIETARY CULTURE OF COORG (KODAGU) – KARNATAKA

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INTRODUCTION

Kodagu, formally called as Coorg is popularly known as the land of *Kodavas* ‘brave warriors’, river Kaveri, called as Jeeva Nadi of Karnataka, coffee plantations, *pandi curry*, *akki ottis* (rice *rotis*), honey, spices and many more. Archaeological evidence indicates that Coorg was part of the kingdom of the Ganges in the 9th and 10th century. The Haleri dynasty, part of the Keladi Nayaka, ruled *Kodagu* between 1600 and 1834. During this phase, there were continuous disputes in Coorg over succession in 1770. Post the famous Coorg war, British ruled *Kodagu* from 1834 till India’s independence in 1947. Coorg became a province after independence and later became a district of Mysore state in 1956. Mysuru state was named as Karnataka and Coorg was renamed again as *Kodagu*. The influence of the rulers is seen however the roots of *Kodagu* are still intact reflecting in their cuisine.

Kodagu situated on the Eastern slopes of Western Ghats range, is also known as “Scotland of India” and covered by mountains, forests and has waterfalls. The famous river Cauvery originates at Talakaveri in *Kodagu*. Seasonal small rivers and streams are seen in the rainy season.

Recently changing Coorg culture has impacted its ‘*okka*’ (patriclans) system which was the cornerstone of Coorg social structure and due to migrations from the region’s many ancient ancestral homes ‘*ainemane*’ have been abandoned. Despite this, the clan exogamy is strictly adhered to and members of each clan return to celebrate some of the festivals and rituals associated with their ancestral homes ‘*ainemane*’. The ‘*ainemane*’ still holds a prominent place during festivals and special occasions.

ETHNOGRAPHY AND FOOD OF COORG

Kodavas, people of Coorg are the descendants of hunter-warrior tribes who used to stay in this region years ago. They were the only community in India who could carry guns without any necessary permits. The people of Coorg are known to explore the flora and fauna of their region exclusively for

their cuisine. It's also a community known to serve alcohol and non-vegetarian food during auspicious occasions.

The warrior influence has gradually come down and it's being reflected in the changing cuisine. The decline of wild game hunting with deforestation and regulations, an integral component of *Kodavas*, has been replaced with domestication of animals. The wild boars are no longer hunted in the dense forest instead they are reared in the farms. The game meats like deer, rabbit and duck have been substituted with chicken, lamb, mutton and fish. The meat is cooked with a different combination of spices. Meat holds a special place in the tradition of Coorg be it in '*meedi*' offerings made to ancestors before feast or '*koopadi*' taken by close relatives to expectant mothers. However, in festivals influenced by Brahmin tradition like *Kaveri Sankramana* meat is a taboo.

Coorg is known for spices. Based on the cuisine, the spices are used in a different way like roasted, fried or cooked to bring a distinct flavour. *Kachampuli*, an extract of ripe fruits of *Kodambuli* fruit (*garcinia gummi gutta* tree), is a sour black viscous fluid traditionally used in dishes. Traditionally *Kachampuli* was made with baskets of ripe *kodambuli* fruits placed over large vessels allowing the juice to drip down over a few days as the fruit gradually became a pulp. After a period of time, the extract thickened and was used as a souring agent at the end of the cooking process.

Authentic *Kodava* cuisine is packed with the natural taste, flavour of the ingredients and is based on the seasons. Traditionally, wood fire space with copper, terracotta utensils, *saekala* (steamer) was used. Usually, slow cooking is involved with steaming, oil is used sparingly. Traditional gravy of Coorg curry, either vegetarian or non-vegetarian, is made with coconut onions, garlic and spices as desired. In recent years, coconut oil is substituted with refined oil. However, coconut oil is still used for the authentic taste of Coorg dishes.

In the traditional kitchen of *Kodavas*, a reed basket with salted meat or fish is hung over the fireplace that is being smoke dried. The game meat in wooden slatted frames was placed horizontally over cooking fire to give the characteristic wood smoked flavour. Meat and fish preservation were done by salting, smoking, drying and pickling. Dried fish and crab meat take an extension of spicy chutney. During the long monsoons, the dried meat or fish becomes part of the meal.

With time, transition is being seen in *Kodava* cuisine. However, the *Kodavas* as a community have kept the traditional recipes intact and have ensured their generations dwell in the culture and tradition of *Kodagu*.

AGRICULTURE

Paddy cultivation- A traditional Coorg farmer will always relate to paddy fields which were cultivated in an organic manner. In earlier days, almost all the farmers grew rice for their household. Paddy cultivation for a duration of 9-10 months commences from tilling of the field in April to the completion of the harvest in January. Two important festivals of Coorg - *Kail Polud* and *Puthari* are associated with paddy cultivation. '*Kail Polud*' signifies the completion of paddy transplanting in September. *Puthari* festival is the greatest celebration of harvest where the crop is welcomed into the home.

In the earlier days, most households had *pathaya*, wooden bins to store the paddy harvest for a year's consumption for the immediate family. Though a decline is seen in the stocking of rice in *pathaya* due to the mushrooming of retail outlets, yet the significance of storing rice is still prevalent as a connecting thread to the local farming family.

Coffee plantation- Coorg is known as the “**Coffee Cup of India**” and is famous for two main varieties of coffee beans namely Arabica and Robusta and the blend of these two coffee beans make the world's best coffee. Coffee is grown in the shades of rose wood, wild fig and jack fruit trees. This also promoted the intercropping of crops like pepper, cloves, cardamom, *kokum* (*Garcinia cambogia*), ginger and turmeric with jackfruits hanging from the tree. Earlier the coffee was grown by *Malnad* peasants for their own pleasure and benefit. Later the concept of exporting coffee to distant countries began with establishment of coffee estates.

Honey- *Kodagu* is known as the **Valley Of Honey**. It is home for honey production with *Jenu Kuruba* tribe, skilled in honey collection playing a prominent role. The taste and quality of honey is dependent on the plant sources of the bee forage as the plants flower during varied seasons. In fact, the commercial crops – cardamom, orange and coffee are benefited by the honey bees.

The four major types of honey bee species based on the climate and temperature are *Apis dorsate*, *Apis cerena*, *Apis floria* and *Apis trigona*; except for *Apis dorsate* the others are domesticated. Apiculture has contributed to the revenue for the farmers. The recent years have witnessed a drop in the honey production due to the loss in forest cover, replacement of native trees by fast growing species in plantations. The need to revive farming in *Kodagu* has been echoed not just for bee colonies but also to provide forage plants for all round production of honey.

Spices- Coorg is known for its signature spices with the coffee plantation being the home to many spices. ***Kachampuli*** (Coorg vinegar), a dark tart vinegar is extracted from the fruit belonging to *Garcinia gummi-gutta* family. A bottle of *Kachampuli* is always there in the Coorg family. The Coorg forest gives the same microclimate required for pepper vine to thrive in the already existing coffee plantation. **Pepper**, the ‘**King of Spices**’ is also referred to as black gold contributes to an additional source of income. **Cardamom ‘Queen of Spices’** is also cultivated in Coorg but it is limited to valleys with an assured supply of water for irrigation during summer. *Paringa malu*, Bird's eyes chilli is an essential ingredient in Coorg cuisine.

Foraging- Coorg placed in the eastern declivities of the Western Ghats is extensively a forest area. An ideal habitat of rare flora and fauna - greens, flowers, fruits, berries, nuts, mushrooms, shoots and weeds is provided by the shade-grown coffee plantations. The art of foraging, quest for wild food resources - bamboo, wild mushroom, green leafy vegetables and fruits to make them a part of cuisine was exclusively used in Coorg.

Gazetteer of Coorg, first published in 1870, lists the Coorg's jungle bounty of wild pepper, wild ginger, wild cloves, *kaipuli* (bitter local oranges), rose apples, jungle mangoes, hog plums, bamboo shoots and an alphabetical list of over 60 ferns. From time immemorial, the locals owing to the plantation background have a strong connection to the land which is reflected in their varying cuisine – *puttus*, *kootu*, jams, stir-fries, pickles, chutney and wild mango curry.

The foraging experience is gradually losing its touch since vegetables are now easily available and due to rise in tourists. In few homestays, foraging experiences are conducted during summer and the monsoon. A good ecosystem is reflected by wild food grown in their natural habitat without fertilizers or pesticides. Hence, it's important to recognize the underutilized permacultures and promote the tradition of foraging.

LOCAL FOOD

Based on the agriculture season the cuisine is varied making the best use of what is available in the land with an intricate connection to the culture. During monsoon and winter, bamboo, wild mushrooms, mud crabs are relished while in summer it is jackfruits, wild mango curries and wild fruits. Festive times are reminisced with spicy meat dishes, subtly flavoured rice dishes, vegetables and *payasams*.

Rice- Rice defines the cuisine of Coorg. It is used extensively with varied cooking methods from *akki ottis* to *puttus* to *thaliya puttu*. The most flavoured rice variety is the small grained, fragrant *sannakki* or *jeerige sanna*.

Akki ottis (rice *roti*), is made of cooked rice and rice flour. The dough is divided, rolled into thin circles, cooked on both sides on a hot griddle. It is further cooked on open flame till it puffs up. It is a typical breakfast eaten with 'Ellu Pajji' (sesame seeds chutney) or 'Kaipulli Pajji' (roasted bitter lime chutney) among the *Kodavas*.

Puttus are an all-time meal eaten, be it in breakfast, lunch or dinner. *Sannaki* is washed, dried and hand pounded into *tari* is used for *puttu*. The *puttus* vary in its shape and texture like round *Kadambuttus*, soft strands of *nool puttu*, *paputtu*, steamed flat cakes and *thaliya puttu* (combination of rice and pulse).

Paputtu, flat steamed rice and coconut cakes, is a simple three ingredient recipe of broken rice, shredded coconut and milk, mixed well and steamed in greased plates. It is eaten with ghee/ butter and honey, chicken curry or *kuru* (bean) curry.

Nool Puttu, famously called string hoppers, are fine rice noodles made from steamed dough of fine-grained broken rice and water. A special *noolputtu vara* is used to press the dough to form fine noodles. It is traditionally eaten with *bellath neer* (thin, cardamom flavoured syrup of jaggery with fresh coconut). The *nool puttu* are also sun dried, deep fried and eaten with granulated sugar and scraped coconut.

Kadambuttus is made with broken rice called *Kadambuttu thari* which is cooked in boiling water to make soft dough. The dough is then rolled into small balls and is steamed till well cooked. It is served with any of the accompaniment – honey, *shunti pajji* (ginger, coconut chutney), vegetable curry and *pandi* curry. As a snack, *Kadamabuttus* are cut into halves and fried.

Based on the preference, *paputtus* and *thaliyaputtus* can be served either as a savoury or sweet. *Puttus* have their own distinct accompaniments like *kadambuttus* and *pandi* curry, *nool puttu* and chicken curry, *paputtus* and mutton curry.

Rice, considered the richest gift, is a connecting thread to Coorg. Though the rice fields are on decline, the sacred grain plays a pivotal role in culture, rituals and cuisine.

Vegetable- Earlier planters in Coorg focussed on coffee and pepper, with time vegetable cultivation has also started apart from kitchen gardens. Varied vegetable preparation based on availability is used. In the beginning of summer to battle the heat, country cucumbers grown during this season are prepared in different variations from curry to *pallya - kootu* curry, *chouthe mor pajji*, *bollari barthad* (sauteed mangalore cucumber). Colocasia, sweet potato, elephant foot yam is becoming popular.

Greens- Coorg is known for the age-old tradition of foraging for *thoppus* (monsoon greens) in Coorg's interiors. *Thatte thoppu* with a slightly bitter taste is eaten with *akki ottis* and a little ghee, *therme thoppu* or bracken ferns sauteed with onions are served with eggs while *kakke thoppu* with its purplish-black fruit is effective in deworming. On *Kakkada*, the 18th day which occurs during mid-monsoon, Coorgis pick the leaves of a wild plant called *madd thoppu* and extract its juice to make a *payasam*. *Amruta balli* and *doddapatre* or Mexican mint, are known for their medicinal properties used while cooking greens. *Kembe* (colocasia leaves) is also used. *Thoppu* (greens *pallya*) forms part of the menu.

Bamboo shoot- During monsoon, the bamboo plants throughout Coorg produce offshoots. These shoots are carefully harvested before they grow woody to be used either fresh in the curry or preserved in salt for use later through the year. The tender bamboo shoots for the bamboo shoot curry are prepared by peeling the outer woody leaves until the soft white flesh is revealed. It is sliced thinly and left soaking in a large tub of water to extract any poisonous acids that may be produced. The water in the tub is replaced once in every 24 hours and this is repeated for three days. The bamboo shoots are then either used in the bamboo shoot curry or preserved using salt for later consumption in the months of winter and summer. The bamboo shoots are made into a delicacy as sauteed *baimbale* which is lightly fermented. The bamboo shoot curry known as *bimbala barthad*, *baimbale kari* is cherished amidst the rains.

Mushroom- *Kummu*, an edible fungus grown wild on Coorg's hills are known for their exotic flavour. *Kummu* is procured only by the locals who have the knowledge about their availability and harvest season; hence it is very rarely available in the markets with its utilization being limited to the plantation owners and local villagers. *Kummu* curry is a traditional *Kodava* dish made from fresh mushrooms that appear after a rainfall. *Chutta kummu* (roasted mushrooms) are very famous during the monsoon.

Fruits- Coorg is known for wild fruits like *karmanji panne*, *kotte panne* and fruits like Coorg *mandarin*, passion fruit purple & golden yellow, pepper scented mango / wild mango, jackfruit. *Chippli panne* (Mulberry fruit) is used in making jam and wine. The *kaad maange* (small jungle mangoes) are made into wild mango curry with black jaggery giving a sweet, sour and peppery flavor. *Kaipulli chute pajji* – bitter orange chutney is famous.

Curd- Curd is used in the cuisine. *Mor kool* – seasoned curd rice mildly flavored with ginger, green chillies is wrapped in banana leaves. The *mor kool* is best accompanied with *Kaipulli chute pajji*, bitter orange chutney (citrus in spiced yogurt based). The packaged *mor kool* is a favourite among school children and farmers during summers. In fact, way back in the past, solitude with wilderness with the *mor kool* was part of summer.

Flesh food- Coorg food is incomplete without non-vegetarian food being included as part of the meal. Meat, chicken, pork, fish is not only cooked in different ways with a variety of spices but is also preserved by **salting, pickling, smoking and drying.**

1. **Pork-** Pork is an all-time favourite from time immemorial. The ever famous *Pandi* curry and Coorg cuisine are synonymous. It is a popular dish made from wild boar caught in forest as part of hunting. Since hunting is prohibited, domesticated pigs are used in culinary. The *pandi* curry is a dish of tender pork seasoned with the traditional *kachampuli* vinegar. Meat as a substitute for pork is still not considered. *Onak erachi barthad* (fried, dried smoked meat) is a delicacy.
2. **Fish & Crab-** Monsoon season brings memories to *Kodavas* of catching *Kakkada*, mud crabs in freshwater streams and mud embankments of paddy fields. *Koileemeen*, miniature fish found in flooded paddy fields and streams is a favourite. Decline of freshwater fish catching which was earlier prevalent is seen. With the urbanisation, a decline is seen in catching the mud crabs. Fresh sea crabs from the coasts of Malabar and Mangalore are supplied to the markets in *Kodagu*. *Kakkade nyende* (Crab curry) is a delicacy made with freshly caught *Kakkada* and *kachampuli*, best accompanied with *akki ottis*, steamed white rice. *Onak meen* (dried salted fish), roasted prawns and crab, pounded into chutney are favourites.

Dessert- Dessert is an intricate part of the cuisine. The typical sweets are *Koovale puttu*, steamed sweet *puttus* made from ripened jackfruit / banana, wrapped in *koovale* leaves and *thambuttu*. *Payasas* are a favourite with varied ingredients – vermicelli or *semiya payasa*, *akki payasa* with coconut milk & jaggery, *thari payasa* (broken rice & milk). The influence of neighbouring places has been seen with desserts like *kajjaya* (made from rice flour and jaggery), *halva* from banana, potato, *baale murukku* (fritters from ripe banana mashed with flour), *chikkulunde* (powdered puffed rice balls, jaggery and coconut, dipped in batter and fried)

Accompaniments- The Coorg cuisine is also known for jams and pickles. Native ingredients are used in different varieties of *pajjis* (chutneys) - *elli* (sesame) *pajji*, *citron pajji*, cucumber *pajji*, horse gram and coconut *pajji*, *mudre* (horsegram) *pajji*, *puttu kadale* (roasted gram) *pajji*, *kadale (tur dal) pajji*, tangerine chutney and mango ginger chutney.

Beverage, Liquor- Coorg is known for coffee. The *Bella kaapi* (Coffee with jaggery) is a favourite among the locals. Drinking is socially acceptable among both genders. Traditionally, men used to consume *Kall*, *toddy* made from rice which is now substituted with whiskey, rum and gin. Women prefer *Kudi*, sweet wines made at home. Wines are made from locally grown fruit – orange, gooseberry, sapota, grape, plum and also paddy (rice with its husk). An interesting wine OT (Other Things) is made from spices including chillies.

After a delicious Coorg meal, chewing *Kodiyale – adike (paan)* is mandatory. As per Coorg tradition, before one starts a formal meal, the host asks “*Ellaarku ethichaa?*” (Has everyone been served?), on finishing the meal the host asks “*Kai Bai Othathaa?*” (Have your hands and mouths agreed that they are content) and everyone nods “Yes” with a satisfied look. *Kodavas* are known for their fondness of food (*Kadi*) and liquor (*Kudi*) with the local dance (*Aat*) and song (*Paat*).

CULTURE & TRADITION

The *Kodava* festivals are intricately woven with seasons. Each season has a reason for celebration in its own festive and grandeur.

Kailpodhu- *Kalipodhu* is celebrated to signify the completion of transplantation of rice or paddy crop. It signifies the day when men prepare to safeguard their crop from animals like wild boars. Each family member worships swords, guns and farming weapons placed in the central hall (place of community worship) followed by feasting.

Kaveri Sankramana - An important festival marks the time of the year when there is rebirth of river Kaveri at Talakaveri. After observing the rituals, a vegetarian menu is served. This is the only festival where non-vegetarian food is not prepared. The menu of the day is *dosa*, vegetable curry and *payasa*.

Puttari- A traditional harvest festival of the Coorg is celebrated in the month of November or early in December. On *Puttari* day, the whole family comes together in their *ainemane*. The cuisine includes *puthari kalanji* (yam), sweet potato, *puthari* curry (dried fish, bitter gourd & local beans), *thambuttu* (sweet pudding made of coorg *mara bale*, local variety of banana, mixed with powdered roasted rice, cardamom, fenugreek seeds).

Koopadi Koolu- It is an intricate ritual of the *Kodavas*, where close family members give food items to pregnant women at the seventh month. The food is given in *Koopedi* (parcelled in small packets from banana leaf).

JENU KURUBA TRIBE

Karnataka is home to nearly 42,48,987 tribal people, of whom 50,870 belong to the primitive group. Though they represent only 6.95 per cent of the population of the State, it is very important to focus on their nutrition and health status. Most of the tribal people have an isolated lifestyle as per their geographical location. *Jenu Kuruba* is a tribal group from the Nilgiris predominantly belonging to *Kodagu* and *Mysore* districts of Karnataka. 'Jenu' means 'honey' in Kannada, referring to collectors of honey and are traditional wage laborers in the forest. Apart from their occupation, the *Jenu Kuruba* knowledge on ethnomedicinal uses of plants has been documented. The study by Nanjunda underlines the potential of the ethnobotanical knowledge in this tribe and the need for further research among this community.

Jenu Kuruba tribes have been identified as Particularly Vulnerable Tribal Groups (PVTG), with low levels of literacy rate, pre-agricultural level of technology with a declining population. Staple food is rice, *sambar* and *soppu* (vegetables). In a study conducted by Poojar et al., on a total of 645 subjects from 252 households of six hamlets of *Kodagu* district, it was observed 23.9% of the *Jenu Kuruba* tribe suffer from Grade-III type of malnutrition. It's important to recognise and bring in specific actions to improve the nutritional status of the *Jenu Kuruba* tribal peoples.

RELATIONSHIP ON MIYCN, FOOD AND NUTRITION SECURITY

With the exploration of the traditional cuisine of *Kodavas*, based on the crops, locally grown seasonal vegetables and fruits, the menus can be planned and effectively implemented across life span in consultation with nutritionists thereby ensuring food and nutrition security. At the same time, it is important

to know the initiatives of the Government region wise to examine, analyse, evaluate and monitor to ensure the success of the programs.

Integrated Child Development Services Scheme- The scheme started in Karnataka in 1975 at T. Narasipura in Mysore District with 100 Anganwadi Centres has expanded to all revenue talukas in the state. The beneficiaries are pregnant women, nursing mothers, adolescent girls and children below 6 years. Karnataka is known to be a proactive state in the implementation of ICDS. In a study by Rajan et al., on “Integrated child development services in Karnataka” it was noted that in the year 2007-08 and in 2012/13 Kodagu was one of the most technically efficient districts.

Mid-Day Meal Scheme- This scheme has played a significant role in increasing enrolment and attendance of children in school and indirectly contributes to the nutritional security of children. As per the recommendations by the Ministry of Human Resource Development, the Mid Day Meal should contribute to calories and 12gram protein for Class I to V students and 700 calories and 20 gram protein for Class VI to X students.

Supplementary Nutrition Programme- As part of the ICDS program, supplementary nutrition is provided for 300 days in a year to beneficiaries: 0 to 6 years children - 500 calories of energy and 12-15 gram of protein, pregnant women/lactating mothers/adolescents girls 600 calories of energy and 18-20 gram of protein and for severely malnourished children 800 calories of energy and 20-25 gram of protein.

Table 1: Supplementary nutrition

No.	Age	Common Menu
1	6 months – 3 years	Nutrimix, wheat <i>ragi</i> , rice, green gram rice <i>khichdi</i> , rava <i>Payasa</i>
2	3 -6 years	<i>Chitranna</i> , rava laddu, rice <i>khichdi</i> , sprouted green gram, rice <i>sambar</i> , <i>chikki</i>
3	Adolescent girls	Multigrain <i>atta</i> , <i>chitranna</i> , wheat, green gram & jaggery

Ksheera Bhagya Scheme- Under this scheme, 150 ml milk for 5 days a week (15 grams milk powder and 10 grams sugar) is provided for 6 months – 6 years children.

Children (3 – 6 years), severely malnourished children (6 months – 3 years), severely malnourished children (3 – 6 years) are provided with eggs for 2, 3 and 5 days respectively. Children who do not consume eggs are provided 6 days milk.

Srusti- One large (53g) Grade A egg containing 6 g of protein and 70 calories is provided for 2 days for all children and for 5 days for severely underweight children in the Anganwadis to improve nutritional status.

Mathrupoorna (One Full Meal Programme)- One full meal is provided to pregnant women and breastfeeding mothers to meet 40-45% (RDA: 1342 calories, 41gms protein, 578mg calcium) of the daily calorie, protein and calcium requirement per day of the pregnant and lactating mothers. The meal consists of rice, dal with leafy vegetables/ *sambar*, vegetables, boiled egg, milk (200 ml) and *chikki* is

provided for a minimum of 25 days in a month. Menu flexibility without alteration to nutrition values is possible at district level. Iron Folic Acid (IFA) tablet is being administered with monitoring of gestational weight for pregnant women.

In accordance to the NFHS – 4 survey report, in India the prevalence of stunting and wasting was 38%, and 28.5% while in Karnataka it was 32.6% and 34.5% respectively. Some studies have reported very high prevalence of stunting and wasting in Mysore with prevalence of stunting and wasting being 55% and 43% in Hassan and 75% and 82% in *Kodagu* respectively. It was reported that Karnataka has a higher percentage of malnutrition than the neighbouring state in South India. Hence, malnutrition among children is still a significant problem in India despite global efforts to improve maternal and child health.

In the National Nutrition Strategy report by NITI Ayog on district analysis, *Kodagu* is not featured either in high burden / high priority districts or poor performing districts in terms of stunting. Based on the NFHS – 3 and NFHS – 4 report, significant improvement is seen, however there is still a strong need to continue to persevere against malnutrition. Under the ICDS, menu, nutrition counselling and nutrition education is an integral component. It's crucial to ensure provision of adequate nutrition, regular monitoring, follow up and inculcate nutrition knowledge supported by evidence-based practices. The programs undertaken by the Government of Karnataka can be given a sustainable nutrition dimension region specific.

RECOMMENDATIONS

The nutritional status of community is dependent on the food they consume which is further determined by availability, accessibility, affordability of food. Improved access to nutritious food, promotion of agriculture, encouraging native food, endorsement of the benefits of the locally available ingredients is a key component. Development of market-based solution for producers in alignment with healthy nutritious fresh food choices further percolated to consumers will contribute significantly.

Diets in India are traditionally cereal based with not much of diversity. Concept of “My Plate” for the day can be further promoted with the available local foods of *Kodagu*. This will facilitate a balanced nutrition plate with better understanding, utility further contributing to prevention of macro and micronutrient malnutrition owing to enhanced nutrient bioavailability. The plate illustration with the locally available crops, fruits and vegetables with a further step of building a cuisine plate will not only promote the ingredients of *Kodava* cuisine but also helps in nutrition security.

As part of the Food Safety and Standards Authority of India (FSSAI) mandate “Eat Right India” has been initiated to ensure that safe and wholesome food is being made available for people in India. The need to improve public health outcomes focussing on supply, demand and sustainability has been recognised. As envisaged, this initiative can be further taken to the grass root level with the help of the formulated Network of Professionals in Food and Nutrition (NetProFaN) with an inclusive approach of using local food and popularising the nutritional benefits of traditional cuisine. The mushrooming of retail outlets, hotel outlets have led to the decline in foraging and also consuming more foods not grown locally.

Kodagu cuisine has a whole array of healthy choices like *kadamabattu*, *akki ottis*, *kummu curry* and *thari payasa* which can be focussed not just at restaurants but also as part of Clean Street Food Hubs, Eat Right Campus with food safety. Promotion of the rich culture with the intricate cuisine will further ensure a healthier, better nourished at district level and finally culminate at national level.

Table 2: Foods recommended for the Eat Right Movement

Food Group	Dish
Cereals & nutri cereals	<i>Akki ottis</i> (rice <i>roti</i>) <i>Kadambuttu</i> (ball shaped rice <i>puttu</i>) <i>Thaliya puttu</i> (flat <i>puttus</i> steamed in plates) <i>Nool puttu</i> (thread <i>puttu</i>)
Pulse	<i>Kodava kanne</i> (dal curry) <i>Mudre Kanni</i> (Gravy of thickened juice of boiled horse gram) <i>Mole mudre kanni</i> (sprouted horse gram curry)
Flesh food	<i>Pandi</i> (pork) curry <i>Koli Chuttathu</i> (grilled chicken marinated with spices) <i>Attukal</i> soup (peppered lamb shanks in broth) <i>Kodava Meen Bartard</i> (fish)
Vegetable	<i>Kootu curry</i> (mixed vegetables in coconut paste) <i>Pallya</i> (vegetable stir fry) <i>Kumbala</i> (pumpkin) curry <i>Chouthe mor pajji</i> (cucumber <i>pachadi</i>) <i>Thoppu</i> (greens <i>pallya</i>) <i>Kaake thopp</i> (solanum nigrum) <i>palya</i> <i>Kake soppu</i> (Malabar spinach) <i>palya</i> <i>Therme thoppu</i> curry (tender leaves of a variety of fern) <i>Bollari barthad</i> (sauteed mangalore cucumber) Beans <i>barthad</i> (sauteed beans) <i>Toppu palya</i> (fresh double beans fry) <i>Kummu</i> curry (made from wild mushrooms) <i>Baimbale</i> curry (from tender bamboo shoots) <i>Chekke</i> (unripe jackfruit) curry <i>Chekke Kukku</i> (jackfruit seeds) curry <i>Kembu</i> (colocasia) curry <i>Kembu kande</i> (colocasia yam) curry <i>Mara kesavina dantu</i> (colocasia stem) saaru Colocasia (purple) stem curry <i>Baale Kaamb</i> (stem of banana plant) curry <i>Baale thand</i> (raw banana stem) fry / <i>palya</i>

	Banana flower <i>palya</i> <i>Kari Bale</i> (roasted raw banana patties) <i>Maange</i> (from <i>kaad maange</i> , wild mango) curry Steamed sweet potato
Sweet	<i>Thambuttu podi</i> (roasted rice, spiced with fenugreek seed, cardamom) <i>Koovale puttu</i> (made with ripe banana/ jackfruit) <i>Akki payasa</i> (rice with coconut milk & jaggery) <i>Theri payasa</i> (made with broken rice) <i>Semiya payasa</i> <i>Urad dal payasa</i> <i>Hesar payasa</i> (moong dal)

CONCLUSION

The nutritional status of the community is influenced by several factors. It's pertinent to identify the factors which contribute to the diet patterns, tradition, culture, local foods, its accessibility, availability and affordability with the transition that has occurred over a period of time. The macro and micro level of understanding of Indian food system with socio cultural aspects of dietary pattern will further strengthen food and nutrition security of the region to make policy decisions.

Several studies have been done to discuss the ecological damage that has taken place in *Kodagu* in the recent years. Ramachandra et al., in a study on urban dynamics in Coorg District, Karnataka states that the native vegetation cover including forest scrub forest and sacred groves have declined from 45.44 percent to 44.46 percent with loss of edge forests slowly being converted into open spaces. The land use changes assessment indicated agriculture areas are vulnerable to anthropogenic pressures with increasing societal demands around major towns owing to conversion of agriculture areas to resorts. This leads to an imbalance in the forest cover contributing to change in hydrological status, rising temperatures, increased soil erosions and further impacting on crop productivity. It is vital to look into ways of striking a balance to restore the flora and fauna and reintroduce the concept of forage.

Way back in 1884, Bhartendu Harishchandra, earliest supporter of Swadeshi movement in his speech, "*Bharatvarsh ki unnati kaise ho sakti hai*" (how can India Make progress), stated "As a thousand streams of the Ganges flow into the ocean, so the wealth produced in our country flows in a thousand ways to England. France, Germany and America " No doubt, urbanisation, deforestation, migration to different cities, increase in tourism has had an impact on the flora and fauna of Coorg. The diminishing culture is seen, however the roots to the tradition are still strongly connected among the Kodavas. It's time to fully exercise "Vocal for Local " initiative by the Government of India for greater food sustainability and security.

Positive nutritional outcomes can be achieved by seeing through the lens of food production, processing, marketing, nutrition, consumption and food safety with a strong handhold of nutrition policies. The ongoing COVID – 19 has compelled us to rethink many aspects including strengthening the agrarian

sector, establishment of agriculture-based industries in rural areas, traditional cuisine and food and nutrition security. It's time to retrospect, dwell in our roots, re-explore foraging and contribute to build a healthy nation with the abundant riches we have in our motherland.

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ANTHROPOLOGY OF FOOD AND DIETARY CULTURE OF KARAVALI AND MALNAD REGIONS OF KARNATAKA AND ITS ROLE IN HEALTHY DIET PLANNING IN CURRENT CONTEXT

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INTRODUCTION

Karnataka's prehistory dates back to Indus Valley Civilization 3300 BCE as the gold discovered in Harappa was found to be imported from the mines of Karnataka (Ranganathan, 2007). It was ruled by many emperors such as the Nanda Empire, Mauryan Empire, Satvahanas, Kadambas, Mayurasharma and Western Ganga dynasty, followed by the Badami Chalukyas, Rashtrakulas, Cholas and Hoysalas. Later the Vijayanagar Empire was a bulwark against the Muslim advances into South India for 2 centuries before *Bahmani Sultanate* rule took over this state who have immensely contributed towards the culture and architecture of this state (Urdu and Persian language and the Indo-Sarcacenic Gol Gumbaz).

Karnataka was also ruled by the Mughals which influenced their food culture along with heavy migration from the neighbouring regions of Goa (*Konkanis* and Catholics) due to food crisis and tax imposed by the Portugese (Pinto, 1999).

Later the *Nizams* of Hyderabad, Maratha Empire and the British ruled the Northern parts of the state while Mysore Kingdom (*Wodeyars* and later Haider Ali and Tipu Sultan), ruled the Southern parts (Kamath, 2007). The Kingdom of Mysore was restored to the *Wodeyars* and Mysore remained a princely state under the British Raj. When Portuguese arrived, Kannada dynasty was ruling the place. In 1799, British took over the region and divided the region into North Canara and South Canara. After

independence in 1947, the two districts were reorganized into the Mysore state which later became Karnataka. They were named as *Uttara* Kannada and *Dakshina* Kannada. (*Uttara* and *Dakshina* mean North and South respectively in Kannada). Thereafter, in 1997, Udupi district was separated from *Dakshina* Kannada.

Karnataka is divided into three regions based on the climatic conditions as the coastal region (Karavali), hilly region, (*Malenadu*) and the plains (*Bayaluseeme*). According to Severino da Silva, the ancient name for the Karavali region is *Parashurama Srushti*. This coastal region stretches along the Arabian Sea and the Western Ghats between Kasargod and Karwar. 'Karavali', is the *Kannada* word for 'coast' encroached by Portugese and named by British.

Mangalore, Udupi, Kumata, Karwar and Karkala are the important towns of this region where *Tulu* and *Konkani* languages are spoken. The three civil districts of Karavali are *Uttara* Kannada (Karwar, Kumta, Bhatkal, yallapura and Dandeli), Udupi, and *Dakshina* Kannada (Mangalore, Puttur, Sullia, Bantwal, Belthangady, Kadaba and Moodabidri) (Silva & Fuchs et al.,1965).

The name *Malenadu* literally means 'male' (rain) and 'naadu' (region). *Malnad* is a portion of the Deccan plateau, to the east of the Western Ghats. *Malnad* covers the Western and Eastern slopes of the Western Ghats of Sahyadri mountain range roughly 100 km in width and is a hilly terrain situated in the heavy rainfall belt and named as the "Cherrapunji of Karnataka".

The civil districts of Malnad are *Uttara* Kannada (Karwar, Kumta, Bhatkal, yallapura and Dandeli) Chikmagalur, Shivamogga, Hassan, Kodagu and Belgaum.

GEOGRAPHY

The state has three principal physical zones. The Kanara region forms the Karnataka coast situated on the south-western portion of Peninsular India. Coastal Karnataka forms the northern segment of the Malabar Coast. The Western Ghats, called *Malenadu*, a mountain range islands from the Arabian Sea, rising to about 900 m average height, and with moderate to high rainfall levels. The Deccan Plateau, called *Bayaluseeme*, which is drier and verging on the semi-arid. It is divided into the Northern and Southern *Bayaluseeme*. The northern part is dry and plateaus lying between 300 to 700 meter elevations (Pushpa Narayan, 2005).

Krishna River is the main source for irrigation along with its tributaries such as Bhima, Ghataprabha, Malaprabha and Tungabhadra Rivers. The Southern part has low rolling granite hills from 600 to 900 meters elevation. The hilly zone (*Malenadu*) covers the districts of Chikmagalur, Hassan, Kodagu (Madikeri) and Shimoga and some parts of *Uttara* Kannada. These districts are connected to Western Ghats in the East with abundant natural biodiversity, and the state forest region falls within these districts. This climatic condition is suitable for plantations of coffee, pepper, cardamom and rubber are interspersed with dense forests (Environment Database, 2007).

AGRICULTURAL CROPS OF MALNAD AND KARAVALI REGION

Crops production is dependent on the rainfall in that particular region. In Karnataka more than 70 per cent of the cropped area that is rain-fed. The districts located in the southern region and coastal line

of the state such as Chikmagalur, *Dakshina* Kannada, Kodagu, Shimoga, Udupi and *Uttara* Kannada, received an average of 2,000 mm of annual rainfall. Whereas, in the hills and coastal region, the cropping system is paddy (rice) based, therefore Rice is the staple food of this region, there are some pockets in this region where *ragi* also forms an important component of the cropping system along with rice. Paddy, coconut and cashew are the major agricultural products of the Coastal region.

Paddy, sugarcane, arecanut, coconut and spices are major agricultural crops of the Malnad region. Paddy, sugar cane, *jowar*, millet, cotton, tobacco, groundnuts, coconuts and fruits are the major agricultural crops of Bayaluseme.

Agriculture and animal husbandry plays an important role in the overall growth of the state's economy. In Karnataka, vegetable production is quite high, due to the favourable climatic conditions. It is also known for the floriculture, silk production and fisheries sector is emerging as the most important sector in the allied agriculture activities in the state. There are different types of soils in Karnataka. The varied types are recognized based on the differences in soil formation processes and nature of the soil. Black soil is found in northern Karnataka. Red soil is the most widespread soil type in Karnataka. Red loamy soil is prominent in southern Karnataka. Laterite soil is found in Malnad and coastal areas of the state. This type of soil is favourable to grow paddy and *ragi*. Therefore, Rice is the staple food of this region. The demand for land resources is increasing due to the increase in commercialisation of productive land for non-agricultural uses for urbanisation, infrastructure projects, dams, irrigation systems, industries, mines and quarries.

LOCAL FOODS AND THEIR NUTRITIONAL IMPORTANCE

It is difficult to define local foods, there is no clear definition because, and this can be defined and customised as per the individual's perspective, need and usage. Literal definition of local food is "food that is available locally". This means food that is available within the vicinity, within a few meters radius of the specific region. Local food purchase gives business opportunity to local farmers and in turn contributes to uplift and improve the economic status of that region.

Local foods are cheaper, safe, and fresh. To an extent local food gives reassurance to the consumer about the quality of the food purchase. Because the customer is aware about the local practices of the farmers, usage of pesticides, type of soil and its benefits and also the climatic conditions that support the produce. Consumers are aware about the quality of the food that is consumed. Local foods add variety to the cuisine based on the seasonal changes. They are nutritionally better than those which are transported for days together. Because, immediately after harvesting it comes to the consumer within a couple of hours, facilitating moisture retention, preserves the nutrients and contributes to the palatability of the cuisine. Local foods partially promote the eating pattern of that particular region and makes food more affordable to the population. This will provide good health and promote sustainability of local foods.

Malnad and Karavali region is covered with dense forest and the speciality of this region is, the vegetation of that region can be transformed into food. Therefore, the food habits of these regions have been influenced based on the local produce. It is a paradise of vegetables; it promotes the sustenance of the rich vegetarian culture and heritage of eating exotic vegetables, for example, bamboo shoots as a daily routine dish.

FOOD CULTURE OF KARAVALI REGION

Karavali cuisine is popular for *Jowar rotti*, *Chapati*, *Ragi rotti*, *Akki rotti*, *Saaru*, *Idli-vada Sambar*, *Vangi Bath*, *Khara Bath*, *Kesari Bath*, *Ragi mudde* and *Uppittu*. The *rottis* are relished with the usual accompaniments like chutney *pudis*, like *shenga* (peanuts) *pudi*, *uchchal* (niger seeds) *pudi*, *agasi* (flax seeds) *pudi* and garlic *pudis* and curries like *ennegai* (brinjal curry), *kaalu* (whole grams) *playas* and green leafy vegetables. Greens are the integral part of the meal, it is consumed in cooked and uncooked (*Methi* leaves) forms with *rottis*. The cuisine of Karavali is dominated by coconut and fish, since this is a coastal region. Coconut adds a distinct taste and thickness to most of the dishes.

The staple food of Karavali is rice and its products. Apart from white rice, parboiled rice is also popular here. *Ganji*, is a rice gruel, made with parboiled rice or polished rice, with only salt for taste, usually consumed with pickles as an accompaniment. This gruel is an option for Breakfast, lunch and dinner.

Karavali cuisine is more like Kerala cuisine using steaming as a favoured cooking method for most of the dishes. Karavali cuisine includes *idlis* and *dosas* for breakfast. Another popular version of *idli* called *moode* or *Kadubu* in *Tulu* (other languages in the region have other names) is best prepared in moulds of *kedige* (pine) leaves, which gives it a distinct flavour. Steamed breakfast option, *pundi gatti* (Rice dumplings) is another similar dish.

Neer Dose or *Bajjere* (*Bajji ari*) *Dosa* is another delicacy, prepared with rice. Thinner and crispier, it is eaten for lunch along with chicken curry, but vegetarians eat it as a breakfast option with chutney or mixture made up of jaggery and coconut. Other variations of the rice pancake are also common such as with red chilli added, with lots of vegetables added to it.

The *Shevige*, or rice noodles, is another unique dish. *Upma* is called *uppittu*, and is naturally prepared with a lot of coconut. Also, *avalakki* or flattened rice, is prepared with a masala, which is a light and tasty breakfast option.

Lunch and dinner in this region usually consists of rice with wet and dry curries. The South Indian *sambhar* is called *huli* in Kannada. It is thicker in consistency because coconut is one of the ingredients.

Menaskai and *Majjige Huli* are the variants of *sambhar*. The *Majjige Huli* or *Kodakyana* is a dish where the *sambhar* is cooked with butter milk to give it a nice sour taste. Karavali cuisine makes excellent use of leafy vegetables. They are used as the main ingredient for curries, they are used to wrap around the main ingredients to add flavour while steaming. A special mention is of *Basale* or Malabar Spinach, is used to make *sambhar* called as *Basale huli*, which is a delicacy.

Other vegetables characteristically used in Karavali cooking are raw bananas, banana stem and banana flower. Pumpkin, the ash-colored is used in abundance. This region is also known for a variety of eggplant (locally called brinjal). During summer, preparation of mango is quite popular, both raw and ripe.

Jackfruit is another awesome fruit that has its origins in this region. Its raw form is used as a vegetable. The ripe fruit can be eaten uncooked or made into a wide variety of preparations. Breadfruit

is another fruit which is tasty only when it is cooked as a vegetable. Banana is another very commonly available fruit, *elakki bale* (literally, cardamom banana, so called because it tastes like the banana has been flavored with cardamom) or the *pachhe bale*, (literally, green banana, but it is not actually green. Also *Nendra bale* is one variety of Banana, which can be eaten after being slightly heated on a pan.

Since, Karavali region includes towns of *Uttara Kannada*, *Udupi* and *Dakshina Kannada* district, its cuisine has a lot of influence of Mangalore and *Udupi* cuisine significantly. There is coconut and curry leaves while spices like ginger, garlic and chilli are also used. Mangalore cuisine has distinct Portuguese influence; therefore, it includes meat such as Lamb, Pork and Beef in the cuisine. These non-vegetarian dishes are quite popular for their unique taste and combination with cereal based preparations like *Idli*, *Dosa* and Rice. The traditional *Rosachikadi* (Ros Curry), a fish curry made coconut milk is quite popular.

Udupi cuisine compliments Karavali cuisine by adding the essence exotic vegetarian dishes, that are made of grains, beans, vegetables, and fruits and also. It includes the *vedic* tradition of Indian vegetarian cuisine, such as no onions or garlic, no meat, fish, or shellfish. Pumpkins and gourds constitute as the main ingredients in *sambhar*, ground coconut and coconut oil is also used to enhance the taste.

A TYPICAL DISH CONSISTS OF ALL THE FOOD GROUPS

1. Pulse based preparation : *Saaru* or *rasam* and *Hulli* or *sambar*
2. Vegetable preparation: *Tambuli* or watery vegetable paste (generally leafy vegetables) seasoned, *Ajadina* (dry curry), *Kosambari* (seasoned salad of lentils), vegetable fritters (*Bajji*), *Kayathno* or *KaaYaadhina* (fried items)
3. Cereal Based preparation: *Chitranna*, *Adde* or *Uh-day*(dumpling)
4. Pulse based dessert: *Holige*, *Bakshya* (sweet or dessert)
5. Cereal based dessert: *Paramanna* (Rice kheer), *Paayasa*
6. Fruit based Preparation: *Rasayana* (juice or squash or syrup), *Mambala*, dried mango pulp made into sheets and stored.

DISHES SERVED IN A FULL COURSE VEGETARIAN KARAVALI (UDUPI) MEAL

The full course *Udupi* meal is served on a plantain leaf, which is traditionally supposed to be placed on the ground. The dishes are served in a particular sequence, and each dish is placed on a particular spot of the plantain leaf.

A full course meal is served with Salt, pickle, *Kosambari* (seasoned salad made from split bengal gram or pea), *Bajji*, Chutney, *Gojju*, *Ajethna*, *Chitranna*, *Appalla* Steamed rice (plain rice cooked in steam or boiling water), *Saaru* or *rasam* (a spicy watery soup), *Menaskai*, *Sambhar*, Sweets like *laddu*, *holige*, Fried items like *vada*, *bonda* and *chakkuli*, *Paramanna* or *Kheer* (pudding), *Payasa* and Butter milk/curd (in sequence).

Depending upon the occasion, taste and ingredients are decided to formulate the meal. Some of the delicacies of *Udupi* cuisine, which constitutes as Karavali cuisine are *Sajjige* and *bajil* (*upma* made

using coarse semolina and seasoned beaten rice), *Uddinahittu* (urad flour mixed in curd and seasoned), *Kosambari* (salads of green gram lentils and cucumber with seasoning), Different varieties of rices, such as *Bisibele bath* or *Chitranna*, types of *Dosas*- *masala dosa*, *neer dosa*.

Desserts- Sweet dishes like *maddi*, *undae* (*laddu*), *kayi holige*, *Kashi halwa* from pumpkin and bottle gourd, jackfruit and banana. Puddings or *parammanna* or *payasa* or *kheer*, Mangalore *bajji* or *golibaje*, *Pelakai Gatti* (jackfruit dumpling), *Pelakai Appa* (fried dumplings made from jackfruit), *Pelakai Halwa* (jackfruit halwa), *Ghasi* (thick gravy like dish made by use of peas or pulses with coconut), *Patrode* (colocasia leaves dipped in gram dal batter and steamed cooked), *Menaskai* (especially made of *Amtakai* or *ambade*), *Putnis* (curd based preparation), *Kadubu* (steamed dumplings with coconut and jaggery filling or spices).

Some snacks such as puffs (*neuries*), stuffed with plums, nuts, and fried *til* seeds (sesame) and sugar. *Kulkuls* are curly concoctions dipped in sugar syrup, *pathekas* are savoury of green *nandarkai* bananas, *til laddus*, macaroons (rose cookies), rich Plum Cake is a special dessert made candied fruit; plums, currants and raisins are finely cut and soaked in rum. Nuts also are chopped and added and the whole family comes together to make the cake.

FOOD CULTURE OF MALNAD REGION

The cuisine of Malnad region is heavily influenced by the variety of fruits and vegetables available in the rich forests of Western Ghats. The ingredients like tender bamboo shoots, colocasia leaves, turmeric leaves, and raw jackfruit are prepared on a daily basis. Steaming is the favoured method of cooking in *Malenaadu* region too, steam cooked rice dumplings and rice cakes is served along with spicy hot chicken *saaru*.

Traditional meal of Malnad region consists of *Holige* and *thupa*, *Kadubu*, *Idiyappam*, *Gangalada Dosa* with *meenu masala*, *Harlikai Gojju*, *Kosambari*, *Kalule Palya*, *Halsinkai*, *Bendekai gojju*, *Hurlisaru*, *Kaima unde*, *Eery fry*, *Kesa*, *Mavinhanina Gojju*, Steam rice with *rasam*, *Mamsa Dry Fry*, Curd Rice, *Halagana Hittu* and *Khus Khus payasam*. Every south Indian meal starts with jaggery or milk based dessert, it is considered to help in digesting spicy food easily.

Kai obattu* or *holige, is a coconut stuffed flatbread. A traditional meal in Karnataka, Tamilnadu and Andhra pradesh, will start with *holige*.

Akki Rotti - These gluten free rice breads are very delicious with ketchup or coconut chutney.

Suggi Kaddubu - Butter dumplings prepared with cream of rice, coconut and butter, served with chicken curry or vegetable curry.

Neer Dosa - Gluten free *dosa*, prepared with rice and coconut.

Halasina Kaddubu - Jackfruit and rice dumplings are lightly pan fried with ghee and served with honey and ghee.

Gangalada dosa - Soft and fluffy pancakes, prepared in earthen pots fried in ghee and served with mutton curry.

Khus Khus payasam - Poppy seeds, Cardamom and Cashew custard.

POPULAR NON-VEGETARIAN DISHES OF MALNAD REGION

Pandi Curry or pork in spicy and sour gravy made from *Kachampuli*, a black vinegar is popular. Black vinegar is made from black kokum fruit. This is a legendary dish which has an influence of Kodagu cuisine of Coorg.

Chicken and mutton is also preferred by non-vegetarians, but pork is most-preferred meat. ***Nati koli sukka, Anjal fish,*** Chicken ghee roast, ***Mamsa*** fry are common.

Keema Unde - These mountain goat meat balls are prepared with special coriander based masala which are moist in texture.

Mutton Sukka - Morsels of tender mountain goats simmered with spices and fried

Kozhi Saaru - Spicy, coconut based chicken curry paired with all flat breads, and rice dumplings.

Thalai mamsa - a lamb preparation are generally eaten with a crisp thin *roti* called '*kori roti*' or steamed *sannas* made from red rice. These are the dishes influenced from Mangalorean cuisine.

LOCAL FOOD PREPARATIONS OF MALNAD REGION

Patrode - A tasty, healthy and steamed preparation made with colocasia leaves, rice, spices and jaggery. It is known as *Patra* or *Arvi* leaves in west and northern parts of Indian and made with different spices.

HalasinahanninaMulka - A sweet fritters made with ripe jackfruit, rice and jaggery.

Thambuli - A simple yogurt based accompaniment served with hot rice. There are different versions of *thambuli* that are generally prepared using fresh fenugreek leaves or fenugreek seeds or *ajwain* leaves or the *brahmi* leaves.

Halasina Hannina Kadubu - A healthy and aromatic steamed breakfast preparation made with ripened jackfruit. *Idli* batter is made with ground jackfruit, jaggery, semolina, cardamom and steamed in banana leaf.

HalasinaKayi Happala - Delicious *papad* (*poppadum*) made with raw jackfruit. Steamed raw jackfruit is mashed, pressed, sun-dried and stored in an airtight container. These *papads* have to be deep fried and served.

AppeHuli -- A spicy, tangy, soup made with raw mango.

Popular Snacks Specific to this region

Aloo Bonda, Bonda or ***Bajji*** - deep fried vegetables (and sometimes chicken and seafood) in batter, ***Baalaka*** - deep fried vegetable & fruit chips or wafers. The vegetables are usually dried and seasoned with spices, and even butter milk. Commonly used vegetables are potato, sweet potato, yam, cassava, ripe jackfruit, banana, plantain, chilli and bitter gourd. ***Chakkuli, Kodubale, Nippattu, Vadey - Ambode, Sabakki Vada, Belevadey*** etc.

Some of the popular vegetarian dishes

ThailPiao, which means literally vegetables dumped with oil and onions and left to boil on the fire wood is quite popular. *Karamb* (Cucumber salad) and *Foka* (Lady's finger combined with cashew nuts). The *Appam* (rice balls) and *Panpole* (a type of porridge) made of soaked rice, water and salt. The *Thath Bakri* is a banana leaf rice dish made with ground red boiled rice mixed with scraped coconut and roasted on a *tawa* on a banana leaf. Other vegetarian dishes are *Unde Kadubu*, *Huliavalakki*, *Ondelaga Thambuli* & *Shunti Thambuli*, *Chitranna* (Lemon Rice), *BeetRoot Palya*, *Sajjige Uppittu*, *Akki Rotti*, Coriander leaves *Doddapatre* chutney, Ridge Gourd *Dosa* and peel chutney, *Bellada Panaka* and Pumpkin *Idli*

Desserts

The *Mitais* (Deep fried and sugar coated sweet diamonds), *Mandas* (cucumber and rice based sweet), *Ushae*, *Pitae* and *Mani* (Rice *Halwa*) are well known sweet dishes. Apart from these, *Kai Holige* and *Gasagase payasa* are the popular desserts of this region.

IMPACT OF GEOGRAPHICAL LOCATION ON FOOD HABITS IN MALNAD AND KARAVALI REGION

This **wild edible vegetable** plant species can be utilised without any cost for day to day requirements of tribal and rural people of Karnataka state. These locally available vegetables and greens are wild, edible plants, available in the hilly region and can be used for the preparation of various regular recipes. Research says, this local produce helps in overcoming malnutrition and also improves the health status, by enhancing their immune system.

These vegetables and greens are organic in nature and rich in micronutrients, such as minerals, proteins, calcium, phosphorus, manganese, potassium, amino acids and dietary fibre. Further studies are needed to get enough evidence about the amount of nutrients present in these commonly available wild edible vegetables to ensure they are nutritionally abundant to meet up the requirements.

Most of the routine foods are well known for the medicinal benefits, in the form of various concoctions called *tambuli* made from *arshina* (raw turmeric), *nellikayi* (gooseberry) or *doddapatre* (carom leaf) etc. In this region festivals begin with a digestive drink prepared using *Appekayi* (raw mangoes).

The 'medicinal leaf', *madduthoppu* (*Justiciawynaadensis*) grows wild in this region, which is harvested in the monsoon month of *kakkada* during the heaviest period of rain from mid-July to mid-August. It is believed that on the 18th day of *kakkada*, its medicinal properties are at their peak and contain 18 benefits.

The stem and the leaves are used to prepare a deep purple extract used for *maddputtu* (steamed cakes) or *maddkoolpayasa* (sweet porridge). It is also used for medicinal purposes, to treat coughs, sore throats, nasal congestion, infections, rheumatism, fever, chronic asthma, hiccup, bronchitis, convulsions, epilepsy, skin ulcerations, insect bite, skin allergy, wounds and diarrhoea. It helps in cancer prevention, kidney diseases, treats indigestion and improves liver functions. One of the most commonly used green is *Doddapatre* leaves, it is known to relieve cold, fever, respiratory issues, skin allergy or insect bites.

Dietary patterns are also influenced by the local produce and the cultural and socioeconomic background of that region. Traditional foods are at risk of disappearing due to increasing globalization and westernisation of the food market. Therefore, documentation of traditional recipes and dishes is essential for sustaining traditional foods. It is also contributing to the culture and heritage of the region. Although, the concept of cultural anthropology reveals that food habits showcase cultural behaviours with regard to food displayed by a specific cultural tradition.

A description of the food habits pattern of a culture can be approached in different ways. For example, a study on food habits is to study the ways in which within any given culture, healthy eating habits are inculcated in the growing child. This approach involves elaborate description of the eating pattern during pregnancy, postpartum procedures, during breastfeeding, supplementary feeding pattern, weaning foods practices. This gives an exposure to include all socially prescribed foods and also gets acclimated to the tradition and culture.

Therefore, tradition is influencing the food habits of an individual; a slight change to modify and fortify foods would be appreciated and well accepted using locally available foods. These are fresh, cheaper and safer to be used in liberal quantities. These are cost effective; hardly alter the taste and appearance of food. This transforms the food supply chain constantly affecting the producer and supplier systems through the purchase of local and inexpensive products, contributing to sustainability of food produced in that region.

Transitional and innovative projects are taken to increase low cost food production and sustainability of the food produced in Malnad and Karavali regions and their towns. Researchers have proved that eating habits have an impact in changing people in several aspects. Research has revealed that it is challenging to determine the real food needs of a given community. Therefore, this feature of sustainable or healthy food consumption often changes, and depends on the ethnicity of a given community. Although cultural influences have an impact on the consumer environment, food supply systems are unpredictable. Sustainability of food can be expected based on the strength, appearance and its strong influence, on the supply chains.

TRADITIONAL RECIPES AND THEIR NUTRITIONAL INFORMATION

Traditional foods have a major role to play in defining the culture of that particular region. With time, these traditional foods have been influenced by many factors. It is dependent on the availability of fruits and vegetables in different seasons. Especially, in high and low altitude regions, due to the variation in type of vegetation. Traditional foods add variety, it is specific to the season, it is balanced and nutritious, and it is also known to meet up the nutritional requirements of an individual. Moreover, slight modification to the traditional diet to make it modern would be well accepted and be more appropriate to meet up the demands of the 21st century.

REGIONAL FOODS/ DISHES OF THE MALNAD AND KARAVALI REGION AND THEIR HEALTH BENEFITS PERTAINING TO MIYCN

Food item	Health Benefits	For Eat Right Movement
CEREAL BASED FOODS		
<i>Chitranna, Puliogare, Bisibelebath, Pongal, Rava</i> and Vermicelli <i>Uppittu, Gojju, Avalakki, Sambar</i>	Energy source Protein Micronutrients Fibre	Can be used in School Nutrition Programme(SNP) by the Government and included in the community Nutrition Programs
PULSE BASED FOODS		
<i>Sambar, Rasam, Kootu</i>	Protein source Energy source Micronutrients dense	<i>Sambar</i> will be a good option for the School Nutrition Program (SNP)
VEGETABLES AND GREEN LEAFY VEGETABLES BASED FOODS		
<i>Sambar</i> and <i>playas</i> made of exotic vegetables like bamboo shoots and accompaniments made from fruits like jackfruits and banana <i>Kosambari</i> and salads <i>Pathrode</i>	Fibre rich Micronutrients dense Antioxidants MCT rich	The local vegetable based <i>palyas</i> can be used in the MIYCN nutrition programs which will provide good Vitamins, minerals, and fibre rich foods for the undernourished. Colocasia leaves are packed with nutrients, like β -carotene, ascorbic acid, folic acid, riboflavin, B vitamins, vitamin A and minerals such as iron, calcium, potassium, phosphorus, magnesium. Good for Anemia prevention in children Good sources of Vitamin B6 (pyridoxine), niacin, riboflavin, and folic acid.
MEAT/CHICKEN/EGG BASED FOODS		
Egg curry chicken curry Mutton curry and dry Fish fry and curry Pork curry	High Biological value protein Micronutrient rich Immune boosting	Not all children will be non-vegetarians, also it will be a huge cost to have it implemented for SNP Egg are a good option for undernourished children, adolescent girls, pregnant and lactating women

SUGAR AND JAGGERY BASED DESSERTS		
<i>Huggi, Haiagreva, Haalbai Bele Obbattu, Payasa</i> made with palm jaggery	Energy Protein Fat Minerals	Jaggery based steamed sweets are nutritionally better and cost effective to be used in SNP and MIYCN program for the children, of different age category and pregnant and lactating women
DEEP FRIED SNACKS (FAT BASED)		
<i>Vadey, Chakkuli, Kodubale, Nippattu Kardantu</i>	Energy Fat Micronutrients Immune boosting	These deep fried snacks can be included as a delicacy, not as a regular diet option. These are high in fat, the only feature that can be considered is the longer shelf life and can be made in bulk. Dry fruits being the ingredients of some of the snacks. There might be a cost constraint.
BEVERAGES		
<i>Coffee/ Tea, Badami Haalu, Appe kayi Paanaka and Neer Majjige, Bellada Panaka Gasagase Payasa</i>	Fluids Minerals Immune boosting	The <i>Appe Kayi Paanaka</i> and the <i>Neer Majjige</i> can be used as Mid-morning and mid-evening snacks. <i>Badam</i> Milk can be used for undernourished children as in between snacks.

CONCLUSION

Food consumption is beyond meeting up the nutritional requirements of an individual. It symbolises the culture and tradition of that region. Food preferences change with change in culture and tradition. Other factors that can influence food patterns are climatic conditions and geographic factors. This offers variety to the regional cuisine. Moreover, origins of different religions also have contributed to the different eating patterns, such as vegetarian and non-vegetarian foods.

Therefore, adhering to the regional food habits to meet up the nutritional needs of the population, in terms of energy, protein and fibre requirements has become a challenge due to the diverse eating habits. Different altitudes and availability of vegetation in that region also contributes to the eating pattern. Traditional foods are known to offer nutritional support from times immemorial. Government schemes and development initiatives have also been designed to target the nutritional status of mother and child on the basis of traditional foods, their availability and its distribution. These programs ensure that the nutritional requirements are met for growth and development of the infants and young children. Therefore, these policies offer nutrition security to the deprived in the community and contribute to a healthy community, society and country.

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HEALTHY TRADITIONAL DIETS ACROSS LIFECYCLE – DHARWAD, KARNATAKA

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ABSTRACT

Traditional foods are foods that people have consumed for ages and are a blend of customs, culture and traditions. Such foods are generally based on local staples with more manual and less minimal industrial processing. Situated in Karnataka state, Dharwad is district headquarter, consisting five important talukas viz., Hubballi, Kalaghatagi, Kundagol and Navalgund. Majority population of Dharwad district are vegetarians and their main diet is *rotis* made by *jowar*, wheat (*chapati*) and to some extent by *bajra*. Rice is also the staple food and all types of pulses, vegetables and fruits crops except temperate ones are grown here. Apart from serving as functional foods, the traditional foods of Dharwad exert nutraceutical effects. With nutritional sufficiency in macro and micronutrients, traditional diets provided a healthy lifestyle. The shift in consumption pattern from starchy staple to high value foods has led to malnutrition. It's high time to revert back to our traditional diets whose foundation is laid by our ancestors to bring back healthy life.

INTRODUCTION

Situated in the Northern half of Karnataka State, the word 'Dharwad' means a place of rest on a long journey or a small habitation. The district is bounded on the North by the District of Belgaum, on the East by the district of Gadag, on the South Haveri and on the West by Uttara Kannada district. The name is derived from the Sanskrit word '*dwarawata*', '*dwara*' meaning 'door' and '*wata*' or '*wada*' meaning 'town'. For centuries, Dharwad acted as a gateway between the Malendu region and the plains, and it became a resting place for travellers.

Population are followers of diverse religions including Hinduism, Islam, Jainism and Christianity. The widely spoken language is *Kannada* (Dharwad *Kannada* has a special accent), followed by Urdu, Marathi and Hindi. Evidence of population in Dharwad, dates back to early Paleolithic age. It was ruled

by various dynasties from the 5th century onwards namely the *Badami* and *Kalyan Chalukyas*, *Rashtrakutas*, *Vijayanagar*, *Adilshahi*, Mysore kingdom and *Peshwas* of Pune. Due to the rule of *Peshwas*, influence of Marathi is seen in the early decades of the 19th century. During the British rule, Dharwad became the divisional headquarter of educational administration and Kannada the vernacular language of the people gained prominence (Bopanna, 2019).

AGRICULTURE

Dry farming is the backbone of the agricultural economy. Agriculture is even now a labour-intensive enterprise. Hence the district has an above average proportion of workers in its population and offers opportunities to seasonal workers (Dharwad district profile). The district is approximately about 800 mts above the sea level and enjoys moderate and healthy climate. The district is divided into 3 natural regions, viz., the Malnad, Semi-Malnad and Maidan. These regions, on an average, receive moderate to heavy rainfall and have dense vegetation. Kalghatagi and Alnavar area in Dharwad taluka in particular receive more rainfall than other talukas of the district.

Small farms dominate the agricultural economy of Dharwad and grow food crops which are commercial crops. Medium and large farmers diversify their cropping and devote a good part of their farms for different crops (Kadapatti and Bagalkoti, 2014). Majority are grown in *Kharif* as they depend on rains. *Rabi* crop is taken in farms only with irrigation.

After paddy, *Jowar* is the second most important crop grown as the staple food of the people (*jowar roti*) and the stalks of jowar plants are used as cattle fodder. Presence of black soil also helps in raising other crops such as cotton, wheat, ragi and oil seeds and red soil is more suitable for paddy (Dharwad district profile). Majority follow monocropping with few take up multiple cropping. Various crops produced in Dharwad are outlined below.

1. **Cereals** – Paddy, *Jowar*, *Bajra*, Maize, Wheat and *Ragi*
2. **Pulses** – Horse gram, *tur*, green gram, black gram, cowpea and *avare*
3. **Oil seeds** – Groundnut, sun flower, soybean, linseed, niger, safflower and sesamum
4. **Commercial crops** – Sugarcane and cotton
5. **Horticultural crops** – Mango, banana, guava, sapota, pomegranate, potato, tomato, green chillies, onion, arecanut, cashew nut and coconut

FOOD CULTURE OF DHARWAD

Traditional food system plays a significant role in maintaining the well-being and health of indigenous people. Dharwad has different agro-climatic conditions and food habits. Dharwad cuisine, encompassing the region of North Karnataka, has a diverse collection of dishes.

However, for the most part, these dishes are vegetarian due to the dominance of the vegetarian *Lingayat* community in the area. The cuisine is based on *jowar* (sorghum/millet) and wheat, made into *jolada rotis*, made from *jowar* (Cuisines of Karnataka, 2019a). Rice is also the staple food and all types of pulses, vegetables and fruits crops except temperate ones are grown here.

Jowar roti, *enagayi pallya* (brinjal), *madike kalu pallya* (sprout moth bean), groundnut chutney powder, flax seed chutney powder, curds, *godhi huggi* (sweet made out of wheat, jaggery and milk), *anna* (rice), *saru* (*sambar* made out red gram dal), *majjige* (buttermilk) is the famous style of food in the region.

Other accompaniments of *rotties* are the dry chutney powders such as *shenga pudi* (spicy peanut *uchchellu pudi*, *agasi pudi*, garlic pudis and curries, including the popular *yenne gai*, *kaalu palyas*, greens, dals and mixed vegetable curries. Greens are an integral part of the meal.

Milk and other dairy products, fruits, nuts and oilseeds are consumed less frequently. Traditionally, Dharwad diet uses natural ingredients and practices, a sit-down meal with family or friends. Dharwad traditional foods are based on a combination of ingredients. Apart from serving as functional foods, the traditional foods of Dharwad seem to be exerting nutraceutical effects, social and economic benefits. The spices and condiments with volatile contents exert anti carcinogenic, anti-inflammatory, antidiabetic properties etc (Singletary, 2010).

Mandakki or puffed rice is a common snack, presented in assorted flavours like *Girmit*, *Nargis* or *Khara Mandakki*, often paired with *mensinkayi bajji* (chilli pakoda). For breakfast, puffed rice is lightly soaked and tossed with seasoning into a light fluffy *poha* called *allu susla*. An unusual dumpling steamed on fresh corn leaves: The ladies rolled out *kuchida kadabu* (wheat dumplings), *kudisida kadabu* (stuffed dumplings) and *uggi* chapattis, steamed on green corn husk and served with spicy *kempu* (red) chilli chutney and ghee. Little dough beads were pressed on a comb for stripes and shaped into miniature shells.

Dharwad's twin-city Hubballi is dotted with Lingayat *khanavalis* like Basaveshwara and Savaji eateries like Nakoda and Devika standing cheek-by-jowl with brass bands and ammunition shops. Durgada Bail, the city's legendary *Khau Galli* (Eat Street) fires up the evening with snack stalls serving *masala dosa* and tomato omelette.

FOOD, FESTIVALS AND SWEETS OF DHARWAD

In Dharwad jowar belt, sorghum/millet is used to make *jolada roti*, served at eateries. In the 12th century, the philosopher saint *Basavanna* started the *Veerashaiva Lingayat* faith, marked by the worship of *Shiva* and vegetarianism. The unusual delicacies like '*tingal avrekayi palya*', a dish made from a local bean available only for a month (*tingalu* in *Kannada*). *Soute bija huggi* (broken wheat *kheer*), so called because it resembles tiny *soute bija* (cucumber seeds), features in all functions. Rolling out the little pellets of broken wheat dough is tedious.

Typical meal patterns of the *Veerashaiva Lingayat* faith is *jolada roti* with *jawari doddmensin kayi palya* (stuffed country capsicum curry), tempered down with curd, *gulagayi yenagai* (country cucumber fry), *jawari mensinkayi* (pan-fried country chilli), *majjige saaru* (buttermilk curry) and *karchikai palya* (*Momordica cymbalaria*), a little pod that must be consumed right after harvest, before it bursts open (Mallick, 2017).

Use of *holige* (*parota* stuffed with sweet made by Bengal gram dal and jaggery) is common. *Jowar rotis* form bulk of food and a green variant, *sajje rotti*, is prepared during *Sankranthi* festival since *sajje*

is grown during this season. People celebrate the *rotti habba* twice a year, during *Sankranthi* and *Nagarapanchami*.

During *Nagarapanchami*, the womenfolk have just *palahara*, which is basically a light meal. For this, they prepare a host of sweets like the *sev laddu*, *gulige unde*, *besan laddu*, dry-fruits *laddu* and *rava laadu*. The savouries include *thambittu*, *chivdas*, *chakli* etc.

The Dharwad *peda* story began 175 years ago, when Ram Ratan Singh Thakur migrated from Unnao due to the plague and started making them for a living. His grandson Babu Singh Thakur popularised it and people formed such long queues at the shop that the area was named *Line Bazaar*. In 1933, a penniless Avadh Bihari Mishra settled in *Line Bazaar* and got into the business. Today, Mishra *peda*, with its industrial production and multiple outlets across cities, has made the Dharwad *peda* a household name.

Kardant invented in *Amingad*, was popularised in Gokak. In 1907, *Savaligappa Aiholi* of *Amingad* mixed dry fruits like pistachio, almonds, cashew, dates, figs, *copra*, jaggery and *antu* (edible gum) and fried them together, creating the *karadi-antu* (fried gum). Like a nutty granola snack, it became popular among those frequenting *garadimanes* (wrestling *akhadas*) and can be promoted as a healthy superfood for the sports persons.

TRADITIONAL RECIPES OF DHARWAD

Starchy staple- *Bajra roti*, *Chapati*, *Churmary chuda*, *Dosa*, *Navane/hurakki holige*, *Idli*, *Jowar mudde*, *Jowar roti*, *Jowar nuchu*, *Madeli*, *Maize roti*, *Masala rice/palav*, *Paddu*, *Poha*, *Puri*, *Rice*, *Rice papad*, *Rice sandige*, *Sabbakki/ bagar*, *Sago sandige*, *Thalipatti*, *Upma*, *Vadi*, *Vermicelli upma*, *Bichagadabu*, *Undigadabu*, Puffed sorghum and *Kuchchidakhara* (Somannavar, 2018).

Legumes and nuts- Bengal gram *dal bhaji*, Bengal gram *dal holige*, Bengal gram *dal sambar*, blackgram *dal papad*, *Chakli*, Coconut chutney, Cowpea *sambar*, Cowpea *bhaji*, Cowpea *sandige*, Green gram *bhaji*, Green gram *dal sambar*, Groundnut chutney powder, Groundnut *holige*, Groundnut *undi*, *Junka*, *Kadli husali*, *Mirchi baji*, Moth bean *bhaji*, Niger seed chutney powder, Peas *bhaji*, Red Gram *dal bhaji*, Red Gram *dal sambar*, *Shev*, Linseed chutney and Niger chutney.

Milk and dairy products- Buttermilk *sambars/ amra*, Milk coffee, Finger millet *ambli*, Garden cress seeds with milk, Milk horlicks, Jowar *ambli*, *Peda*, *Souti beeja payasa*, Milk tea, *Vermicelli payasa*.

Egg-Egg *bhurji*, egg curry and egg omelette

Flesh foods- Beef biryani, Beef gravy, Chicken gravy, Chicken *kabab*, Chicken biryani, Mutton biryani, Mutton gravy and Mutton sukha

Fish and miscellaneous small animal protein- Fish fry, Fish gravy

Vitamin A rich vegetables and fruits- Amaranth *bhaji*, Scarlet runner beans *bhaji*, Bengal gram leaves *bhaji*, Carrot *bhaji*, Fenugreek *bhaji*, Garlic *khara*, *Gogu(pbhajiundi palle) bhaji*, Ladies finger *bhaji*, Lemon pickle, Mango pickle, Mango *shrikharani*, *Mekki kai* pickle, Pumpkin (*kumbala kai) bhaji*, Safflower (*kusube*) leaves *bhaji*, Shepu *bhaji*

Other fruits and vegetables- Beetroot *bhaji*, Bitter gourd *bhaji*, Brinjal *bhaji*, Cabbage *bhaji*, Capsicum *bhaji*, Cauliflower *bhaji*, Cluster beans *bhaji*(gori kayi), Cucumber *bhaji* (*sautekai palle*), Field beans *bhaji* (*avrekal palle*), Kosambari (*pachadi*), Kovai *bhaji* (*tondekai bhaji*), Mekkekai *bhaji*, Onion *bhaji* (*kanda*), Onion stalks *bhaji*, Potato *bhaji*, Radish (*mulangi*) *bhaji*, Ridge gourd (*heeraikai*) *bhaji*, Tamarind (*hunase*) sambar, Tomato *bhaji*, tomato chutney and tomato *sambar*.

Sweets, sugars and syrups- *Bhoondi*, *Godhi huggi*(beaten soaked *godhi payasa*), *jeelebi*, *Rava laddu*, *Sajka*, *Sev laddu*, *Shira*, *Allittu*, *Tambittu*, *Gulladki laddu*, *Gudagana huggi*, *Akki huggi*, *Savate beejada payasa*, *Hurakki holige* and *Karadantu Pumpkin gargi*.

A majority of foods are starchy staples and prepared by household processing methods such as roasting, fermenting, germination, steaming, open pan baking or boiling methods. The nutrient composition of the traditional foods revealed variation. The nutrient dense foods with high protein, iron, fat, carbohydrate or energy along with micronutrients are fulfilled by traditional foods.

There are many traditional foods low in fat, sodium, carbohydrates and calorific values that serve for management of lifestyle diseases. The generic recipes including starchy staple, legumes and nuts, milk and dairy products, egg, fish and miscellaneous small animal protein.etc provide multiple macro and micro nutrients (Somannavar, 2018).

FOOD AND NUTRITION SECURITY OF DHARWAD DISTRICT

Survey report of Dharwad revealed that about 65% of women in the district suffer from anaemia. From June 2019 to August, nearly 20.05% of children are malnourished in the district. Of the five talukas in the district, Kalghatgi (26%) had the highest rate of malnutrition followed by Navalgund (25%), Dharwad taluk (24%), Hubballi (22%) and Hubballi-Dharwad (14%) respectively (Srinidhi, 2019). Studies conducted in Dharwad revealed that during menarche, pregnancy and lactation, both macro and micro nutrients were deficit in their diets.

Foods such as milk, dry fruits, ghee, foods prepared from wheat were believed to have desirable effects if given in special conditions. Jackfruit, (*Artocarpus integrifolia*) potatoes, chillies and fried foods are avoided during pregnancy and lactation (Rao, 1985). Despite excellent economic growth in the last two decades, Dharwad continues to suffer from ‘alarming’ hunger, and acute malnutrition amongst children under five.

The traditional food concepts have been changed drastically in our society because of our contemporary lifestyle. Evidence shows that the traditional food base and knowledge of indigenous people are being eroded. Changing food patterns can damage the good health of the society. So, it is time to revert to good food habits of our own tradition and balanced diet (Bhat, 2012).

Major shifts in consumption patterns are occurring from starchy staples towards more diversified diets with junk foods, fried foods, bakery products, and food items loaded with preservatives, salt, sugar etc. Increase in consumption of unhealthy foods has resulted in health consequences which facilitate ‘nutrition transition’ associated with rising rates of overweight, obesity and chronic diseases (Ravi and Reddy, 2006).

PROMOTION OF DHARWAD THALI FOR EAT RIGHT MOMENT

The Dharwad *thali* with *jolada rotti*, *yenne badanekayi* (brinjal *bhaji*), *hesaru kaal palya* (green gram *bhaji*) and *jhunka* (steamed gram flour cubes dusted with sesame and coriander leaves, *puadis* (powders) that supplement the diet as sources of protein, chutney powders of *agasi* (flax seed), *yellu* (sesame), *shenga* (groundnut), *puttani* (*chana dal*) and *gurellu or ucchellu* (Niger seed), commonly sprinkled on *kosambari* or salads and curries or stuffed into brinjal or okra provides good amount vitamins and minerals accompanied with sweetness of *godu huggi/ madli* benefiting with whole grain nutrition yielding maximum per cent adequacy of macronutrients as well as micronutrient thus meeting nutritional sufficiency leading to food and nutrition security.

CONCLUSIONS

Foods items of Dharwad traditional cuisine are rich in large number of bio-actives that render foods functional, besides improving the palatability and confer a wide array of therapeutic effects including anti-microbial, anti-cancer, anti-diabetic, anti-inflammatory and anti-oxidant activities as well as ability to improve cardiovascular health (Rivlin, 2006; Milner, 2010; Bayan et al., 2014). They also exert beneficial effects against nauseating discomforts, platelet aggregation & cardiovascular diseases, dyslipidemia, inflammation, oxidative stress and hypertension (Singletary, 2010).

Millets which were once the main crop of the region have lost their popularity. However, millets are wholesome food with rich zinc and magnesium and consuming them regularly could help avoid cancer and diabetes (Bhat, 2012).

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LOCATION MAP OF KERALA



ETHNOGRAPHY OF KERALA CUISINE AND ITS CONTRIBUTION TO FOOD AND NUTRITION SECURITY

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ABSTRACT

Kerala's popular attraction is its delicious cuisine. Kerala sparkles with cuisine from various cultures and lands. Right from the 7th century onwards, when Arab traders visited the country, new kinds of flavours have been invading the Kerala palette and senses. The bouquet of cuisines offered by Kerala include simple, but highly nutritious Kerala Brahmin cuisine, elegantly prepared *mappila* foods of the Malabar area and lip smacking array of Syrian Christian dishes. All the three communities have different styles and traditions. The staple food of Kerala is greatly influenced by the history and culture of the state. It is a blend of both vegetarian and non-vegetarian options, in which the latter is prepared with a variety of items like fish, poultry and red meat. Brown Rice, fish and seafood, and coconut are the most common ingredients of almost all famous Kerala dishes. The flavours are enhanced with spices and herbs such as chillies, curry leaves, mustard seeds, turmeric, tamarind, black pepper, cardamom, clove, ginger, cinnamon, and asafoetida. Locally available root vegetables and seasonal fruits form a significant part of the cuisine of Kerala. The varied and diverse delicacies of Kerala with an insight to the nutritional benefits of major food items used for preparation of Kerala cuisine are discussed in this chapter.

INTRODUCTION

The cuisine of Kerala has a history of over 2000 year as it has been a hotspot of traders from the Mediterranean, European and Arab countries and is a blend of indigenous dishes and modified foreign [1-3]. Kerala's population is split roughly 20-20-60 between Christian, Muslim and Hindu—the latter here including Dalit and Other Backward Castes (OBCs) and is famed for its relative lack of communal violence [4].

Pre-independence Kerala was split into the princely states of Travancore and Kochi in the south,

and the Malabar district in the north; the erstwhile split is reflected in the recipes and cooking style of each area. Both Travancore and Malabar cuisine consists of a variety of vegetarian dishes using many vegetables and fruits that are not commonly used in curries elsewhere in India including plantains, bitter gourd (*paavaykka*), taro (*chena*), Colocasia (*chembu*), Ash gourd (*kumbalanga*), etc. However, their style of preparation and names of the dishes may vary. Malabar has an array of vegetarian and non-vegetarian dishes such as *pathiri* (a sort of rice-based pancake, at times paired with a meat curry), *porotta* (a layered flatbread, said to come from South-East Asia), and the Kerala variant of the popular *biryani*, probably from Arab lands. Central Travancore region boasts of a parade of dishes that is largely identified with the Christians of the region.

In addition to historical diversity, the cultural influences, particularly the large percentages of Muslims and Syrian Christians have also contributed unique dishes and styles to Kerala cuisine, especially non-vegetarian dishes. The meat eating habit of the people has been historically limited by religious taboos. Brahmins do not consume non vegetarian items. However, most of the modern day Hindu do not observe any dietary taboos, except a few who belong to upper castes (Nambudiris, Nairs of Malabar). Muslims do not eat pork and other items forbidden by Islamic law [1].

Agriculture plays a significant role in Kerala economy. Paddy is the main food crop of Kerala and the traditional occupation of the state. Agriculture sector contributed a modest growth of 2.53 percent during 1990s, but displayed a negative growth rate after 2000 it was 0.27 per cent. The state is producing only 15% of the food needed [12].

Table 1 : Crops cultivated in Kerala

Food Group	Variety
Cereals	<i>Chama</i> (little millet), <i>Kodo</i> millet, Maize, Rice and <i>Ragi</i> (Finger millet)
Pulses	Black gram, Cowpea, Green gram, Horse gram and Red gram
Tubers	Colocasia, Carrot, Elephant foot Yam, Potato, Radish, Sweet potato, Turnip, Tapioca and Greater Yam
Vegetables	Brinjal, Tomato, Chilli, Amaranthus, Okra, Bitter gourd, Bottle gourd, Snake gourd, Ridge gourd, Ash gourd, Little gourd, Sword bean, French bean, Beetroot, Cabbage, Carrot, Cauliflower, Indian bean, Drumstick, Muskmelon, Onion, Pumpkin and Red pumpkin
Fruits	Banana, Breadfruit, Bullock's heart, Cashew, Sweet-sop, Grapes, Guava, Jack, Jujube, Lemon, Lime, Mango, Mangosteen, Papaya, Pineapple, Pomegranate, Sapota, Mandarin and Pomelo

Condiments & Spices	Chilli, Turmeric, Coriander, Indian mustard, Cumin, Pepper, Garlic, Ginger, Cardamom, Long Pepper, Nutmeg, Cinnamon, Clove, Cinchon, Allspice and Fennel
Oil Seeds	Coconut, Sesamum, Groundnut, Indian Mustard and Castor Oil Palm
Beverages	Coffee, Tea and Cocoa
Green Manure Crops	Gliricidia, Crotalaria(Striped), Sunn Hemp, Calopogonium, Kudzuvine and Wild indigo
Fodder Crops	Bermuda, Napier, Guinea, Para and Tropical kudzu
Other Crops	Tobacco, Betel vine, Arecanut, Para rubber and Sugarcane
Trees	Teak, Ebony, Jungle jack/Ain, Poon, Tree of Heaven, Sain/Laurel, Kindal, Gurjun, Iron wood tree, Venteak, Siris, Yellow teak, Dita bar, Ekadania, Mahogany, Indian rose wood, Jack and Bead tree
Medicinal Plants	Black Culch Asparagus, Aparjit, Indian borage, Nut grass, Sadovani, Sarivan, Indian sarsaparilla, Pennywort, Kachura, Neem, Holy Basil, Jaramala, Long Pepper, Rauvolfia, Garden Rue, Sida, <i>Gulantha</i> , <i>Antamul</i> , <i>Khas.khas</i> , <i>Nirgandi</i> , <i>Asgand</i> , and Balloon Vine

Source: www.keralaagriculture.gov.in

FOOD CULTURE OF KERALA

The staple food of Kerala is rice and parboiled rice (*Choru*) (rice made nutritious by boiling it with rice husk) is preferred and the main start component of the meal [1] [5]. Grated coconut and coconut milk are commonly used for thickening and flavouring [6]. Kerala's long coastline and numerous rivers have made seafood a common part of meals. Having been a major production area of spices for thousands of years, the region makes frequent use of black pepper, cardamom, clove, ginger, and cinnamon. Kerala has a variety of breakfast dishes like *idli*, *dosa*, *appam*, *idiyappam*, *puttu*, and *pathiri* [7]. Tamarind (*puli*) and lime are used to make sauces sour in North Malabar areas; the Travancore region uses only *kodampuli* (*Garcinia cambogia*), as sour sauces or gravies are very popular in Kerala. The back garden of almost every household provides green chillies, plantains, papaya, jackfruit, pumpkin and other vegetables and so these are very commonly used in the cuisine [1].

Vegetarian dishes - Kerala vegetarian breakfast dishes include *Puttu* and *kadala*, *Iddali & sambar*, *Dosa* and chutney, *Pidiyan*, *Idiyappam*, *Paal-Appam* and may be accompanied by mutton, chicken or vegetable stew or a curry of beef or fish *moilee*.

Lunch items include rice with one or more curries, *upperis* (dry braised or sautéed vegetables), *rasam*, chips, and/or buttermilk (called *moru*).

Vegetarian dinners usually consist of multiple courses, each involving rice, one main dish (usually *sambar*, *rasam*, *puli-sherry*), and one or more side-dishes. Popular vegetarian dishes include: *sambar*, *aviyal*, *kaalan*, *theeyal*, *thoran* (dry curry), *pulisherry* (*olan*, *erisherry*, *pulinji*, *payaru* (mung bean), *kappa* (*tapioca*), etc.

Non-Vegetarian dishes- Common non-vegetarian dishes include stew (using chicken, beef, lamb, or fish), traditional or chicken curry (*Nadan Kozhi Curry*), chicken fry (*Kozhi Porichathu/Varuthathu*), fish/chicken/mutton *molly* (fish or meat in light gravy), fish curry (*Meen Curry*), fish fry (*Karimeen Pollichathu/Varuthathu*), lobster fry (*Konchu Varuthathu*), Spicy Beef Fry (*Beef Ularthiyathu*), Spicy Steamed Fish (*Meen Pollichathu*) etc. *Biryani*, a Mughal dish consisting of rice cooked along with meat, onions, chillies and other spices is popular in Kerala. Although rice and tapioca may be considered the original Kerala starch staples, wheat, in the form of *chapatis* or *parathas* (known as *porottas* in Kerala), is now very commonly eaten, especially at dinner time. Grains such as *ragi* and millet, that are common in the arid parts of South India, have not gained a foothold in Kerala.

Desserts - Kerala does not have any indigenous cold desserts, but hot/warm desserts are popular. The most popular example is undoubtedly the *payasam*: a preparation of milk, coconut extract, sugar, cashews, dry grapes, etc.

Fruit, especially the small yellow bananas, are often eaten after a meal or at any time of the day. Plantains, uncooked or steamed, are popularly eaten for breakfast or tea.

Other popular sweets include *Unniappam* (a fried banana bread), *pazham-pori* (plantain slices covered with a fried crust made of sweetened flour), and *kozhukkatta* (rice dumplings stuffed with a sweet mixture of molasses, coconut etc.).

Cakes, ice-creams, cookies and puddings are equally common. Kerala cuisine also has a variety of pickles and chutneys, and crunchy *pappadums*, banana chips, jackfruit chips, *kuzhalappam*, *achappam*, *cheeda*, and *churuttu*.

Beverages Common drinks Kerala includes Cumin seeds, ginger or coriander seeds are boiled in water and served warm or at room temperature. In addition to the improved taste, the spices also have digestive and other medicinal properties. *Sambharam*, diluted buttermilk often flavoured with ginger, lime leaves, green chilli peppers etc. was very commonly drunk, although it has been replaced to some extent by soda pop. Coffee and tea (both hot) drunk black, or with milk and white sugar or unrefined palm sugar (*karippatti*), are commonly drunk. Numerous small shops dotted around the land sell fresh lime juice (called *naranga vellam*, or *bonji sarbat* in Malayalam), and many now offer milk shakes and other fruit juices [1].

Festive food - Onam Sadhya

Onam is the harvest festival of Kerala. *Onam Sadhya* is prepared on Thirunam, the last day of Onam; this meal is a nine course strictly vegetarian meal which is served on a banana leaf whose narrow

tip should face the left.

Food is served from the bottom half of the leaf, items include a small yellow banana, and jaggery coated banana chips (*sarkara varatti*), plain banana chips and *papadam* at the bottom. On the top half lime curry, mango pickle, *puli inji*, lime pickle, *thoran*, vegetable stew or *olan*, *avial*, *pachadi* (raw mango and curd mixture), and *erissery* are served. Rice served at the bottom centre. On top of the rice a green gram dal *parippu* curry and ghee is served, followed by *sambhar*, *kalan*, *rasam* and the dessert *pradhaman* is served at the end.

The health benefits of *Onam Sadhya* are:

1. **Banana leaf:** Packed with a plant-based compound called polyphenols *Epigallocatechin Gallate* (EGCG), banana leaves are natural antioxidants which can be beneficial in preventing the onset of diseases and development of free radicals. When served on the leaf, the fresh and warm food absorbs the polyphenols. Apart from this; the leaves also have antibacterial properties. [91]
2. **Red rice (*matta rice*)** also known as *Palakkadan matta* is a nutrient rich red rice rich in magnesium; thereby help prevent the onset of heart disease [92].
3. ***Sâmbhar*:** One of the main dishes in *Onam sadhya*, *sambhar* is made with dal and every possible vegetable available (from carrots to beetroots). The slow-cooked dish, along with the addition of asafoetida has detoxification benefits [93]. It is high in proteins, packed with fibre and has high antioxidant levels. This health-packed dish is easy to digest as well [100].
4. ***Avial*:** Another mixture of various vegetables, this dish is made with coconut oil. Made from drumsticks, brinjal, coconut, carrot, curd, pumpkin and turmeric powder, *avial* is low in calories and packed with various nutrients [94]. It contains vitamin A (pumpkin), fibre (drumsticks), beta-carotene (carrots), folic acid (beans) and so on.
5. ***Olan*:** Made with white gourd, red beans and coconut milk, this dish is fibre-packed. The white gourd has a cooling, diuretic effect which, when cooked in coconut milk (calories-high with saturated fats) turns into a healthy and wholesome meal [95].
6. ***Kaalan*:** This one is made with yams or raw banana, coconut, buttermilk, turmeric and chilly, *kaalan* is a rich source of probiotics [96].
7. ***Puli inji*:** A prominent dish in *onam sadhya*, *puli inji* is made with ginger, tamarind and jaggery and curry leaves. The presence of ginger can help in relieving nausea and the combination of tamarind and ginger is extremely beneficial for your digestive system [97]. The jaggery in it helps flush out the harmful toxins from the body and cleanse your liver [98].
8. ***Parippu curry*:** Made with dal, turmeric and coconut, this dish is simple to make and highly nutritious. Usually made with moong dal, the dish is good for your gut health. Apart from that, it improves your digestion.[100]
9. ***Rasam*:** One of the most loved dishes all over south India, *rasam* is central to *Onamsadhya*. Made with dal, tomatoes and a mixture of herbs such as fenugreek, peppercorn, turmeric and coriander seeds, the dish is a combination of macro and micronutrients that are essential for sustainability,

energy and immunity. It has been, since olden days, used as a cure for nausea and stomach upsets [98].

10. *Sharkara varatti*: Made with jaggery, ginger, cardamom and raw banana, this snack-side dish is a great source for improving your haemoglobin levels due to the presence of jaggery [99]

HINDU CUISINE

Since Kerala was a Hindu state from the very beginning almost everything that all the other cuisines have is similar or slightly modified version of the original Hindu cuisine in Kerala consumed; all but with a few variations giving way to the vast diversity to Keralite cuisine. Hindus are lacto-ovo vegetarians and some do consume fish and chicken and do not consume pork [9].

MALABAR CUISINE

Malabar, North Kerala cuisine/ Muslim cuisine or *Mappila* cuisine is mildly flavoured blend of traditional Kerala, Persian and Arab food culture and consists of variety of pancakes and steamed rice cakes made from pounded rice. Malabar has an array of vegetarian and non-vegetarian dishes such as *pathiri* (a sort of rice-based pancake, at times paired with a meat curry), *porotta* (a layered flatbread, said to come from South-East Asia), and the Kerala variant of the popular *biryani*, probably from Arab lands.

Slow cooked mutton, *malabar mappila biryani* (mutton, chicken, fish or prawn) are important items in Malabar cuisine. Snacks such as *unnakkaya* (deep-fried, boiled ripe banana paste covering a mixture of cashew, raisins and sugar), *pazham nirachathu* (ripe banana filled with coconut grating, molasses or sugar), *muttamala* made of eggs, *chattipathiri*, a dessert made of flour, like baked, layered *chapatis* with rich filling, *arikadukka* are common and made in large quantities during the Muslim holy month of *Ramzan* [10].

SYRIAN CHRISTIAN (SURIANI) CUISINE

Christians especially Mar Thoma Nasranis (St. Thomas Christians), of Kerala have their own snacks and savouries *achappam* and '*kuzhalappam*'. A favourite dish of Kerala Christians is '*mappas*', or chicken stew. For this dish, chicken, potatoes and onions are simmered gently in a creamy white sauce flavoured with black pepper, cinnamon, cloves, green chilli, lime juice, shallots and coconut milk.

In Central Kerala this is made only with Beef or lamb, the usage of Chicken in stew is very rare. Lamb and duck can replace chicken in the stew recipe. Other dishes include *piralen* (chicken stir-fries), meat *thoran* (dry curry with shredded coconut), sardine and duck curries, and *meen molee* (spicy stewed fish). This is eaten with another dish known as *appam*.

Appam, *kallappam* or *vellayappam* are rice flour pancakes which have soft, thick white spongy centres and crisp, lace-like edges. '*Meen Mulakittathu*' or '*Meen vevichathu*' (fish in fiery red chilli sauce) is another favourite item. '*Pidi*', a type of rice dumplings in thick gravy, is a famous Christian delicacy. '*Pidi*' is paired best with chicken curry. In addition to chicken and fish, Christians along with a section of Hindus and all Muslims in Kerala eat red meat. '*Irachi ularthiathu*' is a beef dish cooked with spices [11].

NUTRITIONAL ASPECTS OF KERALA FOOD

1. Functional properties of Regional fruits

Tropical fruits are a rich source of bioactive compounds which are known for effects beneficial to health. In Kerala, a variety of tropical fruits are being used traditionally. The tropical climate and nature of Kerala supports the growth and flowering of these plants. However, due to the lack of extensive scientific research, most of these tropical fruits remain unexplored for their biological efficacies [14].

Table 2: Bioactive Components Present In Different Traditional Tropical Fruits of Kerala

Fruits	Bioactive Compounds	Nature	Reference
Annonaceae family	Annonacin and Uvaricin	Acetogenins	[15, 16]
	Gigantecin, bullatacin, motrilin, squamocin	Acetogenins	[17]
Banana	Beta carotene	Terpenoids	[18]
	Epicyclomusalenone, cyclomusalenone and cycloeucaleenol acetate	Terpenoids	[19]
	Flavonoids and prenylated flavones	Flavonoids	[20, 21]
Jackfruit	Artocarpin, cyclo artocarpin, cyanomaclurin, Artocarpanone		[22]
	Jacalin	Lectins	[23]
	Moracin		[24]
Jamun	Phenolic acids	Polyphenols	[25]
	Delphinidin, cyanidin, petunidin, malvidin	Anthocyanidins	[26, 27]
	Resveratrol	Stilbenoid	[28]
Mango	Phenols, flavonoids and carotenoids	Polyphenols & anthocyanin	[29]
	Mangsterol, manga lupenone, mango coumarin, mangiferin and mangostin	Xanthonoid	[30, 31]
Cashew	Anacardic acid	Phenolic lipids	[32]
Sapodilla	Methyl 4-O-galloylchlorogenate and 4-Ogalloylchlorogenic Acid	Polyphenols	[33]
Papaya	Phenolic acids and alkaloids	Polyphenols	[34]
	Benzyl glucosinolate	Glucosides	[35]

Table 3: Tropical Fruits of Kerala and Dosages Required For Their Respective Biological Effects in Animals

Fruits	Biological Effects	Doses	Reference
Annonaceae family	Wound healing	Ethyl acetate extract; 5& 10%	[45]
	Anti-diabetic	Hexane extract; 100& 400 mg/Kg	[44]
	Gastro-protective	Ethyl acetate extract; 200& 400 mg/Kg	[36]
Banana	Antioxidant	1, 3, 5 and 7% of diet	[37]
	Hypocholesterolemic	Methanolic extract; 10, 20& 40 mg/Kg	[49]
	Gastro-protective	Pulp; 50 mg/Kg	[50]
Jackfruit	Antidiabetic	Ethanol and butanol extract; 200 mg/Kg	[47]
	Hypoglycemic and hypolipidemic	Ethyl acetate extract; 20 mg/Kg	[46]
	Improve glucose tolerance	20 mg/Kg to humans	[48]
Jamun	Insulin sensitizing	Hydroethanolic extract;	[42]
	Anti-diabetic	Aqueous; 100 mg/Kg	[43]
	Hypotensive	Hydroethanolic extract; 500mg/Kg	[51]
	Radioprotective	Alcoholic; 50mg/Kg	[41]
	Anti-cancer	Alcoholic; 125mg/Kg	[40]
Mango	Antidiabetic	Hydroethanolic ; 100, 150& 200 mg/Kg	[52]
	Anticancer	Ethanol: methanol: acetone (1:1:1) extract; 0.8 mg eq. polyphenols	[39]
Cashew	Wound healing & anti-inflammatory	Juice; 0.2 mL/animal [193] Uncorrected	[38]
	Gastro-protective	10, 30% 100 mg/Kg anacardic acid	[53]

2. Benefits of locally grown root vegetables

The main roots and tubers grown in Kerala are cassava/tapioca, elephant foot yam, yam, purple yam and taro. Kerala cuisine has many delicious dishes using these items. Cassava is known as a poor man's starch following are some of the benefits of these root vegetables.

Table 4: Uses and Benefits of Locally Grown Root Vegetables of Kerala

Roots vegetable	Uses and benefits	Reference
Cassava [<i>Manihot esculenta</i> Crantz]	Contains highly digestible starch, but low in protein and lipids	[54]
	Finds application in industrial products such as an adhesive for laundry purposes, for manufacturing paper, alcohol, butanol, dextrin, adhesive tape, textile sizing, and glue.	[55]
	Cassava-based industries also generate large quantities of wastes/residues rich in organic matter and suspended solids, providing great potential for conversion into value-added products through bio refinery	[56]
Elephant foot yam [<i>Amorphophallus paeoniifolius</i>]	Elephant foot yams are rich in minerals, such as calcium (950 mg/100 g), phosphorus (934 mg/100 g) and iron (0.6 mg/100 g).	[57]
Yam [<i>Dioscorea batatas</i>]	Yam could be very useful for the prevention of colon cancer, as they enhance the antioxidant defense system and modulate inflammatory mediators.	[58]
	Has long been used as a health food and oriental folk medicine because of its nutritional fortification, tonic, anti-diarrheal, anti-inflammatory, antitussive and expectorant effects.	[58]
Purple yam [<i>Dioscorea alata</i>]	Resistant starch of purple yam beneficial effects on hyperlipidemia: usage of RS obtained from purple yam could ameliorate lipid metabolism in association with gut microbiota modulation	[59]
Taro [<i>Colocasia esculenta</i>]	The high fiber content offers potential as a dietary prebiotic through the presence of resistant starch (RS). RS aids gut bacteria in the production of short-chain fatty acids (SCFA), which have health benefits to the host	[60]

3. Nutritional benefits of important Ingredients of Kerala cuisine

a) Health benefits of spices and herbs Important spices grown in Kerala are black pepper, cardamom, chilli, ginger, nutmeg, turmeric, garlic, tamarind, clove, cinnamon and vanilla [61]. These Spices play a large part in Kerala's food, spices and herbs are a major source of bioactive compounds having positive effects on health, an account of research studies on these are following:

Ginger has been used as a medicine for at least for the last 4400 years, Since then it has been used to treat arthritis, colic, diarrhoea, heart conditions, the common cold, flu like symptoms headaches and problems related to menstrual periods. Today ginger is widely used as a digestive aid for mild stomach upset and is commonly recommended by professional herbalists to prevent nausea and vomiting associated with motion sickness and pregnancy. Hence studies show that ginger may reduce the toxics and side effects of cyclophosphamide - a drug used in treating various cancers [62].

In India medicinal references in the Vedas to nutmeg indicate that the ancient Hindus knew of the spice from early times. They described it as warmth producing, stimulating, and good for digestion and also used for their medicinal preparations. In traditional Indian folk and domestic medicine, nutmeg is used in small quantities to induce hypnotic effects to irritable children. Hence modern pharmacy developed nutmeg among them [63].

Many studies suggest that culinary herbs and spices have shown to provide health benefits of polyphenol contents in them. [64–84].

The health benefits of polyphenols include:

1. Anti-oxidant, anti-inflammatory, anti-cancer properties
2. Neuro- protective properties
3. Protection against non-communicable diseases
4. Anti-microbial properties
5. Anti-diabetic properties
6. Anti-asthma properties
7. Health benefits via action on gut microbes

b) Health Benefits of Coconut oil The literal meaning of Kerala is land of coconut. Coconut and its products such as coconut meat, coconut oil, water etc. are widely used as ingredients in Kerala dishes. Coconut oil is one of the widely used cooking oil in many Asian countries [85]. Over the last decade, the world production of coconut oil has been increased because of its important edible characteristics. In the context of edibility, there are two types of coconut oil, RBD (Refined, Bleached, and Deodorized) and the virgin. However, both contain similar fatty acids and a triglycerol profile. Coconut oil contains 92% saturated fatty acids (SFA); of that, 62% of FAs have the carbon chain length between 8 and 12 [86]. The major fatty acid of coconut oil is lauric which is a medium-chain fatty acid (MCFA) [87]. MCFA are important as they act as inert sources of energy and are easier to absorb, metabolize, and store in the body [88]. As coconut oil is composed of more saturated FAs, it is more

resistant to oxidation and polymerization than the oils with unsaturated fatty acids [86]. Its resistance to oxidation and polymerization, which makes its stable oil for cooking consistent evidence, supports the topical use for prevention and treatment of atopic dermatitis, as well as in “oil pulling” for prevention of dental caries. Coconut oil products may also be useful in preventing hair damage due to protein loss during grooming processes and ultraviolet (UV) exposure [89].

FOOD SECURITY AND KERALA STATE

Kerala is a high food deficient state in India on the basis of their food production, the state production is only 15 percent of its total food requirement and the remaining food need is satisfied by buying from the neighboring states. So there is demand for a strong relationship between production and supply for attaining food security. This was managed with the help of a strong public distribution system. Kerala’s PDS is considered as the best public distribution system in India and it was established on the basis of the essential commodity Act of Government of India in 1955, came into existence on July 1, 1965. The National Food Security Act (NFSA), 2013 is a legislation enacted by the Central Government which aims to provide subsidized food grains to two third of its population of about 1.2 billion.

Government of Kerala decided to implement NFSA in the state with effect from November 1, 2016 and Kerala State Civil Supplies Corporation is responsible for implementing the scheme with over 1.54 Crore members from 33.34 lakh house holders availing the subsidies. Kerala has state public distribution in addition to Civil supplies Corporation (Supplyco) and it is mandatory to give subsidies to 13 essential commodities and its 1406 stores are spread across the state [13].

CONCLUSION

Kerala cuisine linked to the state’s history, geography and culture Characterized by the use of coconut, and coconut oil, seafood, spices and herbs, locally available fruits and vegetables .It provides a wide variety of dishes, incorporating many ingredients, thereby contributing to food and nutrition security. Locally available fruits, spices and herbs with biological properties further ensure this contribution.

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FOOD CULTURE OF SYRIAN CHRISTAINS OF KERALA AND THEIR BEST PRACTICES

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ABSTRACT

The present review focuses on bringing out the ethnographic details of Syrian Christian Community of Kerala with special focus on their traditional food habits. Traditional customs and ceremonies of the community are presented. The roles of spices in the ethnic cuisine, as well as their health benefits have been reviewed. Traditional recipes which can be promoted as part of the Eat right movement are indicated.

ETHNOGRAPHY OF SYRIAN CHRISTIANS IN KERALA

Kerala is often called the 'Land of Spices' (Dubey, 2011). Long before the time of Christ, spice merchants and travellers from around the world visited Kerala in search of spices especially pepper referred as the 'black gold'. During the *Chera* Empire its capital city *Muziris* (*Kodungallur* or *Cranganore*) was a busy sea port on the Western coast of India and spice trade was a flourishing business with the Greeks, Romans, Chinese, Jews and Syrians, Arabs and later the Europeans. It was in one of these trading vessels, plying between Alexandria and the Malabar Coast, that Saint Thomas the Apostle is believed to have arrived in Cranganore in AD 52.

The natives who were converted as Christians were known as 'Syrian Christians' or *Nasranis* because they are the followers of 'Jesus of Nazareth'. Among those early conversions of Syrian Christians were several *Namboodiri* Brahmin families, from whom many of the present day Syrian Christians trace their roots (George, 2009).

The term 'Christian' coined in the west was not known here and therefore not in use, until the arrival of the Portuguese in the 16th century. The term 'Syrian-Malabar *Nasrani*' also indicates the same population referring to the people of Christian-Jewish tradition and descendants who follow Jesus of Nazareth and

are from the Malabar Coast of South India. Syrian Christians follow a unique Hebrew-Syriac tradition which includes several Jewish elements although they have absorbed some Hindu customs. Much of their Jewish traditions have been forgotten especially after the Portuguese invasion of Kerala in the 16th century.

Syrian Christians a single community but based on origin, they can be classified into Saint Thomas Christians and *Knanaya* Christians. Saint Thomas Christians trace their origin from early Christians baptized by Saint Thomas while *Knanaya* Christians are the descendants of immigrants from West Asia (Menachery et al., 1973; Farhadian, 2007; Nedungatt, 2008).

FOOD CULTURE OF SYRAIN CHRISTIANS

The Syrian Christians are conservative and strongly attached to their customs. On becoming Christians they did neither change their social customs nor lose their high social status among the Hindu brethren (Menachery et al., 1973).

The Syrian Christians of Kerala, had the same cultural traits as that of fellow Hindus till the 16th century, for they were from the same stock and race. The Hindu dietary and dressing habits, socio-religious ceremonies and art and architecture rules were all observed with slight variations (Prasad, 2009). Food culture of Syrian Christians was similar to the Hindus and use of local spices, herbs, meats, fish, grains and nuts was common. Influence of Kerala and its culture is reflected in this community (George, 2009).

Syrian Christian food owes much of its flavour to the smoky embers of wood fires, fresh produce and the special quality of stone ground spices such as turmeric, chilli, coriander, pepper, ginger etc.

The Syrian Christian menu is predominantly non vegetarian with abundant use of sea food such as sardines or tiny shrimps on a daily basis. Yeast and fermented coconut water/toddy are used to ferment breakfast items like the famed lacy *palappams*. These are had with mildly flavoured stews which are made with vegetables and meat simmered in a mildly spiced, coconut milk gravy.

Eggs, beef and chicken are consumed often with pork and duck reserved for festive occasions. Vegetables are lightly spiced and sautéed in coconut oil or mixed with a handful of crushed coconut and spices to a '*thoran*'. Simmering vegetables like ash gourd or cucumber in gravy of coconut paste and curd is also very popular. The simmered curd alone in a sautéed spice blend known as '*Moru Kachiyathu*' is a staple in all Syrian Christian households.

Parboiled, red rice/rice gruel (*Kanji*) is used for dinner along with a pulse preparation and a fresh chutney in most homes. Coconut in many forms-grated, as coconut milk and roasted - is used in most recipes and a liberal dose of coconut oil gives the unique flavour to foods. Certain unique local foods worth mentioning are coccum, curry leaves, tapioca and jackfruit.

The unique healthy foods in the Syrian Christian menu is the variety of spices and local foods used. Use of coccum (*Garcinia indica*) in all seafood preparations is a must for its tart and sour taste. The sun dried thick outer rind of the fruit is used. The isolates of Coccum are now being explored for its weight reducing properties.

The main spices used as flavouring agents are cardamom (in breads), ginger, garlic, cumin, green chilli and turmeric (in vegetarian preparations), *gambooge*, ginger and pepper (in seafoods) and cinnamon, cloves, cumin and pepper (in meat preparations). This variety in the use of spices is a unique aspect of Ethnic Syrian Christian cuisine. The use of coconuts in various forms-grated, slivers, milk or as ground paste- is also an integral part of all recipes.

Table 1: Traditional Breads of Syrian Christians

Malayalam name	Description
<i>Palappam</i> (Lace rimmed pancake)	Golden brown laced rice hoppers made with a batter of ground rice and coconut.
<i>Vattayappam</i>	Steamed sweet bread using rice flour and coconut.
<i>Pesaha Appam</i>	Unleavened steamed rice bread prepared on Maundy Thursday.
<i>Kalathappam</i>	Unleavened rice bread wrapped in banana leaves & steamed.

Table 2: Traditional Snacks of Syrian Christians

Malayalam name	Description
<i>Kumbilappam</i> (Jackfruit cones)	Sweet jackfruit, Jaggery & rice flour filled in leaf cones & steamed. A fragrant leaf called Edana /Vazhana leaf (<i>Cinnamomum tamala</i>) gives a unique taste and aroma to these small parcels.
<i>Kozhukotta</i>	Steamed rice balls with coconut and jaggery filling.
<i>Achappam</i>	Crunchy rice flour cookies flavoured with black sesame.
<i>Kuzhalappam</i>	A crunchy mini flute made from rice flour & spices.
<i>Avalose Podi</i>	Slow cooked rice flour & coconut formed into crumbles.
<i>Churuttu</i>	Rice wafer cone stuffed with rice & coconut sweetened crumbles.

Table 3: Traditional Fish Recipes of Syrian Christian

Malayalam name	Description
<i>Meen Vattichathu</i> (Fish simmered in a fiery red gravy with Coccum)	Fish simmered in liquor made from red chilli paste, black tamarind (Coccum) extract.
<i>Meen Pahu</i> curry (Fish in mildly flavoured coconut milk)	Green spiced fish curry with a thin gravy made out of first extract coconut milk.
<i>Karimeen Pollichathu</i> (Pearlspot tempered with baby shallots and coconut milk)	Pearl Spot fish smeared with a small onion & spices, griddled and blended with thick coconut milk.
Fish <i>Molee</i>	Fish slow cooked in a Green spiced coconut milk gravy yellowish with turmeric
<i>Konj Avichathu</i>	Black pepper prawn simmered in an extract of fresh black pepper & Shallots.
<i>Chemeen Pattichu Ularthiyathu</i> (Spiced Prawns with coconut slivers)	Slow cooked prawns tossed with fresh spices & coconut chips.
<i>Meen Peera Pathichathu</i> (a small fish preparation with coconut)	Small fishes in a rich blend of grated coconut & local spices
<i>Mathi Muthuku Kuthiyathu</i>	Fried sardines with backs split and smeared in a pepper spice blend.

Table 4: Traditional Vegetarian Recipes Of Kerala Syrian Christians

Malayalam name	Description
<i>Chundum Payarum</i> (Green gram-banana blossom <i>foogath</i>). Can be any vegetable <i>foogath</i> .	Banana flower cooked in its own juices with green gram.
<i>Moru Kachiyathu</i> (Spiced buttermilk curry)	Gently heated butter milk with spices like ginger, garlic, cumin, green chilli and turmeric.
<i>Chakkakuru Ularthiyathu</i> (Spiced Jackfruit seeds with coconut slivers). Can be any Vegetable sauté	Slow cooked jackfruit seeds stir fried with shallots, Curry leaves and spices.
<i>Vepilakkatti</i> (A sweet sour chutney powder of roasted coconut and spices)	Grated coconut slow cooked with spices and tamarind till it becomes golden brown roast.

Table 5: Traditional Meat recipes of Kerala Syrian Christians

Malayalam name	Description
<i>Tharavu Roast</i> (Duck roast)	A pot roasted duck with black spices & shallots
<i>Duck Piralen</i> (Duck simmered in spiced coconut milk)	Slow cooked duck pieces smeared in rich coconut milk gravy.
<i>Irachi Ularthiyathu</i> (Beef/ Buffalo bits with coconut shreds)	Braised meat cubes stir fried with a mélange of spices
Mutton Stew (Mutton stewed in a creamy white sauce of coconut milk)	Mutton cubes stewed with green spices, thin coconut milk and thickened with a liaison of thick coconut milk.

Pork Roast	Braised pork cubes stir fried with a mélange of spices especially freshly crushed pepper.
Chicken <i>Palu</i> curry	Chicken cooked in spiced coconut milk and Curry leaves
<i>Naadan Kozhi Piralen</i>	Slow cooked country chicken pieces smeared in a rich coconut milk gravy
<i>Pidi and Kozhi curry</i>	Curried chicken and rice dumplings
<i>Idiyirachi varuthathu</i>	Dried and pounded beef spiced with red chillies and other spices.
<i>Kappayum Irachiyum</i>	Mashed tapioca with curried beef.

ROLE OF SPICES IN THE CUISINE

The use of spices is noteworthy in the traditional recipes of Syrian Christians. Spices impart flavor, pungency and color to foods. There is now strong evidence on the functional, nutraceutical, anti-microbial and moreover nutritional value of spices.

Gambooge - *Gambooge* (Mal.*Kudampuli*), scientifically known as *Garcinia cambogia* is also known as Malabar Tamarind or Fish Tamarind. It is used as a souring agent in seafood preparations in traditional Syrian cuisine and is not a popular spice in other parts of India. *Gambooge* is used in Ayurveda system of medicine to promote digestion and a decoction is used against Arthritis and some uterine diseases. It is also used for its anti-colic action and is an antispasmodic.

The active ingredient in *Gambooge* is HydroxyCitric Acid (HCA), a potent inhibitor of adenosine triphosphate (ATP) citrate lyase. Inhibition of ATP citrate lyase can reduce the availability of acetyl-coenzyme A units for fatty acid synthesis and lipogenesis, thus modulating fat metabolism (Jena, 2002). In human studies, oral intake of hydroxycitrate increased fat oxidation, when supplemented with moderate intensity exercise (Tomita et al., 2003). In animal studies, oral intake of *G. cambogia* extract effectively attenuated body weight gain, visceral fat accumulation, blood and hepatic lipid concentrations and plasma insulin and leptin concentrations in obese mice fed a high fat diet. The extract ameliorated diet-induced obesity by modulating multiple genes associated with adipogenesis. (Kim et al., 2008).

The calcium-potassium salt known as HCA-SX or Super citrimax, a derivative of hydroxycitric acid, reduced food intake and body weight gain in obese Zucker rats and also attenuated the increased inflammation, oxidative stress and insulin resistance in untreated Zucker rats (Asghar, 2007). In a human study, treatment with HCA-SX for 8 weeks decreased body weight and BMI by 5.4% and 5.2%, respectively (Preuss et al, 2004).

Pepper - Pepper is the most important one and is known as the 'king of spices'. Because it has good export value, it has earned the name 'black gold of India'. Pepper is variously called *Kali Mirch*, *Gol Mirch* (Hindi), *Milagu* (Tamil) and *Miriyalu* (Telugu). The spice value of pepper is mainly due to the presence of 4-5 percent of a group of alkaloids, piperine and related compounds (Chavicine, piperidine and piperettine).

It is used for relieving various types of bodily ailments. The Aryans used it as a cure for dyspepsia, malaria. The Egyptians are known to have used it for embalming. The powder of black pepper mixed with juice of '*tulsi*' leaves is claimed to be good for malaria. The juice is also applied to the body to decrease body shivering and temperature. *Piper nigrum* (Black pepper) is used in the preparation of medicines for cough, stomach ache, worms, malaria and piles by the pharmaceutical industry. It also possesses antioxidant activity.

Cardamom - Cardamom is the second most important spice of India and is known as the 'Queen of spices'. India is the major cardamom producing country in the world. The various genetic varieties of cardamom grown in India are characterized by taste and flavor profiles that are distinctly different and uniquely Indian.

The spice value of cardamom depends on the volatile oils (2-10 percent) present in the seeds. The active principal constituents of the oil are the terpenes – cineol, tripeniol, turpinene, limonene, sabinine and terpinyl acetate. The chewing of cardamom masks bad breath and prevents dental decay. Different systems of medicines – Ayurvedic, allopathic and Unani – employ cardamom for the cure of many human disorders. It is believed to act as a carminative, stomachic, diuretic and cardiac stimulant. The spice is also used as an antiemetic remedy for throat and respiratory ailments.

Ginger - Ginger is one of the most important and oldest spices. Ginger has been under cultivation in India from times immemorial and is being exported from very early times. Indian ginger is considered only second to the Jamaican variety in quality. The volatile oil present in ginger is 'gingerol'. The important constituents of the oil are monoterpenes (4 percent), sesquiterpenes (65 percent) and oxygenated terpenes (17 percent). According to Ayurveda, ginger is considered to be carminative, stimulant and aids in digestion of a fatty meal. It is reported to reduce inflammation and pain in joints. It also has potential prophylactic use in treating migraine headaches. It may also be effective in alleviating nausea.

Turmeric - Turmeric belongs to the ginger family and there are about 70 species of turmeric of which 30 species occur in India. Turmeric stands third among the spices exported from India. The importance of turmeric in medicine took a new turn when it was discovered that turmeric is very rich in a particular type of phenolic compounds called curcuminoids. The three main curcuminoids isolated from turmeric are curcumin, demethoxy curcumin and bisdemethoxy curcumin, of which curcumin is the major curcuminoid.

The phenolic compound (curcumin) is known to possess antioxidant properties. Thus it significantly inhibits the generation of reactive oxygen species (RoS) and acts as a scavenger of oxygen free radicals. Studies carried out in the National Institute of Nutrition (NIN) suggest that turmeric has anti-carcinogenic and anti-mutagenic effects. Curcumin has an impact on all stages of carcinogenesis. Curcumin has also

been demonstrated to have antitumor effect in animals treated with potent carcinogens.

Turmeric is well known for its antibacterial activity. The active principle of turmeric, curcumin has an inhibitory action on the micro-organisms and arrests the growth of fungi. Turmeric and curcumin have been reported to reduce the levels of cholesterol in experimental animals given high cholesterol containing diet. It is also useful in treating gallstones in traditional medicine.

Turmeric helps in detoxifying harmful drugs or chemicals that are converted to toxic metabolites. It also increases the mucin content of gastric juice and reduces irritation in the stomach. It is used to relieve sore throat, cough, cold and against flatulence. Recently, curcumin was shown to be effective against Alzheimer's disease in animal models. A study carried out in NIN also demonstrated that feeding of curcumin and turmeric could delay the progression of diabetic cataract in rats.

Thus, turmeric or curcumin, the active principle has a wide range of beneficial properties that include antioxidant, anticarcinogenic, antimutagenic, anti-inflammatory, antiviral, hypolipidemic, antidiabetic/hypoglycemic, antibacterial and anti-infectious activities.

Modern science has also acknowledged the following functional benefits of turmeric-as an effective treatment for inflammatory bowel disease, relief for rheumatoid arthritis, prevention of cancer, inhibition of cancer cell growth and metastases, risk reduction for childhood leukemia, improved liver function, cardiovascular protection and protection against alzheimer's disease.

Garlic and onion - Garlic and onion are cultivated all over India. India is one of the largest producers of onions and exports considerable quantities. They are well known members of the family '*Allium*'. Garlic contains an antibiotic principle '*allin*' (inactive form) which is converted to '*allicin*' (active form) by the enzyme alliinase. The active principle present in onions is allyl propyl disulphide.

'*Ajorne*' which is an unsaturated polysulphide substance from allium has hypotensive action. Onion and garlic is reported to possess platelet aggregation inhibitor factor. Onion oil is reported to possess greater antiplatelet activity compared to garlic oil. Both have the property of reducing serum cholesterol level. The essential oils present are considered to be responsible for this property. Experiments have shown that they have hypoglycemic properties. They also possess beneficial effects against malignancy. Garlic has more anti-cell dividing (antimitotic) property than onion.

Garlic and onion are also associated with antibacterial activity. Growth of many pathogenic fungi, yeasts and some viruses are inhibited by them. Garlic inhibits aflatoxin producing fungi namely *Aspergillus flavus*. In unani and ayurvedic medicines also garlic is used to treat various digestive disorders.

TRADITIONS AND SPECIAL FOODS OF SYRIAN CHRISTIANS

The community of Syrian Christians is strongly patriarchal and the social life linked to the Church activities. The clergy officiates every auspicious occasion in the family and important ceremonies in the community are Baptism, Holy Communion and Marriage. The first schools in Kerala *Pallikoodam* were attached to churches.

There are many rituals associated with birth and the days that follow. After a small ceremony, the expectant mother is brought to her parent's home by seventh month. Postpartum care includes special maternal foods like mutton soup, mutton sauté with plenty of garden cress seeds (Mal. *aashali*) and shallots. Ayurvedic *kashayams* and *lehyams* for maternal care are an integral part of diet. Special galactogogues consumed are drumstick leaves, fenugreek seeds as gruel with rice and coconut milk. Babies are given a small rub of gold in honey on tongue symbolic as first food immediately after birth by the maternal grandmother.

In Kerala, herbal food formulations are widely used in maternal care, both pre and post childbirth. Three extensively used food formulations in maternal care are *Morinda reticulata*, *Cocos nucifera inflorescence* and *Asparagus racemosus*. These are rich in energy, protein, fat, calcium, and vitamin C (Remya and Jose, 2014).

Studies on dietary patterns of young mothers have revealed that the dietary intake of nutrients were inadequate when compared to Recommended Dietary Allowance suggested by Indian Council of Medical Research (2010). Consumption of the indigenous, nutrient-rich food formulations in postpartum care bridged the gap between the deficit in intake and the recommendations. Thus these traditional foods have nutritional value in addition to the functional benefits envisaged in *Ayurveda*. Both young mothers and their parents still believe that traditional, Ayurvedic maternal care practices are very important for health maintenance. Herbs and the food formulations used in traditional maternal care were found to be nutrient-dense; therefore indigenous herbal preparations in modified forms may have scope for supplementation during maternal postpartum care thereby bridging the gap of under nutrition (Remya and Jose, 2017).

Christmas and Holy week are fervently observed by undertaking lent (avoiding non vegetarian foods) for a specified period-25 days before Christmas and 50 days before Easter. The days preceding Easter are Maundy Thursday (the day of preparation of unleavened bread as a tradition and family reunion) and Good Friday which are spent in fasting, prayer and adoration. No festivities or marriages are allowed during the twenty five and fifty days of lent. *Margam Kali* - a form of traditional dance in which the saga of St. Thomas Christians is narrated is popular even today as part of marriage eve celebrations.

Table 6 : Nutritive Value Of The Most Commonly Used Traditional Maternal Care Food Formulations

Formulations	Energy (kcal)	Protein (g)	Fat (g)	Ca (mg)	Fe (mg)	P (mg)	Vitamin C (mg)
<i>Neyvalli kurukku</i> (<i>Morinda</i> porridge) [□]	912	24.40	26.17	1123.91	14.20	640	376.1
<i>Pookkula Kurukku</i> (<i>Cocos nucifera</i> inflorescence porridge) [□]	939	13.90	26.17	596.91	3.20	700	210.89
<i>Sathavarigulam</i> (Asparagus porridge) [□]	1015	13.90	21.17	586.37	3.20	640	120.7
<i>Ulli Lehyam</i> (shallots porridge) [□]	870	8.26	27.32	424.25	3.35	259.85	0.74
<i>Nellikai Arishtam</i> (Gooseberry brew) [□]	417	1.50	0.20	50.00	1.20	20	600
<i>Attin Brath</i> (Mutton soup) [□]	109	9.61	6.67	83.00	2.45	75.24	0.4

Ca- Calcium, Fe- Iron and P-Phosphorus

□ *One cup f& One mould (not used in table anywhere)* (Remya and Jose, 2017)

BEST PRACTICES FOR EAT RIGHT MOVEMENT

The food habits of Syrian Christians that can be promoted in the modern context of 'Eat Right movement' are the healthy practice of including fish as part of daily menu except during the period of lent and including meat only once a week ,mainly on Sundays. The subtle yet continuous use of fresh spices in the cuisine is also of high health significance. The traditional healthy snacks of the community can be revived especially in Kerala (eg: the famed Tapioca-fish etc in place of the fast food culture).Schools and college cafeterias can promote traditional recipes of each community to introduce our young generation to our rich and varied ethnic cuisine.

Table 7: Traditional recipes with scope of inclusion in Eat Right movement

Name of foods	Nutritional highlight
<p>Palappam (Lace rimmed pancake) Golden brown laced rice hoppers made with a batter of ground rice and coconut.</p>	<p>Can be used in soft diets and high energy fermented food.</p>
<p>Vattayappam (Steamed sweet bread using rice flour and coconut)</p>	<p>Can be used in soft diets, high energy fermented and steamed food.</p>
<p>Kalathappam (Unleavened rice bread wrapped in banana leaves and steamed)</p>	<p>Can be used in soft diets, high energy fermented and steamed food.</p>
<p>Kumbilappam (Jackfruit cones) (Sweet jackfruit, Jaggery and rice flour filled in leaf cones and steamed) A fragrant leaf called <i>Edana /Vazhana</i> leaf (<i>Cinnamomum tamala</i>) gives it a unique taste and aroma.</p>	<p>A complete steamed snack with the goodness of jackfruit, rice flour and jaggery. Can be part of a general healthy diet.</p>
<p>Avalose Podi (Slow cooked rice flour & coconut formed into crumbles)</p>	<p>A healthy, versatile snack which is combined with banana or can be made into nutri-balls. High in energy due to roasted rice flour and coconut content</p>
<p>Kozhukotta (Steamed rice balls with coconut and jaggery filling)</p>	<p>A healthy snack for all ages. Also known as <i>Modak</i> in other parts of India.</p>
<p>Moru Kachiyathu (Spiced buttermilk curry) Gently heated butter milk with spices like ginger, garlic, cumin, green chilli and turmeric.</p>	<p>Good spice content combined with curd as a probiotic, good for febrile conditions and diarrhoea.</p>
<p>Meen Vattichathu (Fish simmered in a fiery red gravy with Coccum) Fish simmered in liquor made from red chilli paste, black tamarind (Coccum) extract.</p>	<p>Coccum or gamboge with its unique health benefits and fish can be part of a general diet or suitable for CVD patients too. Very little oil is needed to be used.</p>
<p>Chundum Payarum (Green gram -banana blossom <i>foogath</i>) Banana flower cooked in its own juices with green gram and coconut.</p>	<p>A high fibre vegetarian recipe rich in protein.</p>

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DIETARY CULTURE OF PUDUCHERRY- A UNION TERRITORY OF INDIA

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INTRODUCTION

Puducherry situated in the Southern part of India comprises the former regions of Pondicherry, Mahe, Yanam, Karaikal areas and is a Union Territory of India. The major languages spoken in the areas are Tamil, Malayalam, and Telugu. Tamil is predominant in the southern settlements of Puducherry and Karaikal; Malayalam is predominant in Mahe, and Telugu is spoken mainly in Yanam. Other significant languages in the territory include Urdu, French, Kannada, Hindi, Gujarati, English, and Marathi.

Pondicherry territory has several coastal towns where the main employment is fishing, exporting, and fishing related activities. The other main source is the liquor business, the tax being less and the cost almost half when compared to the neighbouring state of Tamil Nadu, Kerala, or Andhra Pradesh.

The foundation of Pondicherry was laid in the year 1673 after the “La Compagnie française des Indes Orientales” was successfully obtained a firman from the Qiladar of Valikondapurarm under the Sultan of Bijapur. On 4th February 1673 a French Company Official by name of Bellanger took up residence in the Danish Lodge in Pondicherry. In 1674, the French Company placed François Martin as the first Governor and who initiated the ambitious project to transform Pondicherry from a small fishing village into a flourishing port-town. <https://puducherry-dt.gov.in/history/>

The territory of Puducherry is unique in culture and food habits as it has a history of Dutch, Portuguese, English, and the French colonial powers. It was an important destination of Roman trade in India. Puducherry has been ruled by the Pallavas of Kanchipuram, Cholas of Thajavur, the Pandyas, Muslims of the North, Vijayanagar Empire, and the Sultan of Bijapur. Since 1664 Pondicherry became the chief French settlement in India as the French East India Company set up trading. Though there were series of wars with fellow European countries, the French acquired Mahe, Yanam, Karaikal, and Chandernagar and retained French India till 1954 post-India independence.

The *de jure* union of French India with the Indian Union did not take place until 1962.

On a *de facto* basis, the bureaucracy had been united with India's on 1 November 1954. It was

organized as a Union Territory in 1963 (Subbiah 1990, Warner, 2017). Owned by the French these four territories were popular destinations among the population of the neighbouring states of Tamil Nadu, Kerala, and Andhra Pradesh to buy foreign and smuggled goods.

AGRICULTURE

Agriculture is one of the most important occupations for the people of Pondicherry and over 45% are directly or indirectly dependant on farming. The four isolated territories of the Government of Puducherry are scattered over different agro-climate zones and hence have varying cropping patterns. Paddy is the chief crop and multiple cropping and a high cropping intensity is practiced due to favourable soil and climatic conditions especially in the Karaikal region. Smaller territories of Mahe and Yanam regions have less than 6% of the net area sown.

The Department of Agriculture reports that Karaikal is the rice bowl of UT of Puducherry and is a fertile area as it is situated at the end of Cauvery delta. Besides paddy, pulses, groundnut, gingerly, banana and seasonal vegetables are also grown in Karaikal region. <https://karaikal.gov.in/about-district/agriculture-irrigation>.

The principal food crops of Puducherry are rice, maize, jowar (cholam), bajra (cumbu), ragi, and pulses (Bengalgram, Redgram, Greengram, Blackgram and Horsegram). The cash crops include cotton, sugarcane, oilseeds, coconut, gingelly and chillies. The important horticultural products are bananas and mangoes. The state is the largest producer of bananas, flowers, tapioca, coconut, groundnut and sugarcane. The plantation wealth of the UT lies in Mahe region mainly. Crops like coconuts, arecanuts, condiments, and spices are grown in less quantity. Pulses, groundnut and chillies are other crops grown in Yanam.

The Botanical Garden of Yanam was established by the French in 1826, has over eight to nine hundred species were grown in an area of 7500 square meters. <https://agri.py.gov.in/bggarden.html>.

Yanam's soil is alluvium consisting of sand clay and gravel. It is grey-black and clay-like in composition. The river sand on the bank of Gauthami, Godavari consist of quartz, felspar, and mica, with monazite found in the black streaks. There are no minerals of economic value in the region. The climate has high humidity and plentiful rainfall in both the Southwest and Northeast monsoons.

Some bottlenecks in this sector are:-

- Due to increasing demands from other sectors, the arable land of Pondicherry is shrinking.
- Depletion of irrigation water available for cultivation due to the overexploitation of aquifer.
- Deterioration of the quality of water due to the intrusion of seawater.
- Scarcity of labour during the peak agricultural season hurts the agricultural operations.
- Frequently affected by natural calamities as Puducherry is situated in the coastal area.
- Inflations in the agricultural inputs such as seeds, fertilizers, pesticides etc.
- Non-remunerative prices for the agricultural produce.

CULTURE

The present-day Union territory of Puducherry influences the culture and food habits of its past rulers who were followers of religions such as Hinduism, Islam, and Christianity. All four regions of Puducherry have distinct flavours.

1. **Puducherry** is a French Town or White Town of Puducherry is famous for its churches, temples, and statues along with a seacoast has a great influence on Tamil culture in its cuisine, architecture, and language along with a distinct French influence and habitats.
2. **Mahé** is surrounded by the State of Kerala with Malayalam as the major language and the culture and geography of Mahe are similar to that of the Malabar Coast of Kerala.
3. **Karaikal** is a small coastal enclave, 140 km south of the city of Pondicherry has a mixed food culture of Hindus, Muslims, and Christians. Due to its French flavour this land is referred to as Fremil (French and Tamil culture) combination. Tamil is the predominant native language of the people.
4. **Yanam** (French: *Yanaon*) forms a 30 km² enclave in the district of East Godavari in Andhra Pradesh and is Telugu is the main language and this area is also known as French Yanam. It possesses a blend of French culture and the Telugu culture prevailing in Andhra Pradesh, nicknamed Frelugu.

When the Child Marriage Restraint Act, was implemented in 1929 in British India, the Telugu people travelled to Yanam to conduct child marriages, which remained legal under the French administration. VenkannaBabu Temple is a Vishnu Temple which was built by the Chalukya kings of Rajamahendravaram (Rajahmundry) in the 15th century and had been performing child marriages during the pre-independence days. Even after the Sarada Act (prevention of Child Marriages), this temple was a favourite wedding destination for the child marriages and people from Madras, Hyderabad and other long distant places. <https://en.wikipedia.org/wiki/Yanam>.

FOOD CULTURE

The traditions and culture of Pondicherry's four different territories are also reflected in its food culture. Influences of French food, along with Tamil, Kerala, and Andhra food defines the overall food culture of Puducherry.

PONDICHERRY CUISINE

It's a fusion cuisine influenced by all the invaders who passed through Pudukay (Pudukay was a Roman port in the third century BC)—the old name of Pondicherry.

The Creole version which is better called the Pondicherrian cuisine retains cooking techniques from the French while keeping the spice and tangy flavours of Tamil cuisine intact.

Creole food in Pondicherry is not only Franco-Tamil but also has Portuguese, Dutch and, in some dishes, Vietnamese and Bengali influences French food demands everything to be cooked, served, and savoured individually (the vegetables, meats, poultry, fish, sauces), Indian cuisines feature mix-cook-serve composite dishes in gravies.

Creole food is more Indian than French in this aspect but otherwise unique in its flavours. With inexpensive origins and a tilt towards Indian spices and local ingredients — such as coconut, kombu turmeric, eggs, freshly caught fish, and vegetables like brinjals and broad beans — it was originally very spicy. But that's not evident anymore, at least not in the few fine-dining places that offer Creole dishes in Pondy and count many overseas visitors among their patrons.

In Pondicherry cuisine, few spices are used, cloves and cardamom are never ground. The French food had been adapted—the basic ingredients have been retained and French dishes modified with added spices to suit the local palate. Rich ingredients such as ghee, coconut milk, almond milk, poppy-seed paste, and cashew-nut paste are used to tone down spices.

The most distinctive feature is in the sauce. They are prepared in a French way over low heat with herbs as well as Indian spices often using cream. The flavors are well-matched and refined in contrast to a traditional curry. Pondicherry cuisine also employs cooking techniques that are not often used in Indian cooking like baking and grilling.

Other features include the frequent use of fresh seafood in the recipes due to its location right on the Bay of Bengal. Not only is seafood used but it is used in combination, such as shrimp and fish, to give unique tastes in each bite. Potatoes are found not only in various dishes but are served alone as French fries and mashed potatoes.

Pondicherry cuisine is the result of a mingling of flavours. “The dishes cooked mainly in Catholic Franco-Indian homes - locals who had converted to Christianity, had travelled abroad and were more open to the French influence,

One of the signature spices used in this cuisine is vadavam, “It is believed vadavam originated in Pondicherry and was picked up by the French. The key ingredients are shallots, mustard seeds, cumin, garlic, turmeric, asafoetida, white dal and sesame oil, Other common ingredients in this cuisine are coconut milk and badam.

Dishes include prawn mustard curry (kadughu eral curry), aubergine caviar and mutton sambar. And a vindaloo very different from the Goan equivalent - a result of Pondicherry's Portuguese past. Prawn Malay Curry is a dish with a South-East Asian influence. While some restaurants like the one at Le Dupleix hotel have a few Pondicherry fusion dishes on their menu.

The regional cuisine influences by the French is characterized by a wide range of diversity and styles with the use of cheese and wine. Some common French dishes seen in Puducherry are:-

- Salad dish SALAD NIÇOISE- made with lettuce, tomatoes, green beans, olives with fish (Tuna), potatoes, and a hard-boiled egg with a runny centre with a vinaigrette dressing.
- RATATOUILLE- A vegetarian dish made with tomato, garlic, onions, aubergines, bell peppers and zucchini and seasoned with herbs such as oregano, thyme and rosemary and ratatouille is eaten with pasta or bread.
- COQ AU VIN- is a classic French chicken casserole; the chicken is braised in a rich burgundy red wine with mushrooms and garlic along with chunks of pork or bacon to add the extra flavour.

- **MEEN BOUILLABAISSE** - It's a traditional fish stew found in the south of France, especially in the city of Marseille, but now it can be found in Pondy as well. The stew contains a lot of fresh fish and locally available seafood in addition to onions, tomatoes, potatoes, fennel, and garlic. The French Bouillabaisse morphed into the turmeric-tinted Meen Puyabaise, prawns were cooked in a spice-infused tamarind sauce, and fiery native curries were toned down, often with coconut milk, to suit the French palette and sensibility. The restrained use of spices is a distinct characteristic of Pondicherrian cuisine.
- **PONDICHERRY FISH CURRY / MEENU AASADHU** -This dish is a specialty of Pondicherry. The main spice in this dish is fennel seeds and fennel powder which gives the dish a unique flavor. This preparation can be done with mutton and chicken too.
- **CHICKEN VINDALOO GRAVY** -The dish comes from Pondicherry, a city with French colonial past and French culinary influence. Its origins are however not clear. "Vindail" sounds similar to "vin d'algo", a Portuguese dish, which was also an inspiration for the famous "vindaloo" (which also has a tangy note, but is slightly different). "Alho" on the other hand, means "garlic" and Vindail does contain quite an impressive amount of garlic. Evoking Portuguese roots and the dish being brought by the French from the Portuguese Goa, this resulted in a slight change of the name.
- **FRENCH CREPES** -A **crêpe** or **crepe** is a type of very thin pancake. Crêpes are usually of two types: *sweet crêpes (crêpes sucrées)* and *savoury galettes (crêpes salées)*. Crêpes are served with a variety of fillings, from the simplest with only sugar to flambéed crêpes Suzette or elaborate savoury galettes. (Crêpes originate in Brittany, a region in the west of France; the consumption is widespread in France, Belgium, the Netherlands, Canada, and many parts of Europe, North Africa, North America, Lebanon, Brazil and Argentina.)
- **CROISSANT** -A **croissant** is a buttery, flaky, viennoiserie pastry of Austrian origin, named for its historical crescent shape. Croissants and other viennoiserie are made of layered yeast-leavened dough. The dough is layered with butter, rolled and folded several times in succession, then rolled into a thin sheet, in a technique called laminating. The process results in a layered, flaky texture, similar to a puff pastry.

Crescent-shaped bread has been made since the renaissance and crescent-shaped cakes possibly since antiquity. Croissants have long been a staple of Austrian and French bakeries and pâtisseries. The modern croissant was developed in the early 20th century. In the late 1970s, the development of factory-made, frozen, pre-formed but unbaked dough made them into fast food that can be freshly baked by unskilled labor. The croissant bakery, notably the *La Croissanterie* chain, was a French response to American-style fast food and as of 2008, 30–40% of the croissants sold in French bakeries and patisseries were baked from frozen dough. Croissants are a common part of a continental breakfast in many European countries.

- **FRENCH MACARONI AND CHEESE RECIPE** - This French macaroni and cheese recipe tastes velvety smooth, rich, and just a touch sophisticated - nothing like those little blue boxes of dry, salty mix sold in markets and convenience stores. This dish takes only 40 minutes to prepare, much less than a quarter of which is spent actively cooking. This French-style "mac and cheese" can be used

as an unexpected side dish on a dinner menu or as the focal point of a winter-themed mountain lodge party.

There are many French outlets and coffee shops in all four territories of Puducherry which still offer freshly baked baguettes and crisp croissants. The Tamil, Kerala, and Andhra Pradesh cuisines have been described in subsequent chapters in this book.

SAMPLE DAY'S MENU OF FRENCH TAMIL BASED CATHOLIC FAMILIES

Breakfast: Coffee, Croissant

Mid-morning: Orange juice

Lunch: Rice, Chicken Vindaloo Gravy, French salad, Soup bouillabaisse

Evening: French crepe

Dinner: Macaroni or Idli with asadu kozhambu curry

CONCLUSIONS

The Union Territory of Puducherry comprises four unique territories of Pondicherry, Mahe, Yanam, Karikal areas nestled among the Indian states of Tamil Nadu, Kerala, and Andhra Pradesh and still have residents of France in the region.

The healthy food culture of France, Tamil Nadu, Kerala and Andhra Pradesh including fresh salads and freshly cooked healthy breakfast needs further documentation and promotion in India.

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FOOD HABITS AND DIETARY PRACTICES AMONG THE ISLANDERS OF ANDAMAN AND NICOBAR UNION TERRITORIES

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ABSTRACT

Food is the basic need for the survival of human beings as well as other living beings. Food brings people together and maintains unanimous culture among its members. People from different cultural backgrounds eat different foods. The food resource, methods of preparation, food preservation techniques, types of food preference, and dietary patterns vary among cultures. The author tries to explore the relationship people have with food, culture and society and how it reflects in the food habits and dietary practices in a multi-ethnic or heterogeneous society. Prevailing as well as emerging trends in food habits of people of Andaman Islands is another aspect of food culture which is highlighted and discussed in general in the present paper. The present paper is based on the scattered information available in various publications and an attempt has been made to analyse information on food habits as per the peoples' perception prevailed within the community. Personal observation and closed-group interview added the critical understanding of food culture to a great extent.

INTRODUCTION

The major ethnic group found in Andaman & Nicobar are the Locals or Local-born (the descendants from Indian convict parents who settled down in the Andaman), the *Moplah* (convicts of Madras province, mainly from Kerala), the *Bhantu* (convicts from Uttar Pradesh), *Karen* (migrated from Myanmar), and a section of the *Ranchi* who are grouped as "Pre-42" people (who came to the island during the period of Penal settlement or before the Japanese occupation of the island in 1942) and the Settlers who came later (after independence) namely the Bengali (people of East Pakistan, now Bangladesh, came as 'settlers' under the government rehabilitation schemes, which started as early as 1947 and till the 1970s), the

Madrasi (migrated people of Tamil Nadu), *Telengi* (migrated people of Andhra Pradesh during 1950-62), the *Malayali* (migrated people of Kerala during 1952-58), the *Ranchi* (migrated people of Chotanagpur, especially from *Ranchi*) and the *Valmiki* (migrated from Uttar Pradesh). There are also pre-colonial “indigenous and animistic populations” like Great *Andamanese*, *Jarawa*, *Onge*, *Sentinelese* tribal groups of Andaman archipelago and *Nicobarese* and *Shompen* of Nicobar archipelago.

“Depending on the time of migration, the communities broadly divided into two groups: the “pre-42” people (who came to the Island during the period of penal settlement or before the Japanese occupation of the Island in 1942). The Locals, Bhantu, Moplah, Karen, a section of *Ranchi* belong to this category. In the case of the *Madrasi*, *Telengi*, *Malayali*, and *Bangali*, the language brought the immigrants together” (Mukhopadhyay, 2002:18). The *Valmiki* was brought to Port Blair in the 1950s from the Saharanpur and Muzaffarnagar district of Uttar Pradesh.

DIETARY PATTERN OF PEOPLE OF ANDAMAN

People, in general, prefer to eat *idli*, *dhosa*, *paratha* and *roti sabji* as breakfast and rice and fish curry as the main course of the meal are widely accepted by the people of Andaman. Three meals a day is common practice with the people of Andaman. The meal at noon consists of rice and fish curry. In the evening freshly prepared rice with vegetable curry or *dal* (pulse) is reported to be the usual dietary pattern with various communities living in Andaman Island. *Surmai* fish is the widely accepted fish that is preferred by most people.

Addiction of *Kagaaj paan* (mixture of processed tobacco, betel nut and lime are given on a piece of paper) is very popular and widely used by the people of Andaman.

The study of food habits of a particular community provides a unique opportunity to look into their customs, tradition, behavior and trace their social and economic account. Each ethnic group has its way of food habits depending upon the ecological condition, production system, and locally available food resources. Food habits are directly influenced by the availability of foodstuff in their habitation. The staple diet of each cultural group is different from the others. When the acceptance of food from one culture becomes universal to all other neighbouring communities of different cultural backgrounds, then the foodstuff is to be called **popular food** or becomes the specialty as food marker of the area or locality. Particular foodstuff gets its popularity when the large numbers of the population in an area claim their great acceptability as well as adaptability, to a great extent creates marketability.

FOOD CULTURE

Bengali food is not popular among the other cultures of Andaman and Nicobar Islands, though they occupy the highest populated community (28%) in the Island as compared to Hindi speaker (20%), Tamil (19%), Telugu (14%), Malayalam (9%), Punjabi (1%) and Urdu. Bengalese use spices like *jeera*, *dhania* or turmeric specifically for cooking different food items as desired by the required test, while the *Tamil*, *Telugu* and *Malayalam* use a mixture of various spices and add tamarind while they prepare food.

People, in general, prefer to eat *idli*, *dosa*, *paratha*, *roti-sabji* as breakfast, and rice and fish curry as main meals are widely accepted by the people of Andaman. *Surmai* fish is the widely accepted fish that is preferred by most people. *kagaaj paan* (mixture of processed tobacco, betel nut, and lime are given on

a piece of paper) is very popular and widely used by the people of Andaman. *Jarda*, *supari* (betel nut), and lime are the substances/ingredients to prepare the *kaagaj paan*. *Jarda* is imported from Bhutan in Andaman.

While differentiating *Tamil* food from *Telugu* food, it is *rasam* (spicy soup type) which is must for the both dishes, one can identify with the taste of *rasam* as the Tamil likes it sour in taste while *Telugu* people add little sugar or jaggery which give sweet in taste. Food items consumed by the *Ranchi* people are *daal-chawal* (rice and pulses). Rice bear or *Handia* is a must for the *Ranchi* people. The *Malayali* people add coconut to each and every food item they prepared. It is the Bengali food when one can see the food prepared out of fish mixed with pulses which was also known as *Mudhi Ghanta*. A prized dish among seafood, lobsters not only look fabulous when laid out on the plate, but taste incredibly delicious even when simply fried in butter along with slices of fresh garlic.

THE FOOD HABITS AND DIETARY PRACTICES OF FEW SELECTED COMMUNITIES ARE DISCUSSED BELOW:

Food Habit of Great Andamanese People

The tribal communities of this Island differed from each other in their lifestyle, culture, dialect and names. The Great Andamanese are one of the four Negrito tribes of the Andaman. The Andaman has been anthropologically classified as Negrito, because they bear, in general, a close biological resemblance to the Negroids.

The Negritos, in general, are characterized as very short statured people with a well-proportioned body build, broad head (brachycephalic), broad face, full but not averted lips, and a straight nose. Their head hair is black, and hair type is of peppercorn pattern. They have been labelled as infantile because of the smoothness of the brows associated with high orbits and low alveolar index. They possess true steatopygia, an excessive accumulation of fat at the gluteal region combined with lumbar curvature, like Bushman, Hottentots and some other African tribes. (Dutta, 1978). The ABO blood groups suggest a high incidence of A group with subsidiary O and B blood groups. A survey on health and Nutrition among the Great Andamanese was conducted by (Verma, 1976, 1989). The results suggest that they suffer from tuberculosis (2 out of 21 persons) syphilis (5 out of 11 persons) and anaemia.

They are non-vegetarians and their staple food consists of fish, pig, crab, *dugong*, shellfish, turtle egg, tuber and fruits, such as *chulemo* (*Vimonia americana*), *Kona* (*Garchinia* sp), *chop* (*Termanalia procera*) and *tole* (*Dioscorea* sp.). But interaction with outsiders has brought many changes in their food habits and in cooking. They now started consuming wheat flour, rice, pulses, spices, edible oil, sugar, and ghee supplied by the Andaman Administration. Some also smoke *bidis*, cigarettes and opium. Crab soup is a special dish consumed by pregnant women and suckling mothers.

Turtle Eating Ceremony- When a boy or a girl attains the age of puberty; he or she has to abstain from eating the flesh of a particular variety of turtle called *Chouki*. This abstinence has the sanction of tradition and its enforcement is insisted upon by the elders. The abstinence lasts only for a period and ends with a ceremony named as 'turtle eating ceremony'. They are to abstain from eating flesh of the *Chouki* as it is one of important food which gives their body strength and energy and can develop their mental powers also.

After completion of his or her three days and night continuous sitting in one place, he or she would be offered the first piece of meat of the turtle, which was caught the day before the feast. As a choice item of their own food or as a trade article, turtles have acquired a relatively greater importance in their social and economic life today than it had in the past as they had then fair access to other equally favourite items of their food such as the pig and *nure*.

Food Habit of Jarawa

The *Jarawa*, who now confine themselves to the forest area of about 765 sq. km along the west coast of South and Middle Andaman, are one of the six scheduled Tribes of the Andaman & Nicobar Islands. Until the 1970s the *Jarawa* were still hostile to outsiders, as Census of their population has not been possible. The 1971 Census roughly estimates their population to be only 275. The *Jarawa* habitation area has been declared the *Jarawa* Tribal Reserve. Their habitat is tropical and rainforest.

The *Jarawa* eat both vegetarian and non-vegetarian food. Their food includes wild boar, pig, monitor lizard, crab, fish, turtle, eggs and molluscs like *trouchus*, *turbo* and bivalves shells. Wild Jackfruit, a small fruit (*tale*), tubers like potato, *arum* (*cheuba*) are also consumed by them. The *Jarawa* relish honey (*lauba*). Meat is roasted or boiled, fish and molluscs are boiled. They neither add salt or sugar to their food. They are totally unaware of alcohol drinks or any narcotic.

After 1947, the pressure on the *Jarawa* has further increased with the settlement of *Bangalis* and others around their reserve. Interaction between the *Jarawa* and the new settlers has been largely hostile, involving skirmishes, killing, property damage and kidnapping. However in early 1974, friendly contact was established with the *Jarawa* for the first time.

Over the decades this contact has strengthened further. As a result of a series of visits by official parties since 1974, the *Jarawa* awareness of the outside world has expanded. Some of them have learnt a little Hindi too. They have also been exposed to elementary modern medicines, such as ointments for wounds, which they appreciate.

To establish contact with the *Jarawa*, the contact team has been visiting the *Jarawa* area of the Middle Andaman once a month and presenting them with food items like coconut, banana, sweet potatoes and plain boiled rice. The *Jarawa* seem to relish these new foods. There are two major territorial divisions; one is the west coast forest of South Andaman, and the other in the west coast forest of Middle Andaman. They move within these areas in small groups to hunt and gather food.

Neither male nor female partner was found to share food from the same plate with others. The *Jarawa* still depend on their food resources from the forest and sea to procure their daily needs by means of hunting, gathering and fishing. They gather/collect wild roots, tubers, fruits, and honey from the forest, hunt wild boar and other edible animals. The sea yields them fish turtles. They also collect turtle eggs from the beaches.

Food Habit Of Onge

From 1976-77 the *Onge* people were rehabilitated to the Dugong Creek as part of the welfare scheme. Twenty six wooden huts with raised platforms were built exclusively for the *Onge* as part of the *Onge*

settlement. These welfare schemes have brought some radical change to their traditional food habits and their food consumption pattern. Under the scheme of free ration the *Onge* are provided wheat, flour, rice, sugar, pulses, cooking oil, groundnut oil, milk powder, soap, spices, tobacco leaves, tea leaves being the exception. They are greatly addicted to chew betel leaves with lime and betel nut and also, tea is the only beverage consumed by the *Onge* in large quantities.

In addition to their traditional diet, the *Onge* have now learnt to prepare and eat rice, *chapatis* and fried cakes of wheat flour. The cooking utensils are provided by the welfare agency. "The women often prepare *chapatis* in their hut for the family members. Cooking at the communal level is the job of men. The boiled pork, turtle's meat or fish, which is left over after consumption, is spread over the improvised racks made for the purpose. The fire underneath the rack is made to burn slowly, so that the piece of pork or fish kept on the rack nicely smoked and ready for consumption for the next couple of days" (Basu, 1990: 37).

Cooking among the *Onge* is limited to roasting or boiling of the items like pork, turtle and dugong, without using spices and salt. "Cooking is not considered complete unless the water of the pot has evaporated. The fat floating on the water is much relished by the *Onge*. For roasting, the fish is wrapped in a big leaf, tied up with bark strips and then kept over hot ashes for some time, before being turned over. By the time the green fleshy leaf cover gets dried and burnt, the fish inside is well cooked and ready for consumption. The fish is invariably cleaned before roasting. The edible roots and tubers are consumed after boiling in water" (Basu, 1990:36).

So far as the traditional food consumption of *Onge* is concerned, it has been reported by Bose, (1964) that, on an average, an adult *Onge* consumes 2.34 lbs. of food daily, comprising of protein, carbohydrate, fruit and honey in the proportion of 1.78 lbs, 0.53 lbs and 0.03 lbs. respectively.

Food Habit Of Karen People

The Karen of the Andaman Islands is Burmese immigrants. They were first brought here by the British Government of India, with the help of Christian missionaries, in March 1925. Initially, 200-250 nomads from southern Burma (now Myanmar) mainly food-gatherers and hunters, were brought to the Andaman, to work in the Forest Department.

After their survival, they were provided with free rations for one year and subsequently, given land to cultivate, mainly at Webi in Mayabundar *tehsil* in the North Andaman. Later they moved to Deopur, Latao, Lucknow, Base camp, Burmaders, Ranighat, Karmatang-9 and Karmatang-10. According to the 1951 Census, there were 384 Karens. They speak their own dialect, Karen and use the Burmese script. The Karens' enjoy the 'Local' status given them by Andaman and Nicobar Administration.

Karens favourite food is *khaushwi* (noodles) and *surwan* (curry). The *surwan* as a side dish is prepared from the banana plant stalk prepared with different ingredients. They collect the stalk of the banana plant (before the fruit bearing stage) and soak it into water after making it into small pieces. Then the same is cooked adding water, rice and gram flour, chilli flakes, turmeric powder, salt. Then the onion and garlic are added after frying in the cooking pan at the time of serving.

The *Karens* are non-vegetarians. They eat both pork and venison. They eat fruits and vegetables

which they themselves grow. During pregnancy, women avoid strictly vegetables like *Karela*, *Lauki* and papaya. After delivery, the mother cannot take venison for about two months. Both men and women chew betel; men also chew tobacco. They can identify the food of different communities as they had married into the local Burmese, Bengali, Madras, Punjabi, *Ranchi* and Muslim communities. The *Karens* of Andaman are primarily agriculturalists. Fruits and vegetables are grown in the kitchen gardens attached to their houses. The *Karens* lease out their land to the people of *Ranchi* community and the Bengali.

Food Habit Of Madrasi

The Tamil speaking people of the Andaman and Nicobar Islands are commonly known as the *Madrasi* (named after Madras, the capital of Tamil Nadu). They are also known as the *Tamil*. Some *Tamil* speaking settlers however, are *Burmese* and Sri Lankan repatriates.

Madrasi are non-vegetarian in general. Their staple food consists of rice, pulse, vegetables etc. Tea is their favourite beverage. Some drink the rice beer (*Handia*), prepared by the *Ranchi* communities. The *Tamil* speaking *Burmese* repatriates make their own rice beer (*losa*). Pregnant *Madrasi* women do not eat brinjal, papaya and raw mango, as these are said to induce abortions. On all special occasions, a fried edible (*vadai*) and sweet dish (*Payasam*) are prepared. *Pongal* (a dish made of rice and jaggery), is prepared during the harvest festival known as Pongal. The pregnant women avoid eating pineapple and papaya which they consider very hot food.

The *Madrasi* Population in the Andaman includes many caste groups like *Mudaliyar*, *Nadar*, *Konar*, *Asari*, *Chettiyar*, *Kallar*, *Mukkulattar* and subgroups like *Paraiyan*, *Pallen* and *Chakaliyan*. They make use of the crèches and nutrition centres (*Asha*, *Balwadi* and *Anganwadi*) provided under various schemes. They get their rations through the Public Distribution System (PDS). 35 *Madrasi* families of Kallar caste (*Vadatur kallar*) have settled in Indira Nagar, near Gupta Para about 25 Km from port Blair. They came from Burma, being assured that they could settle anywhere in India. *Malayali Aloo* (tapioca tubers), *kundru*, long beans, wild jackfruit are new vegetables, added to the *Tamil* food habit, which they adopted after coming to the Island.

Food Habit Of Moplahs

The *Moplah* are also known as *Mappila*. Outsiders sometimes call them 'Kaka'. They claim their origin from the descendants of racial mix - Arabs and *Malayalis*. In the ninth century AD, Muslims traders from Arabia and other West Asian countries came to India to trade in spices. They married local women, mostly *Nayar* and *Tiyar* communities of Kerala. The offspring of such marriages formed a distinct community which was later called *Moplah* or *Mappila*.

The British Govt. decided to deport the rebels to the Andaman after the *Moplah* Rebellion in August, 1921. In 1921, they were settled in villages in South Andaman, where they were allotted free agricultural land and other facilities. Bambooflat, Stewartgunj, Givinda puram, Wimberlygunj, Mannarghat, Writmyo, Ograbranj, Malapuram, Calicut and Panighat are the villages inhabited by them.

The *Moplah* are non-vegetarians. They eat beef but not pork. Their staple food is rice. They also eat millet, pulses and oilseeds and a lot of coconuts, bananas, tubers and many vegetables which they grow in their Kitchen gardens or buy from the markets. Both men & women chew betel, but only men chew

tobacco (*Khaini*). They also are seen smoking *bidis* and cigarettes. A pregnant woman avoids eating bitter gourd (*Karela*), Papaya, chicken etc. *Moplah* grow coconut, Betel nut, fruits and vegetables in their Kitchen gardens.

Food Habit Of *Shompen*

Shompens, inhabit the southernmost Island of Nicobar group of Islands i.e. Great Nicobar Island. They live in small groups in the dense forest along the river or stream, numbering about 235 (2019 survey by AAJVS). They are semi-nomadic hunters and food gatherers. Food materials collected from the forest are *pandanus*, *paan* leaf, arecanut, papaya, honey, insect *thumba* etc.

They cook their food jointly in the open space of the settlement but they do not distribute family-wise. They cook their staple food viz. *pandanus* in an open space in their settlement to be consumed by the member of the settlement as and when required. The choice of cooking in the open space is attributable to the small size of the individual hut which cannot accommodate the bark vessel in which *pandanus* is cooked. The joint cooking and consumption is attributable also to the joint effort put together in the collection of the *pandanus*.

Pandanus occupies the most important item as it is their staple food. This staple food virtually regulates the movement of a particular *Shompen* settlement from one place to another, depending on the availability of *pandanus*. Standing plays an important role in *Shompen's* nomadic life. They move from place to place in a range of about 5-6 km for hunting the pigs, birds and other animals. They use spears and spades for hunting, not bow and arrow. Spears are used for fishing in streams and rivers. According to Guha (1982) *Shompens* Daily food consumption contains 70% of starch which is mainly obtained from *pandanus* paste and other roots and 30% protein which they get from the pork and fish they consume. Since tribal Welfare officers distribute ration like rice, pulses, salt and match-box for monthly consumption.

Food Habits Of *Nicobarese* People

Nicobarese is the generic name for all indigenous people of the Nicobar Islands. Non-Nicobarese call them as *Holchoo*, this is a corrupt form of the Car-Nicobarese term '*hol-chu*' (meaning my friend). Bonington (1932) referred to them as a branch of the Mon race while R C Temple described them as "immigrants to the land they occupy, migrating from Burma or (lands occupied by the *Burmese*), *Talainy* (Mons), *Shans* and *Malays*. They are, in fact, an offshoot of the Mongoloid race that has grown up without interference by, or contact of any material consequences until quite recently with outsiders" (Whitehead, 1924).

According to the 1981 Census, the total population of the *Nicobarese* was 21,172 of whom almost two-third live in Car-Nicobar Island (13,514). The people of Car-Nicobar have totally given up the traditional dress of tassel or coconut leaf petticoat (*ngong*) and loin cloth (*Kisat* or *ning*). The traditional costumes for women are the *lungi* (*sarong*) and a blouse which resembles that of the *Burmese*, *Karen* or *Malay* women.

The *Nicobarese* are a scheduled tribe. The traditional food of the *Nicobarese* included *pandanus* (fruits of *Pandanus andamanensium*), yam, banana, coconut and cultivated and wild fruits. They are

non-vegetarians. They eat fish, mutton, beef, pork and chicken. Roy & Roy (1967) conducted a dietary survey among them which suggested that their diet is adequate and nutritionally satisfactory. They now prefer rice, *chapati*, pulses and tea to traditional food. They chew betel leaf and betel nut with lime and processed tobacco or plain tobacco with lime. They drink *toddy* tapped from the inflorescence of the coconut tree.

But they have always chewed *nyoop* (betel quid), a combination of tobacco and betel leaf. Tea and tender coconut water are the most relished non-alcoholic drink. Meat and liquor, both local & foreign, are indispensable on festive occasions. Rice was introduced in the Nicobar by the *Burmese*, well before the Japanese invasion (March, 1942-Oct, 1945).

The economy of the coastal *Nicobarese* is characterized by plantation, hunting, gathering and fishing. *Nicobarese* villages are situated along the west coast of the Great Nicobar Island. The vast seacoast facing the *Nicobarese* villages provide them abundant fish, octopus, shells, crabs etc. The land provides them coconut and *pandanus* which constitute the chief food of these people. The residential huts have been constructed in the interior forest land near the *pandanus* garden. They also domesticate the animals like pig.

“After plucking the *pandanus*, the fruits are collected at one place in the garden. The outer thick skin of the large stone seeds surrounding the fruit is chopped away by the *dao* (cutting implement) which enables the inner fruit to boil properly. The fruits are carried home suspended on a stick. Then it is cut into two pieces by an axe by the man who brings the fruits. The women by that time keep the fire ready with an Aluminium container or *Chowra* earthen pot for boiling the *pandanus*. The women will then cut away all the stone seeds of the fruit and will keep them for boiling. It normally takes 3 to 4 hours for the fruit to boil properly.

The *Nicobarese* ascertain it by pinching the stone seed by a pointed stick. When it is sufficiently done, the women take out the fruits in a tray made from the spathe of areca palm. Each stone seed of the fruit is scrapped by a bivalve shell on a wooden board. Scrapping and the preparation of the fruit for eating take 2-3 hours in which the women are generally busy. After scrapping the soft paste of the fruit it is thoroughly kneaded on the wooden board. It then takes the shape of yellow coloured paste which is rolled like a ball. The ball is full of undesirable fibres which are taken out with great skill by a string made by the bark of a tree. The left-over of the paste is given to the pigs. The paste is then pressed into a ball and kept into leaves for future use. It was reported that the *pandanus* paste can be kept for 15 days without spoiling the leaves. In appearance, taste and nutritional qualities, the *pandanus* (*Pandanus andamanensium*) paste does not differ much from *pease* pudding. The *pandanus* paste is eaten along with boiled octopus, grilled fish and soft kernel of ripe coconut” (Lal, 1977:70).

Food Habit Of Bengali

The term ‘*Bengali*’ implies the *Bengali* speaking population, which includes a number of social groups. These groups migrated to the Andaman from different districts of East Pakistan (Now Bangladesh) and came as ‘settlers’ under the government rehabilitation schemes, which started as early as 1947 and till 1970s.

The *Bengalis* are non-vegetarians. They eat fish, egg, mutton and chicken, but abstain from beef and pork. Rice is their staple food, taken twice a day at noon and at night. They take ‘*Mardbhat*’ (rice with hot rice water or rice gruel) or *chapati* (wheat flour bread) with *sabji* (vegetable curry). Puffed rice (*muri*) is eaten as snacks. They eat a variety of pulses (*dal*). They drink tea in the morning and evening. They eat locally grown vegetables and fruits like banana, papaya, mango, pineapple, jackfruit, guava and lemon. They are fond of milk and milk products. They chew *paan* (betel leaf) and raw tobacco (*Khaini*) with lime and smoke *bidi* and cigarettes. Special foods like sweets, sweetened rice cake (*pitha*) and *payas* (rice boiled with sugar and milk).

Food Habit of *Ranchi*

The *Ranchi* of the Andaman and Nicobar Islands are a mix of migrant people from different parts of Chhotanagpur. They were recruited from *Ranchi* as labourers for road laying, felling trees, timber cutting and such other development works in the Islands. Hence they are collectively identified as *Ranchi*, *Ranchiwala*. The *Ranchis* differentiate themselves as *Chik Baraik*, *Gond*, *Kharia*, *Oraon* and *Munda*.

The *Ranchi* are non-vegetarians. Their non-vegetarian diet includes mutton, venison, fowl and fish, but not all varieties of sea fish. They mainly eat rice, pulses (*dal*) and vegetables. They eat *chapatis* (*Roti*) along with tea (black tea) during breakfast at 5.30 am, then at 12.00 pm they take Rice, pulses, leafy vegetable curry (*Nali* and *Marsha* leaf), at 3.00 pm or so they again drink tea (without milk), and around 7.00 to 8.00 pm they take rice with vegetable as dinner.

The *Ranchi* people drink homemade rice beer (*Handia*). This rice beer is a necessary intoxicant which they prefer to drink in each social and religious function. Meat and Rice beer (*Handia/ Mand*) are indispensable on festive occasions, but during funeral rites & feast there are prohibited. They use sunflower & groundnut oil and mustard oil while cooking.

They prefer fish (brackish water fish) like *Kokari*, *Koko*, *Lal Bhetki* (red in colour) and small prawn. Chewing tobacco with lime (*khaini*) is very common among them. Smoking *bidis* (country cigarette) is common “But they do not eat the meat of animals and birds which they regard as *totem* objects. There is no significant change in their food habits except that some of them have started eating brackish water fish recently, something they did not do earlier” (Justin: 1994). ‘*Thekua Mithai*’ is sweet dish which they prepare out of rice powder with jaggery. ‘*Chhirka Roti*’ is a dish prepared on festive occasion out of paste made of *urad* pulse, rice together, adding a pinch salt.

The *Ranchi* people prefer to eat bamboo shoot and cane shoot and these occupy as one of their popular diets. The *Ranchi* people hunt the bat (*vadhur*) and eat its meat. Due to the spread of a coronavirus, they now stop eating bats. They also drink the decoction made out of *Tulsi* (Basil), clove and ginger in the early morning on an empty stomach. They have a belief that fish small in size like *maya*, *tarni*, *marsha* are healthy food and also prefer to eat *red vetki* and *kokari*.

They have adopted the food items like *sambar*, *rasam* and *chatni* (paste using coconut, chilly, fried grams, curry leaves) from Tamil cuisine as they found it tasty and less expensive. They commonly use lemon leaf for inhaling vapour, after boiling into water, to get rid of fever and body ache. The new trends in food consumption includes fish *biryani*, prawn *biryani*, Noodles, *panipuri* or *golgappa* which are

gradually becoming popular among the younger generation among the Tamil people.

HEALTH DRINKS AND PREVENTIVE HEALTH CARE

Drinking decoction (*kadha*) made from *Tulsi* (Basil), *Dalchini* (cinnamon), *Kali mirch* (Black pepper) and *shunthi* (dry ginger) is common among the Islanders as preventive care and such measures are believed to be the best drink to become free from the Covid-19 disease. Golden Milk is also very popular among the Tamils. A pinch of *haldi* (turmeric powder) added in milk while boiling and drinking before going to bed at night, improves the immunity.

For dry cough, people used to apply lime or Ca(OH)_2 and saliva on the outer surface of the voice box or epiglottis. It is also observed that 10-12 rice grains and black pepper helps to get relief from cough (dry), while keeping in mouth and the saliva should go through the food pipe slowly. During this cough, they avoid eating bananas, oranges and watermelons. People avoid eating jackfruit which they believe creates heat in the body leading to indigestion and gastric problems. *Noni* is consumed in the form of juice and has become a popular health supplement with the richness of vitamin C, vitamin B1, vitamin A, iron and antioxidants. The promising and health-promoting figures of *Noni* could be tapped profitably in view of the current Corona pandemic when enhancing the immunity levels is becoming a prime concern for most people.

AGRICULTURAL PRODUCTS OF THE ISLAND

An array of healthy food items is accessible and within reach of the local population, ranging from sea food to varieties of fruit - bananas, each of them having good nutritive value. One such locally available food unique to this island is the fruit of *Noni* (*Morinda Citrifolia*). Ayurvedic medicines have used *Noni* fruit since ages.

Two varieties of banana (*China Kela* and *Khatta Champa*) are also very common to the Island. The popular and widely known king coconut of this Andaman Islands attracts the outsiders to drink the tender coconut water and also it is observed that people (tourists to this Island) used to carry the saplings of this particular variety very often during their return journey. Indian Bay leaf or *tejpat* (*Cinnamomum tamala*) is an important constituent of Indian cuisines and there is a good demand for its planting materials among island farmers. The productivity trend of the major crops of Andaman and Nicobar Island was worked out from 2005-06 to 2014-15, which showed that the average productivity /ha in coconut was 4615 nuts, in arecanut 1.44 Mt, in paddy 2.85 Mt, in pulses 0.55Mt, in oilseeds 0.58 Mt, in vegetables 7.11 Mt and in fruits it was 8.52 Mt (Ahmed, 2017).

Percentage of Women (15-49) consuming specific food at least once a week by UT, INDIA, 2015-16

India /UT	Milk/ curd	Pulse/ Beans	Leafy vegetable	Fruits	Egg	Fish	Chicken or Meat	Aerated Drinks
INDIA	68.0	89.9	85.5	45.7	41.4	34.0	32.5	24.0
A & N	39.2	96.1	97.1	56.3	86.6	92.3	77.1	32.0

Percentage of Men (15-49) consuming specific food at least once a week by UT (2015-16)*

India /UT	Milk/ curd	Pulse/ Beans	Leafy vegetable	Fruits	Egg	Fish	Chicken or Meat	Aerated Drinks
INDIA	75.0	90.6	88.2	50.5	49.6	38.6	40.6	32.2
A & N	64.0	86.6	89.5	78.5	87.0	86.6	59.2	27.5

*Fieldwork was conducted from January-December, 2015 (Phase-I) in Andaman & Nicobar Islands.

The NFHS 2015-16 report reveals that in Andaman and Nicobar Islands percentage of children age (0-71 months) and children under age six years who received food supplements from *Anganwadi* centre (AWC) under ICDS services represents 47.3 % and 47.0 % as compared to National (all India) figure of 53.6 % and 48.1%. The report also reveals that the percentage of women receiving supplementary food from *Anganwadi* Centre during pregnancy is 46.9 in A&N as compared with the National figure of 51.4%. Percentage of Mother (during pregnancy) received no services is 52.9 in Andaman and Nicobar, as compared to national average 46.3%.

CONCLUSION

The food habit of the particular community is directly influenced by the availability of foodstuff in their habitat. Food habits of the islanders irrespective of caste, religion and culture mainly depend on marine resources. Sea food like fish, prawn and crab are identified as healthy diet and contributes to a demand so far food consumption of the Islanders is concerned. It has been noticed that as there has been a scarcity of vegetables (grown very limited scale and mainly imported from the mainland market especially from Chennai and Kolkata) people of Andaman and Nicobar Islands mainly depend on the fish, which they relish as fish fry and fish curry.

There are culture specific hotel (Bengali food, South Indian food, Chinese food etc.) where the specific cuisine is served as per the demand created by the people especially tourists to the Island. Prawn curry, Crab *masala*, and lobster are the delicious seafood mainly occupies a status-co among the tourists to the Andaman Islanders. Whereas the food habit of different tribal communities is directly influenced by the availability of food stuff in their habitat. The various food resources are obtained from through hunting gathering mode of economic activities. Wild boar, tortoise, dugong, monitor lizard are the various delicacies which they not only use as consumption but also play an important role in various socio-economic and religious functions.

Turtle eating ceremonies among the Great Andamanese are one among such social rites in which turtle hunting shares important aspects in their way of life. In short, each community is continuing their traditional food habits so far food culture is concerned while dietary practices of different migrated communities show a deviation from the traditional food consumption behaviour. Food habits of the tribal communities also remind us how a simple and healthy food consumption pattern leads them to an independent, demand free society.

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FOOD CULTURE OF UTTAR PRADESH: CONTRIBUTION TO THE HEALTH OF PEOPLE

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Abstract

The state of Uttar Pradesh (UP), boasts of rich culture and heritage and can be categorized into four distinct zones namely Awadh, Western UP, Eastern UP, and Bundelkhand. Awadhi cuisines have emerged from innovative food experiments done during the reign of Nawabs. Awadhi cuisines are not synonymous to Mughlai food, although it is influenced by Mughlai style. The most famous cuisines in Awadh are Kebabs, Biryani, and Nihari. In Western Uttar Pradesh, *Mathura Ke Pede* is as much popular as Lord Krishna temples of the Braj Bhoomi. Other delicacies include the *Chappanbhog*, *Annakut*, *Aloo ki Jalebi*, *Bedmi Puri*, *Dupki wale aloo*. Agra, which boasts of Taj Mahal, is also famous for its sweet *Agra ke Pethe*. Other regional foods include *Rampuri Rohu*, *Zamin-doz*, *Moradabadi daal*, Examples of Eastern Uttar Pradesh cuisines are *daal Ki dulhan*, *chura matar*, *tamatar chaat*, *laung lata*, *malaiyo*, and *banarasi paan* of Varanasi. Allahabad is very much famous for its rice dish Allahabaadi Tehri. While Pratapgarh produces vitamin C rich Indian Gooseberries (Amla). Bundelkhand foods include *Bafauri*, *Nigona*, *Meeda*, *Ras kheer*, *Maheri*, *Anse*, *Hingora*, *Anwariya*, *Kumhde Ki kheer*, *Bara*, etc.

INTRODUCTION

Uttar Pradesh symbolizes the influences of various invaded cultures like Turkish, Parthian, Scythian, Afghani, Mughals, and British in its present time lifestyle and also gives the essence of the *Sanatan dharma* and Buddhist traditions. Many invaders who attacked the territory also brought along with them the cooking styles and particular ingredients and thus enriched the food culture of the region.

Uttar Pradesh is a perfect blend of cultures, foreign land traditions, practices, and a unique symbol of *Ganga-Jamuni tehzeeb* (Sharma, 2013). River Ganga is the lifeline of Uttar Pradesh, while Braj Bhoomi (Lord Krishna's birthplace, Varanasi (Banaras), the holiest *Moksha* city of India, and Allahabad -the land of *Triveni Sangam* and *Kumbh Mela*, have made UP a very favourite tourist destination and the

state has adopted the vivid lifestyles, mannerism, traditions, tolerances, ideologies, and faiths throughout history.

The rich Gangetic plains, fertile region makes it the best place for various crops, vegetables, and fruits. Sugarcane is the cash crop of UP, apart from sugarcane wheat, rice, millets, and pulses are also grown. Uttar Pradesh has the highest production of potatoes, amla, guavas, and mangoes.

An average Uttar Pradesh Thali includes *arhar dal* and *chawal*, *rotis*, vegetables, pickle, and salad as its routine food habit which is made extremely blissful by the addition of spices and mustard oil as cooking medium. Overall, Uttar Pradesh cuisines can be categorized into four regions:- *Awadhi* or *Oudh* cuisines of the central part of Uttar Pradesh, *Satvik bhojan* of *Paschimi* Uttar Pradesh, Recipes from Ghats of the holy Ganges i.e. Eastern Uttar Pradesh and the Bundelkhand region.

FOOD CULTURE OF UTTAR PRADESH

The origin of some recipes goes as far back as the time and life of Lord Krishna. Therefore it is but natural that Uttar Pradesh has such a generous platter to offer its visitors, simultaneously it also ensures to provide a wide variety of dishes to both vegetarians as well as non-vegetarians.



Picture Source: Dietetics Department of Dr. RMLIMS, Lucknow

A diverged influence on the food culture of Uttar Pradesh makes it a perfect amalgamation of taste, aroma, and flavours. The people of Uttar Pradesh love to cook, eat, and feed. They are warm and hospitable; the ultimate hospitality for them means to feed their guest to the utmost satisfaction.

AWADHI CUISINES

Awadh is world-famous for its cultural refinement, politeness, generosity, elegant mannerism, and above all high standards of Dastarkhwan etiquette (Kapur, 2020). Previously known as the United Province of Oudh, since 1350 AD different parts of the Awadh region were ruled by the Delhi Sultanate (Turkish influence), Sharqi Sultanate, Mughal Empire (Persian influence), Nawabs of Awadh (Indo –Islamic influence) followed by the British rule. However, despite British annexation, the Mughal influence has perpetuated in Awadh as the Nawabs of Awadh roughly ruled for around 120years (Oldenburg, 2007). The food of Lucknow is broadly known as Awadhi food.

Glorified food culture and the *tehzeeb* and *nafasat* in serving are phenomenal experiences of their kind. Most of the experiments with foods were done in the exclusive royal kitchens of Nawabs. The Nawabs were the masters of the highly refined courtly cultures and diplomacy in which food played a major role. Their reign is remembered for the genesis of Awadhi Cuisines. Innovations were constant in their dishes. Native foods of the region were enriched with nuts, raisins, spices, and clarified butter.

Often Awadhi cuisines are thought to be synonymous with Mughlai cuisines. Though Awadhi cuisines have some influential aspects of Mughlai cooking style, it has a magical blending of spices, slow-fire cooking, and seasonal harmony with nature (Ramprasad). Awadhi cooking does not need hundreds of spices but simply a handful of lesser-known spices (Banerji, 2010). Kitchens were known as *Bawarchi Khana*. The cooks in the kitchens were strictly ordered and paid for the food which appealed to all senses. The head of the royal kitchen was known as *Darogha-i-bawarchi khana* (superintendent of the kitchen) (Ranjan) The nawab's kitchen was majorly adorned by the following types of cooks:

- *Bawarchi*: They used to do bulk cooking and were well versed with the art of cooking and highly skilled in culinary art.
- *Rakabdars*: they were the gourmet cooks. They were the ones who used to do lots of innovations and experiments with food. Final presentation and Garnishing was their job.
- *Nanfus*: they use cook varieties of breads and rotis like Sheermal, roomali rotis, taftans, etc.
- *Masalchis*: They were appointed for grinding Spices.
- *Degbos*: they used to wash heavily soiled utensils.

The various culinary terms specific to Awadhi cuisines are:-

- *Dhungar*: A quick smoke procedure used to flavor a meat dish, daals, or even raitas. The smoke is allowed to permeate every component of the dish thus imparting a subtle aroma for taste enhancement. This step could be an intermediate one or the final one. In a Bay leaf a piece of burning coal is placed and over it Ghee, some herbs are put then immediately it is placed in the dish and the lid is covered for 10-15minutes, to allow the aroma to settle in the recipe. The coal is then removed from the recipe.
- *Bhaghar*: It is a tempering style for curries and dals.
- *Gile Hikmat*: This is the Persian style of cooking. *Gil* in the Persian language means mud and *Hikmat* means procedure adopted by *Hakims*. The meat and vegetables which needs to be cooked

through this cooking style are taken as a whole and stuffed with spices and nuts, next step is that the whole stuffed piece is then wrapped in Banana leaf and then followed by complete covering with layers of Fuller's earth (*multani mitti*) and then left for cooking beneath the ground surface for almost 8 hours.

- *Loab*: This is a stage in cooking that indicates that since Oil has come over the top surface of gravy, therefore the dish is thoroughly cooked.
- *Ittr*: It means fragrance. Awadhi cuisines are famous for their distinct aromas. Usage of Rose water, Kewra water in cooking dishes act as flavor enhancers.
- *Dum Pukht*: This is the most common and frequently used cooking method in Awadhi cuisines. It's a slow procedure of cooking in which at the final stage of cooking the whole utensil is tightly sealed and the flame is very slow so that all flavors and spices are mixed thoroughly in each ingredient of the recipe. This gives perfect aroma texture and blends to the recipe.
- *Chandi Warq*: This is involved with garnishing dishes especially *pulav*, *chandi kaliya*, desserts, etc. with thin sheets of Silver. Even betel leaf *Paan* is also patted with these thin sheets of Silver.
- *Zamin Doz*: Another style of cooking beneath the ground. In this, a big hole is dug and the whole utensil is covered and kept. Above which burning charcoal is added and the hole is covered with mud. Generally, fish is cooked in this manner.
- *Ghee durust karna*: Clarified butter is boiled with cardamom and kewra water and once water is evaporated this ghee is strained and preserved for cooking purposes.

The Nawabs were very particular about their highly valued and sophisticated courtly manners. They had an elaborate system of protocols to be followed for the consumption of their royal cuisines. It is normally known as *Dastarkwhaan*. This means a meticulously laid-out ceremonial dining spread. It had at least 12 dishes and more than that and there was *nazakhat* and *nafasat* in eating them. *Dastarkwhaan* had mandatorily following dishes:- *Qorma* (Braised meat in thick gravy), *Salan* (a gravy dish of vegetables or meat), *Qeema* (minced meat preparation), *Kebabs*, *Pasinda* (fried pieces of the very tender meat of offspring of animals), Rice in form of *Biryani*, *Pulav*, *Chulav* (fried rice), Plain rice, Rotis like *roomali rotis*, *naan*, *sheermal*, *taftan*, *Baqar Khani*, Desserts included *Phrni*, *muzaffar*, *zarda pulao*, *Balai-ke-tukde*, *halwa*.

Awadhi cuisines worldwide famous Kebabs have following varieties

Seekh Kebabs, *Tunde ke kebabs* (recipe was named after the chef who cooked, he was one-armed chef), *Kakori Kebabs*, *Shami Kebabs*, *Galawat ke kebabs*

Awadhi kebabs are different from Punjabi kebabs as they are cooked on *chulhas* while Punjabi *kebabs* are cooked over *tandoor*.

Awadhi cuisines, for centuries, had been the prominent source to bind people belonging to various strata, places and religions, and traditions. While tourism of any country is becoming one of its important means of income, Awadhi cuisine has the potential to develop food tourism of Uttar Pradesh (Chawla, 2019).

SATVIK BHOJAN OF BRIJBHOOMI/PASCHIM UTTAR PRADESH

Brijbhoomi, the holy land where Lord Krishna was born, still holds its Sanatan traditions very High. In present times also one can feel that Brijwasi still lives with God. Apart from religious importance, Brij Bhoomi offers various delicacies that are simple, tasty, and satvik. Here temples of Lord are considered as the house of Lord and therefore everyday Shringar and bhog are offered to the lord.

“Mathura ke pede” are as popular as temples of Lord Krishna. People are of faith that Lord Krishna liked these pede and therefore this round flattened sweets of khoya, sugar and cardamom are offered as prasad to the lord. This mythological story behind Pede has some literary evidence in 7th century book Shiv Tatva Ratnakar where one can find a description of khoya as “Shakkar Paka”. Therefore khoya’s existence can be 2000 years old.

Every delicacy of Brijbhoomi has its significance related to Lord Krishna. Lord Krishna is also fondly called “Maakhan Chor” as he loved eating Maakhan. Even today in temples and streets of Mathura and Vrindavan *Maakhan mishri* is eaten with the same devotion. Food that is prepared to offer to Lord is known as *bhog* and is a very ancient old practice performed in this land. *Bhog* is pure *satvik* in nature that means it is pure vegetarian even the use of garlic, onion, eggplant, tomatoes, ladyfinger, etc is not done. Other than regular bhog on special occasions like *Janmaaastmi*, *Ekadashi* special *bhog* known as “*Chappan Bhog*” is offered to the lord. This has 56 dishes, we know that a day has eight timeslots and these time slots also known as *prehar* is the time to offer new *bhog* to Lord and thus in a week of seven days there will be 56-time slots therefore 56 *bhogs* are offered to the lord. Similarly “*Annakut*” dish is cooked the next day after Diwali to offer to Lord Krishna, mountain Govardhan. According to one old belief, it is said that to save the lives of the people of Mathura Lord Krishna had lifted the Mountain Govardhan on his little finger for continuous seven days. During this period He requested people to cook a one-pot meal in which cereal, pulses, vegetables all are added together and this is popularly known as *Annakut*. Another very unique dish is “*Aloo ki jalebi*”. This dish has a potato flavor which is very unique about this dish. People relish jalebis after the completion of Govardhan’s Parikrama.

Paschim Pradesh also has one iconic city, Agra. Apart from the famous Taj Mahal monument in its kitty Agra is also world-famous for its “*Pethe*” which are made with white pumpkin and sugar syrup and they are white, translucent, chewy, and sweet. There is a very old tradition in Uttar Pradesh to offer *petha* and water to the guest as a welcome gesture during summers. This practice had a logic that when someone comes from heat then serving only water might lead to heatstroke, therefore *petha* was considered to be the rich source of instant energy and quite refreshing one.

Nowadays *Petha* comes in various modified flavors and shapes like *Paan Petha*, *Angoori Petha*, *Kesar Petha*, etc. Dal Moth and *petha* are the famous dishes of Agra.

Another city of this region Moradabad or the city of brass (Pital Nagri) is believed to initiate the use of raw onion as well as *chaat masala*. *Muradabadi dal* is world-famous as a spicy tangy snack. This dal recipe came into existence and got its nomenclature from the third Son of Emperor Shahjehan Murad Baksh. Prince loved eating dal in very small portions throughout the day but with different flavors every time. Today also this dal is served in small portions and with various garnishing styles.

POORVANCHAL PRADESH/EASTERN UTTAR PRADESH CUISINES:

Varanasi which is also referred to as the “Civilizational Soul of India” is in this region. This city has many food stories as its *galis* and *Ghats*. Street foods of Varanasi are the most tempting cuisines for its travellers. There is a popular saying that Banaras has” *saat var and nau tyohar*” which means everyday people of Banaras enjoy some or the other festivals. Street food like *Tamatar ki chaat in kulhad*, *malaiyyo*, *kachori*, *jalebis banarasi paan* are the integral part of people’s eating habits (Singh, 2011). Its traditional recipes include *Dal Ki dulhan* which is made with cooked spicy dal and wheat flour dumplings filled with *daal peethi*. *Posto Gobhi*, *Baigan Saag*, is also some famous regional cuisines of this region. *Poorvanchal* mutton and *litti* are also very famous. *Ramapuri Paneer Pasanda*, *Zameen Doz Fish* are famous dishes of the region. *Banarasi Paan* is very famous worldwide and the over 63 types of fillings.

Allahabadi Tehri is a very staple one-pot meal of every household in Uttar Pradesh during winters. This *tehri* is entirely different from *Pulao* and *biryani*. This recipe is made with lots of vegetables, rice whole spices cooked in mustard oil and curd. Mustard oil gives it a distinct pungent flavour and the tartness of the dish is due to the usage of curd. Hot *tehri* is served with dollops of desi ghee and green spicy chutney. Normally Allahabadi cuisines have influences of British, Parsi, Muslim, Khatri even Bengali.

Pratapgarh, the “land of *Amla*” is the district that provides Indian gooseberries to the entire country. Here *Amla* is processed to produce juice, candies, pickle, *murabba*. Local cuisines made out of *Amla* are *Amla laddoos*, *Amla Burfi*.

BUNDELKHAND CUISINE

These cuisines are almost unsung and forgotten cuisines and it is high time that we give these forgotten recipes their due acknowledgment. Local Bundelkhandi food is very simple and mainly uses cereals, vegetables and fruits of local regions. Wheat, lotus stem, water chestnut, leafy vegetables, *kadakhnath Murga* are some local important ingredients of cuisines. This region also has tribal influences in cooking methods. Geographically this region lacks water supply and the land is also not fertile. Therefore people are mostly left behind from the mainstream modern culinary styles (Gupta, 2015). This had a positive impact on the food culture which is still a lot more original and traditional. In Vegetables wood apple is used a lot and in fruits local fruits like *Ber*, *mahua* are quite famous. *Chironji* is a special dry fruit of the region.

Starting any grand feast is with traditional *Bara*. There are various cuisines that are so unique and very nutritious. Few are listed below.

- *Bafauri*: These are steamed pieces of millets or besan and after steaming they are tossed with spices and condiments to enhance the flavour.
- *Nighauna*: *Nighauna* is different from *Nimona* which is another famous dish of Uttar Pradesh. In *Nighauna* fresh green horse gram is used to prepare the gravy.
- *Meeda*: Very nutritious and economical dish. In this gram flour, tiny pieces that are steamed are then cooked in tomato-based spicy gravy.

- *Ras Kheer*: Dessert is made out of two simple ingredients Rice and sugarcane juice. This is pudding which is so nutritious and acceptable by all age groups.
- *Birra Ki Roti*: This is again a perfect example of cereal pulse combination as this roti is made with equal quantities of wheat flour and chana flour.
- *Maheri*: the perfect recipe for a soft diet as it has broken wheat and buttermilk. It's a kind of sour and salty porridge.
- *Hingora*: a type of *kadhi* but this has no dumplings and asafoetida is used generously. Another version is *anwariya* which has amla in it.
- *Kumhde ki kheer*: This is a very delicious pudding made from red pumpkin and milk.
- *Bara*: These are fried round bara made out of a soaked ground paste of urad dal. Once fried they are soaked in rye water for 1 or two days. This makes these baras soft, tangy, and pungent.
- *Lapsi*: This is a halwa preparation made from water chestnut flour and jaggery.
- *Dal Bhajiya*: Lentils are cooked along with two or three types of leafy vegetables.
- *Bijora*: These are Sundried need to be fried or roasted before eating. They are served as accompaniment/side dish. They are round flattened pieces made of sesame, gingelly, lentil, white pumpkin, asafoetida, and red chillies.
- *Murar ke Kebabs*: These kebabs are made from Lotus Stem, Bengal gram, whole spices grounded and flattened balls are shallow fried.
- *Dobri*: This dessert is made with mahua, milk, chironji as a dry fruit.
- *Kadakhnath Murg Chandela*: Chicken variety famous in this region.

Excellent cooking methods of this region and a unique combination of spices and ingredients make these cuisines outstanding. But unfortunately, due to a lack of enough promotions and development, these recipes are still not very recognized or appreciated. We must put in collaborative efforts to uplift and preserve these cooking styles and recipes.

NUTRITIONAL ASPECT OF UTTAR PRADESH CUISINES:

These cuisines which involve our traditional scientific methods of cooking which incorporate lots of local nutritious ingredients are getting neglected and losing their popularity. In modern times people are more influenced by ready-to-eat culture, western world food habits, and processed forms of meals, which is a great challenge in front of us. Health practitioners, clinical dieticians, community nutritionists, ASHA, *Aanganwadi* workers if trained with the preparation and health benefits of these regional recipes it will be a great step towards building good health care practices and people will feel belongingness with such meals.

Awadhi cuisines are world-famous for their lavish and royal appearance they are quite nutritious if certain modifications are done to them. The magical blend of whole spices in them is of great nutritional importance. We also need to modify deep frying processes and limit the use of fat, cream, and meat

butter, etc. *Dum Pukht* style or *Gile Hikmat* style is very beneficial cooking method as they allow ingredients to settle and mix into each other. Varieties in each course of the meal make it more acceptable and also avoids monotony.

Satvik Food or Cuisines of Western UP are also very nutritious as we have *AnnaKut*, which is a one pot meal and has various types of vegetables into it. This makes it very nutritious. *Petha* has white pumpkin which is again a good source of various minerals. *Bukhnu* a very unique mixture of various spices is considered to be a home remedy in mild gastritis problems. According to the European Journal of medicinal plants, *Bhuknu* has immense medicinal properties as it has the perfect combination of various spices and herbs (Awasthi, 2016).

Ghats of Banaras and lush Amla farms of Pratapgarh have a lot more nutritious cuisines to offer from the eastern region of UP. *Dal ki dulhania*, is also a healthy cereal pulse combination and a very sumptuous meal. *Chura matar*, *Amla laddoo* or *Amla Burfi*, *Litti chokha* are some nutritious recipes that are nutritious and easily accessible by local people.

Recipes of Bundelkhand are still holding their traditional cooking methods, their local ingredients intact, and thus can be ranked first in their claim for original traditional cuisines. Their Originality is the greatest measure in making them so nutritious and yummy. Be it *Birra ki roti*, *Dobri*, *Raskheer*, *yellow pumpkin kheer*, *Hingora*, *Meeda*, *Bijaura*, every dish has its unique value and taste. It involves locally available seasonal vegetables which makes it perfect for health also.

Table 1: Recipes from Uttar Pradesh to promote EAT Right India Movement:

Region of U.P.	Name of Recipe	Nutritional Aspects	Health Benefits.
Awadh	<i>Dum Biryani</i>	High in protein content, Lots of Flavonoids and polyphenols, Nutritive value of ingredients intact as cooking style is - very low fire cooking	Rich in immunity boosters, the perfect combination of complete proteins
Brijbhoomi	<i>Anna Kut</i>	One-Pot meal and has lots of seasonal locally available vegetables, cereals, pulses.	Can always be introduced in <i>baalahar</i> or mid-day meal program.
Moradabad	<i>Moradabadi Dal</i>	Rich source of protein and very easy to prepare snack	This dish with slight moderation in spices can always be suggested for Soft diet patients.

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Mathura	<i>Bedmi Poori</i>	First class protein combination rich in calories and protein	Can be included in high calories and high protein meals
Banaras	<i>Dal Ki Dulhan</i>	Tasty cereal pulse combination with the perfect blend of spices and garlic. less oil recipe	One full meal which can be relished by all age groups.
Pratapgarh	<i>Amla Burfi/Amla Laddoo</i>	Rich source of Vitamin C	Eat simply as a fruit pickled in salt or process it in an acceptable form
Bundelkhand	<i>Maheri</i>	Rich source of Fibre and protein	Highly digestible and tasty soft recipe.
Bundelkhand	<i>Birra Ki roti</i>	Rich source of complete protein for vegetarians	Very economical and can add variety to <i>missi</i> roti variants
Bundelkhand	<i>Hingora</i>	High in proteins and spices	Very digestible liquid diet recipe.
Bundelkhand	<i>Kumdhe Ki Kheer</i>	Rich source of Protein, Vitamin A	Easily digestible dessert and good for pregnant ladies, lactating mothers
Bundelkhand	<i>Bijaura</i>	High content of calcium, fibre and flavonoids	Perfect side accompaniment for main meals.
Kanpur	<i>Bukhnu</i>	High in nutraceutical value	Digestive powder that can be easily consumed along with chapathi, poori, etc.

Table 2: Sample Meal –Plan including Regional Uttar Pradesh Cuisines:

Meal Time	Meal	Menu	Specialty of dish
6:00-6:30 am	Morning tea	Tea(Black/Green/Masala/Herbal) 1cup+papariya 1 in no.	<i>Papariya</i> is a Bundelkhand light snack made of chana flour.
8:00-9:00am	Breakfast	<i>Maheri/Chura-matar/lapsi/sattu parantha/bedmi-puri</i> + <i>Anarse/chironji ka halwa</i>	Very nutritious recipes and a perfect combination of all necessary nutrients
11:00-11:30 am	midmorning	<i>Hingora/amla-laddo/amla burfi/Rai bara/churmura/petha</i>	Light midmorning snacks in regional style
1:30-2:00pm	Lunch	<i>Murar ke kebab+rumali roti/allahabadi tehri/litti chokha/gakariya bharta/dal ki dulhan/dum Biryani/Annakut+roti/Dal bhajiya+rice+roti</i>	These regional dishes are well acceptable by locals of regions also they are economical and affordable
4:00-5:00pm	Evening tea	Tea(Black/Green/Masala/Herbal)- 1cup+bafauri/daalmoth/fara/aan se/ghooghri/	Healthy and refreshing snacks
7:00-8:30pm	Dinner	<i>Kebab roll/zamindoz fish with roti/dal bhat with bijaura/birra ki roti+</i> <i>nighauna/meeda/awariya</i>	These dishes include ingredients as per climatic conditions of the region and are seasonal so well tolerated by people.

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FOODS FROM *DASTARKHWAN* OF MUSLIMS OF UTTAR PRADESH

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ABSTRACT

Islam is the second-largest religion in India and Muslims are the second-largest community after Hindus in the country. Uttar Pradesh is India's most populous state. Muslims constitute the second largest population group in the state. In this chapter distinctive features of *Musalmani khana* are discussed along with the history, influence of culture on food. Special vegetarian, non-vegetarian, desserts, and accompaniment consumed specifically by Muslims of Uttar Pradesh are highlighted. Foods during festivities are also discussed. General beliefs and etiquettes about food that should be followed by Muslims are also highlighted. In the end, some of the chosen dishes or foods are summarized to be promoted for the Eat Right Movement.

INTRODUCTION

Muslims ruled India for over 600 years and contributed in many ways to Indian culture and society. Their contribution to literature, art, culture, and architecture is part of India's glorious history. The economy was so rich during the Muslim rule that India was known as the golden bird. After 1947, there is another phase of Islam and Muslims in India. For a few decades after the partition, despite being in large number Muslims' role was negligible in many walks of life in northern India. However, southern India had very less impact on the partition and therefore the socio-economic situation of Muslims is comparatively better in southern provinces.

Uttar Pradesh is home to a variety of cuisines, most famous of which are Awadhi cuisines and Mughal cuisines, very popular in Lucknow. The delicious food is supposed to be hereditary of the ruling Mughals. The most sought-after dishes include - *dum biryani*, *dum gosht*, and *nihari*, which is slow-cooked overnight and sealed in large pots. In northern Uttar Pradesh, which includes Meerut, Moradabad, Mathura, etc., the staple food includes kachori, Aloo curry, and the very regular dal, roti, and rice. Petha

is a very famous sweet dish available in the state and owes its authenticity to the city of Agra. Among the drinks, people prefer lassi, chaas, and roohafza.

HISTORY OF ISLAM AND MUSLIMS IN INDIA

Islam reached India in the very early period and it is believed that one of the Prophet Muhammad (PBUH)'s companions Malik bin Deenar came to India's western coast in 7th century and a mosque was built there in 629 EC which still exists. Since then Islam has a very strong root in India and Muslims spread across the subcontinent.

Idol worship is one of the ancient traditions of Hindu culture and it was being practiced even before Prophet Muhammad was born or appointed as a prophet. Hindu mythology says that there are several gods and goddesses but Islam strictly asks its followers to follow monotheism i.e. belief in the oneness of the god. Hindus believe in the concept of rebirth after death and Islam teaches life hereafter and the Day of Judgment and the concept of heaven and hell. But despite two extremely opposite views, there is not any mentioning of tension or tussles in the early period when Islam reached India in the 7th century.

When Muslim traders came to India then the local population was very inspired by their attitude, characters, and righteousness. Soon many people especially those who were downgraded most in the Hindu caste system, were attracted towards Islamic teachings of brotherhood and equality. The first mosque was built in India in Kerala province in 629 AD by Malik bin Dinar, one of the Prophet's companions. Soon after, Islam spread in many coastal cities such as Calicut, Madras (Now Chennai), Kokan, etc. Lots of people converted to Islam after seeing their simplicity, equal behaviour to everyone, love, and affection to common people. Still, lots of people, including Hindus, visit Sufi shrines across the country.

Another ruler who fought very bravely with the Britishers was Tipu Sultan. He was a ruler in Southern India and his capital was Srirangapatna that is now located in the province of Karnataka. He was martyred while fighting with the British on the battlefield. According to Dr. APJ Abdul Kalam, the former President of India, Tipu Sultan is the innovator of the world's first war rocket. Two of such rockets that were captured after he died in the Srirangapatna war, are in the Royal Artillery Museum in London.

Muslims didn't bring only the monotheism, unique way of praying, fast during the month of Ramadan but they also brought art, culture, languages and dialects, things of daily use, and various inventions. They had given a new sense of art, culture, and architecture and there are hundreds of monuments, forts, and other ancient buildings are across the country.

SPREAD OF MUSLIMS AND ISLAM IN THE COUNTRY

In the subsequent centuries, the Persian and Arab traders continued to settle on the Western coast of India. These settlements on the coasts of India continued to flourish and Muslim influence continued to grow. The Indian rulers welcomed these traders and provided them with all facilities like peaceful settlement, acquisition of landed property, and freedom of religion. Zamorin rulers who ruled over the flourishing port of Calicut gave special encouragement to the Arab merchants. They also encouraged people to embrace Islam. Similarly, other rulers of the Western coast followed a policy of great religious

tolerance.

Masaudi who visited India in the tenth century says that the Hindu king of “Cambay was interested in religious discourses and exchanged ideas with Muslims and other people who might have visited his kingdom.” Similarly about the king of Gujarat Masudi writes: “In his kingdom, Islam is respected and protected; in all parts rise of the domes of beautiful mosques where Muslims worship.” The number of Muslim settlers on the western coast was on the increase is borne out by other narratives also. The Arabs conquered extensive territories from 711-713AD of Sindh and Multan after defeating Hindu rulers such as Raja Dahir.

Towards the close of the tenth century the Turks of Ghazni first under Sabuktigin and

Subsequently, his son Mahmud attacked Punjab and captured trans-Indus territory from the Hindu rulers of Shahi dynasty. Mahmud was inspired to undertake annual invasions against India mainly due to the wealth of the country and the zeal spread Islam. He attacked North India (excluding Bengal and Bihar) seventeen times. His successful invasions exposed to the world the political and military weakness of India. It provided a fillip to the subsequent Muslim invaders to undertake fresh ventures to conquer the land of infidels (non-believers as the Hindus were usually described).

Shahab-ud-Din Ghori (1175-1206) conquered and annexed Multan, Uchh (Sindh), and Lahore and defeated the Rajput leader Prithvi Raj of Delhi in the second battle of Tarain in 1192 and conquered Ajmer, Kanauj, Bmaras, etc. Lieutenant Kutub-ud-Din-Aibak and Mohammad Bakhtiyar Khilji conquered Gwalior, Kalinjar, Gujarat, Bengal, and Bihar. Thus within thirty years, the entire region between Indus and Brahmaputra passed into the hands of the Muslims. Thus the foundation of the Muslim rule in India was solidly laid down. After Ghoris the slaves, Khiljis, Tughlaq, Sayyid, and Lodhi dynasties continued to bring more territory under their control. During this period numerous works of history were produced but they pay more attention to the activities of the kings, courts, and conquests and completely ignore the study of the culture of people.

Indian Muslims, throughout succeeding centuries, turned towards a spot in Mecca, had their law code, their administrative system, their language, literature and shrines, and saints. They never restricted India as is the case with Hindus.

Despite the efforts of the Muslims to maintain their original character and the resistance of the Hindus to the practices of the Muslims, an unconscious fusion and synthesis of the two different cultures did take place.

SOCIETY AND CULTURE OF MUSLIMS

Slavery was a common feature of the Muslim society and keeping slaves was not only a fashion but also a symbol of position and status. The Sultans of Delhi as well as their nobles and Amir’s kept slaves – both males and females. Usually, the largest number of slaves were maintained by the royal family. It is said that Ala-ud-din had 84,000 slaves. This strength rose to 2,00,000 under the Firoz Tughlaq.

The dress, food, and social manners of the upper sections of Hindu society were also greatly influenced by Islamic culture. The Hindu masses and the priestly classes, by and large, remained immune from the impact by Muslims about their dress, food, and social manners. The food habits of the high-class Hindus

also changed. They started taking non-vegetarian dishes like *pulao*, *kabab*, *kofta*, etc. like the Muslims.

Even though the political and administrative machinery was dominated by the Muslims the Hindus continued to control the economic life. India's trade with foreign countries, particularly with the countries of the East, tremendously increased which exercised a profound influence on the economic condition of the people. It is said that the Hindus for the first time took to the study of Persian and Arabic during the regime of Sikandar Lodhi. The real progress in the sphere of literary communication between the two communities took place under the Tughlaqs.

Under Akbar that the real synthesis in the field of two kinds of literature took place. Several Hindu literary men and reformers betray the influence of the Islamic ideas in their works. Times of Shah Jahan that independent works in Persian were produced by Hindu scholars. Islam in India was transformed from a simple and puritanic religion, with emphasis on the performance of outward legal duties, to a complex devotional creed in which miracles and superstitions, combined, of course with saint-worship, played an important role. The Muslim mystics, particularly the Sufis were greatly inspired by the Hindu *Vedant*. Some of the Muslim scholars even took to the study of the Hindu philosophy like *Yog* and *Vedant*. Some Muslim scholars even took to the study of Hindu medicine and astrology.

FOOD CULTURE OF MUSLIMS

The Muslims influence the food culture in places where they settled. People, in general, were vegetarian, but meat-eating and drinking were also common. However, women of Brahman, Kashatriya, and Vaishya castes were not permitted to drink. In actual practice, the ladies of the royal family and courtesans took drinks on special occasions. The Brahmans abstained from meat. The normal food of the masses was *khichdi*, prepared with rice and pulses. The people of the South were mainly rice eaters. The Gujaratis mainly consumed rice and curd. The chief food of the people of northern India was *chapati (roti)* made of wheat *atta*. The Muslims took *kebab* and *roti*. Spices and butter were used plenty by the people of well-to-do families. They also used a great variety of *achar* (pickles). Amongst the sweet dishes, *halwa* and sweet *samosas* were most common. Dry fruit was also taken in plenty. Though during the Sultanate period iced water was not known, it began to be used during the times of Akbar, at least in the royal household.

An average man usually took three meals a day. In the morning he took breakfast; in the mid-day he took lunch; and a - dinner in the early evening. In the break-fast, the Hindus mostly took *Khichdi* or boiled rice and pulses; while the Muslims took bread and *kabab*. During the lunch as well as various types of vegetables were used by the Hindus. *Puri* and *Luchi* were taken only on special occasions. The use of ghee, butter, and cheese was made by the people of various classes according to their economic status. The Muslims took the meat of sheep, goat, fish, and other birds, and prepared the same in various kinds of spices. Talking of the food habits of the Muslims in medieval India Mandelso has said "They freely took beef, muttonfish, the flesh of goats, sheep and other beasts and birds of prey". However, the Muslims did not take pork and other flesh of animals not properly slaughtered, as ordained by their religion.

DISTINCT FOODS AND HISTORY OF AGRICULTURAL PRODUCE OF OF UTTAR PRADESH

Fruits of numerous varieties were produced in different parts of the country. The Sultans of Delhi and other rulers took special pains to improve the quality of the Indian fruits. They paid special attention to gardening, which indirectly led to the improvement of the quality of fruits. Firoz Tughalaq is particularly credited with having laid down 1200 gardens in the neighborhood of Delhi, eighty on the Salora embankment and forty-four in Chitor. The most popular fruit of that time was mango, although melons were also quite popular. In Delhi, star fruit used to be cultivated in Shalimar Bagh, a garden built in the northern part of the city by Mughal emperor Shahjahan. Shalimar Bagh was once home to several mangoes, guava, ber, and star fruit trees. These were given on lease for fruit collection. Only a few of these exist now due to water shortages and encroachments. Their yield has reduced and there are not many takers.

A wide variety of mangoes are grown and loved in Uttar Pradesh, Some of the popular varieties are – Chausa, Langra, Dasehri. Amongst other fruits grapes, sugarcane, dates, pomegranates, plantains, peaches, oranges, apples, grapefruit, figs, lemons, jackfruits, grapefruit *chakotra*, *loquat*, etc. are found in abundance.

Amongst vegetables carrots, radish, turnips, radish, cucumbers, bottle gourd, ridge gourd, bitter gourd, peas, pumpkin, *tinde*, *simbal dode*, etc. are grown.

DIETARY CULTURE OF MUSLIMS IN UTTAR PRADESH

Uttar Pradesh with a population of more than 130 million, Uttar Pradesh is India's most populous state. They also celebrate their festivals with total freedom and with great gusto. Around 82 percent of Uttar Pradesh residents are Hindus, and 60 percent are vegetarians. Meat is eaten by a large caste called *kayasthas*, the descendants of Hindus who served as administrators for the Mughals and then the British.

The cuisine of Uttar Pradesh is as diverse as its geography and has been successful in providing a satisfying experience to travelers. Uttar Pradesh is one of the very few regions of the country that has a generous platter to offer both vegetarians and non-vegetarians. Food of Uttar Pradesh is divided into three distinct zones namely Western Uttar Pradesh, Awadh, and Eastern Uttar Pradesh

A popular breakfast dish is *halwa puri: puris* (deep-fried wheat bread), carrot *halwa*, curried chickpeas, potatoes, and pickles. The main meal typically consists of *dal*, *phulka roti*, *puris*, *parathas* or *chapatis*, and one or two seasonal vegetable dishes – cauliflower, potato, carrot, turnip, radish, peas, radish, fenugreek leaves, etc. in winter, bitter gourd, ridge gourd, bottle gourd, jackfruit, pumpkin, etc. in summer. Non-vegetarians add meat or chicken to the vegetable dish like *arvi gosht ka saalan* or *shaljam palak gosht* or even add meat or chicken in the *dals* prepared.

Breads are important, including *phulka roti*, *tandoori roti*, *khameeri roti*, which is slightly leavened and baked in a special clay oven built into a wall; and *kaak*, a rock-hard bread made by wrapping dough around a hot stone and baking it on coals. In olden times when there were no gas stoves or microwave ovens available, the food – *chapatis* to *dals* used to be prepared on *angithi* that used dung-cakes or wood to burn. To keep the *angithi* fire alight air used to be blown using hollow rods called *phoonkni*.

Kebabs are lightly seasoned with salt and coriander. The most popular dish is *shorba*, a soup often made with milk. Another distinctive food is *quroot* – milk curds that are fermented, salted, and shaped into pebble-like balls that are dried in the sun. *Sajji*, a dish of Middle Eastern origin, is a whole lamb marinated and roasted over burning wood on a spit stuck in the ground. *Sajji* is traditionally served with *kaak*. Meat is dried and salted, then boiled during the winter months. A common drink is a green tea prepared with water infused with green cardamoms and cinnamon. The food is similar to that of Baluchistan and is centered on meat. (According to a local proverb, even burnt meat is better than lentils.) Mutton or beef kebabs, lightly spiced, are very popular.

The staple is bread, usually made from wheat flour (in some areas corn) and baked in a tandoor, a clay oven owned by many households. A village near the provincial capital, Peshawar, was the birthplace of India's most famous restaurateur, Kundan Lal Gujral, the creator of tandoori cuisine. The Inventor of Tandoori Chicken Today, tandoori chicken, butter chicken, and tandoori roti are staples of Indian restaurants around the world, but until the mid-twentieth century, they were virtually unknown, even on the Indian subcontinent.

The influence of the Arabs, who arrived in the seventh century, is apparent in the many varieties of *halwa*, some made with a sesame-seed paste as in the Middle East. Another Arab legacy may be *mazon* (from the ancient name for Oman), a sweet of chopped nuts, spices, and sugar syrup cooked in ghee.

FOOD DURING MONTH OF RAMADAN

The month of Ramadan is a month of delicious food, which is not seen in the other 11 months of the year. During the month of Ramadan, Muslims wake up around 4 am for *Suhoor*, popularly known as *Sehri*, which means “of the dawn”, “pre-dawn meal”; wherein the meal is consumed early in the morning, to fast for the day. Special sweet and savoury dishes are prepared for *khajla*, *feni*, mixed dry fruit powder in milk, *doodh jalebi*, *meethi roti*, etc. for maintaining energy levels during the day.

The Iftar is the meal served to break the day's fast around 7 pm. The *Iftar* meal begins with *khajoor* followed by *roohafza* (either made in plain water, or with added lemon, sugar, and salt or in milk), fruit *chaat* (all seasonally available fruits are chopped into small pieces and sugar, *masala*, and lemon juice is added), *vegetable pakodi* (*pakodi* is made with a different combination of seasonally available vegetables like *palak ki pakodi*, *aaloo patta gobhi ki pakodi*, *phool gobhi ki pakodi*, *katli wale aaloo ki pakodi*, *pyaz ki pakodi*), salads and *chaats* with chopped or sliced tomatoes, carrots, radish, onions and cucumbers, sprout salad, *chhole chaat*, *lobiya chaat*, *chana dal chaat*, followed by a light meal of *khichdi*, *kabooni*, *tahri*, *roti sabzi* followed by desserts like fruit custard, fruit cream, *phirni*, *falooda*, *rabdi* etc.

Like any other festival, preparation recipes of *iftar* dishes differ from region to region.

In Northern India – in Delhi, *aloo* and *gobhi pakoras*, fruit chat, and *chana dal* savory with chopped onion and chopped coriander are central to every *iftar* table, in Lucknow *shami kebabs* and *parathas*, chicken *tikka* and *phirni* are part of the *iftar* meal. Whereas in Western India, in Mumbai, *pakoras*, *pathoras*, minced meat *samosas*, *sandan*, a savory of steamed rice flour, grilled liver and spleen, *chana batata*, and *sharbats* according to season remain popular for *iftar*. *Haleem* is the ace food of Ramadan in Hyderabad whereas Kerala has its flavours like *Sabudana kheer*, finger prawn, meat *patiri*, chicken pepper fry, and *paalaada*.

FOODS DURING FESTIVALS

Eid-ul-Fitr

After a whole month's fasting comes the festival of *Eid-ul-fitr*, the great celebration day. The *Eid-ul-Fitr* is a very joyous day; it is truly a thanksgiving day for the Muslims. On this day Muslims celebrate the real joy of food after fasting and experiencing hunger for 30 days. It teaches them to value food and understand the hardship of hunger of other less fortunate humans. It is a lesson in sacrifice and a test of will power. The famous dishes prepared on this auspicious occasion are *sheer khurma/ sewaiyyan / kheer; chhole ki chaat, dahi bhalle*, etc. The prepared dishes are not only served to the guests who visit at home but are also distributed to neighbours, relatives, friends, and needy poor people.

Eid-ul-Ad'ha

Eid-ul-Ad'ha popularly known as *Bakri-Eid* because of the sacrificial lamb/ goat deemed as sacred offering (*Qurbani*) to Allah. It is celebrated on the 10th day *Dhul-Hijjah*. It is celebrated with the cooking of *kormas* and *biryanis, kebabs, and murgh Mussallam* and this delicious meal are rounded up with *sheer khurma* and *muzaffar* special desserts of Eid. This Eid, which is only a ritual, sees delicious mouth-watering exotic dishes of the meat. This is a festival of sacrifice and each family adheres to it religiously. There is plenty of meat in every family to prepare exotic dishes. *Kabas* sizzle on iron griddles and leg of lamb is roasted in tandoor, liver and lamb *tikkas* are on a hot grill to be eaten hot. A variety of other meat dishes like *korma, pasandas, chops, brain cutlets, do-pyaza*, and varieties of *pulao*, besides *biryani* are cooked and enjoyed with the family. However, the speciality of the day is, the whole goat filled with rice, eggs, and dry fruits with spices.

Muharram

Muharram though not a festival of joy, does not lack traditional food preparations, which also differs from region to region. In Mumbai, the cauldrons of *khichra* (lamb cooked with seven grains) cooked on coal fire are very inviting and in Hyderabad lagans of *qubuli* (a fragrant aromatic *pulao* of bengal gram) spread their aroma around. *Badam ka sherbat* and *doodh ka sherbat* are distributed all over in memory of the *Imams* who sacrificed their lives in the battle of *Karbala*.

In Lucknow, with a majority of *shia* population, the scenario has a different colour. During *Muharram* all the *Imambaras* big or small are lit up and the sound of *matam* can be heard in every nook and corner of the city. Nawab Jiyo, in charge of the *bara Imambara* in Lucknow, said that during the days of Nawabi rule, *Muharram* was celebrated in great style. *Alams* and *patkas* for the *Muharram* procession were ordered much in advance. Curtains for *Imambaras* and veils for the *rozans* were prepared with the finest *zardozi* work. Besides the decoration of *Imambaras*, food also played an important role in *Muharram* celebrations. Throughout 10 days, Nawabs, *talugdars*, and distinguished personalities of Lucknow received *Tabarruk* from the *Imambaras* which consisted of one small *sheermal*, 2 *khamiri roti*, one dish of lamb *pulao*, one bowl of *tale aloo ka salan*, and 1 *handi* of *barfi* or a bowl of *zarda*. With the end of feudal days, all these practices have come to an end except the ordinary *tabarruk* of *sheermal* and *tale aloo ka salan*, which is distributed to all after the *majlis* at *Imambaras*.

Shab-e-Qadr

It is also known as *Laylat-al-Qadr* the night when the first verses of the Quran were revealed to Prophet Mohammed. On this night, God forgives the sins and accepts all the wishes, and that the annual decree is revealed. It is observed as the night to seek forgiveness by staying awake and engrossed in prayers special *salah (nafil)*, distribute meals (usually *sooji ka halwa*) to the relatives, neighbours, and the needy people, attend religious gatherings and try to please Allah. Muslims also visit the graves of their loved ones to pray for their eternal peace.

POPULAR VEGETARIAN DISHES

Khichdi – Two variants of khichdi are prepared, one using *moong dal* and the other using *urad dal*. *Moong dal khichdi* is usually served in sickness, along with buttermilk or curd and *pudina* chutney. *Urad dal khichdi* is usually made for breakfast during winters served with ghee or fresh white butter.

Kabooni – It is a rice preparation made with *chana dal*. It is usually served with *Sukhi laal mirch ki* chutney.

Matar Pulao - It is a rice preparation made with fresh peas. It is usually prepared in the winter season – the season of peas, it is served with *Sukhi laal mirch ki* chutney.

Dals and lentils – Some of the popular *dal* are *peeli moong ki dal*, *dal makhni (urad dal)*, *masri ki dal*, *rajma chhole*, etc. These can be eaten with either rice or *roti*.

Mangochi – Small dumplings called *mangochi* are made by steaming or deep frying paste of overnight soaked *chana dal*, *moong dal*. These dumplings are then added to the gravy of *shorba*. It is usually eaten with *roti*.

Kadhi – The *kadhi* is not only made with buttermilk and *besan* but small deep-fried dumplings of *besan* called *phulki* are dipped in *kadhi*. It is usually eaten with rice, but can also be eaten with *roti*.

Aaloo ke parathe, *gobhi ke parathe*, *matar ke parathe*, *mooli ke parathe* etc. are also popularly consumed for breakfast and sometimes for lunch or dinner.

Other commonly consumed vegetable *sabzi* are *tinde ki sabzi*, *kathal (jackfruit) ki sabzi*, *kathal ke beej ki sabzi*, *suki arvi (colocasia)*, *shorbe wali arvi*, *lauki ki bhujia*, *baingan ka bharta*, *kaddu ka saalan* etc.

POPULAR NON-VEGETARIAN DISHES

Naan Korma – *Naan* is a kind of bread made with fermented dough made out of refined wheat flour, and heated in a tandoor. *Naan Korma* is a famous combination served at weddings. *Korma* can either be made with mutton or chicken. A thick gravy is made with cashew nuts and other spices and condiments.

Yakhni pulao – In *yakhni pulao* selected aromatic spices are tied in a muslin cloth (*potli*) to prevent them from dispersing into the *yakhni* (stock) while boiling. The spice *potli* releases flavours which get incorporated into the lamb stock. The *potli* of spices is squeezed to pull out the flavours and then discarded. In *yakhni pulao*, the spices are boiled with the meat and later strained rice with *yakhni* of onion and whole spices

Kofta – Kofta are usually balls of ground meat mixed with various spices or herbs. The Persian dish is found in cuisines from across the world, from India to the Middle East. These meatballs are dipped in liquid gravy called *shorba*.

Nargisi kofta – It is a variant of *kofta* - mutton meat balls stuffed with boiled egg and dipped in *shorba*.

Shami Kebab – Normally made of minced meat, with a paste of lentils and chopped onion and coriander and green chillies usually added to the mixture, which is kneaded in a disc-like shape and fried.

Seenkh Kebab – Long *Kebabs* are made by applying mutton *keema* (minced) on long rods and cooking over burning coals.

Khichda Haleem – *Khichda* or *Khichda* (Urdu: کھچدا) is a variation of the dish Haleem, popular with Muslims of the Indian subcontinent. *Khichra* is cooked all year and particularly at the *Ashura* of Muharram. It is made up of goat meat, lentils and spices, slowly cooked to a thick paste. It is garnished with lemon juice, sliced and fried brown onion, coriander leaves, and *garam masala*.

Tahri – It is a yellow colour rice dish in Awadhi cuisine. Spices are added to plain cooked rice for flavour and colour. In one version of Tehri, potatoes are added to the rice. rice preparation with added turmeric and urad dal and mutton

Keema kachori – It is a popular street snack food. It is made with *Keema* added with *masalas*, chopped green chillies, and coriander leaves (Minced meat) stuffed in a layer of *roti* made of refined wheat flour.

Nalli Nihari - The Mughals introduced *Nalli Nihari* in the Indian subcontinent. Initially, Mutton Nihari was favoured by the noble lot. These days, Chicken Nihari is equally popular. In India, different versions of Nihari cooked with Beef, Mutton, or Chicken are available. Nihari is available in the villages as breakfast on the streets during the winter.

A lot of organ meat dishes are also prepared like - *Magza*, *Gurde kaleji*, *Khiri*, etc.

Other popular non-vegetarian dishes are a variety of *dal gosht* (lentils cooked with meat), *Shaljam Palak gosht*, *Matar keema*, *Lasaniya keema*, *Mutton Stew*, etc.

POPULAR DESSERTS OF MUSLIMS

Zarda - *Zarda* is a traditional sweet rice dessert originated from the Mughals. The name *Zarda* is derived from the Persian and Urdu term 'Zard' meaning yellow. The dish gets its name as it is prepared using yellow colour. It is usually garnished with dry fruits, *tutti-frutti* and *karonda*. *Zarda* also known as *meethe chawal* is usually prepared during special occasions like weddings, festivals, and celebrations.

Mutanjan - *Mutanjan* is a dish of Pakistani origin but its roots date back to the time of the Mughal Empire. *Mutanjan* was a favorite dish of Emperor Shahjahan and the dish was often prepared for his royal banquet, back in Mughal era. *Mutanjan* is a variant of *Zarda*, with a difference of colour only i.e. the *Zarda* was a dish of sweet boiled rice with mostly yellow whereas *Mutanjan* is assorted with a variety of different colours.

Ganne ke Ras ki kheer – It is a delicious winter dessert that can be served after meals every day. As winter is the season for sugarcane harvesting, this is a wonderful dish made with the natural sweetness

of sugarcane juice in the dessert. A delicious and healthy dessert made with rice cooked natural sugar from the sugarcane juice. It can be stored for weeks, and can be cooked with milk and garnished with coconuts before serving.

Boora chawal - *Boora* is a porous sugar that is made by melting sugar in water to reach a state of crystallization. This is how sugar loses its moisture and also it gets clean. Plain rice is eaten with *Boora* and a dollop of hot and melted ghee. It used to be served in weddings in the olden days.

Sooji Ka halwa – It is a dessert made with semolina roasted in ghee and cardamom is added for aroma and flavour. It is also a popular breakfast dish.

Kadha hua doodh – Milk is boiled and reduced by heating in a *kadhai*. This milk is very popular on winter nights and is served in mud cups called *kulhads* or *kasoras*.

Balushahi – It is a traditional fried flaky North Indian dessert. It is also known as Indian doughnut, though varies in taste and texture. It is glazed with sugar syrup.

Sewaiyan – A wide variety of desserts are prepared from Vermicelli. *Sheer*, *doodh sewaiya* and *sewaiyo ka halwa* are some famous dishes usually prepared on the festive occasion of Eid.

Other famous desserts in Uttar Pradesh are *doodh jalebi*, *rabdi jalebi*, *pheerni*, *ras-malai*, *shahi tukde with Rabdi*, *jalebi*, *imarti*, *gul daane*, *kaala-rasgulla*, *bengali-rasgulla*, *moti-choor ke laddoo*, *moong ki daal ka halwa*, *gajar ka halwa*, *meethe samosa*, *mawa barfi*, *halwa paratha*, etc.

ACCOMPANIMENTS

Tunday Kebabs – These are famous for their savoury and melt in your mouth flavour. These *Kebabs* are made from lamb or buffalo meat with a variety of spices to give it its unique flavour. Other than *tunday kebabs*, *galawti kebab*, *shami kebab*, *seekh or kakori kebab* is also famous.

Chha Phulki also a kind of *raita* made with buttermilk instead of curd, or curd consistency made watery by adding milk, small deep fried dumplings of spiced *besan* called *phulki*, sliced onion, and cumin seeds in hot oil are used for tempering.

Raita – *Boondi raita*, *Lauki ka raita*, mixed vegetable *raita*, etc. with tempering of cumin seeds or mustard seeds

Chutneys – A wide variety of chutney is prepared on *sil batta* that are varied in colours and ingredients. *Pudina* chutney usually served with *moong dal khichdi* for improving digestion, *Sukhi laal mirch ki* chutney usually served with *kabooni*. In summers chutneys are made even from seasonal fruits like mango, loquat, *khadal badal*, etc.

Achaar and Murabba – *Achaar* is made from fruits and vegetables in season, to be used during the off season. The most common *achaar* that can be easily found in any muslim household are – *kachche aam ka achaar*, *mirch ka achaar*, *nimbu ka achaar*, *gajar mooli ka achaar* etc. Also *seb ka murabba* (Apple) and *aavle ka murabba* (gooseberry) is quite famous.

FOODS DURING PREGNANCY AND LACTATION

Gond ke laddoo - laddoos made with *gond*, *magaj*, *kaaju*, *badam*, *makhane*, ghee, *gud*, and other dry fruits

Saandha – a *barfi* made from chopped dry fruits and *gond* roasted in ghee and sugar

Chhuani – especially given to a lactating mother for at least 45 days postpartum; it is a dry powder made from *gond*, *makhane*, and dry fruits, which is then cooked in either water or milk, and sugar is added before serving.

GENERAL ETIQUETTES AND PRACTICES TO BE FOLLOWED BY MUSLIMS

Never Criticize any Food

Food should not be criticized for any reason, even if a person dislikes it. The Prophet Muhammad (Peace be upon him - PBUH) never criticized any food that was offered to him (PBUH). “The Prophet (PBUH) never criticized any food (he was invited to), but he used to eat it if he liked the food, and leave it if he disliked it.” (Sahih Bukhari)

Dua (Supplication) Before Each Meal

One must begin eating by saying *Bismillah* (بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ), which means ‘In the name of Allah’. The Prophet Muhammad (PBUH) said: “The devil considers food lawful for him when Allah’s name is not mentioned over it.” (Muslim) Muslims are to start their eating by making the following Dua (supplication): “O Allah! Bless the food you have bestowed upon us and protect us from the torment of hell. In the name of Allah we start. When a Muslim forgets to say this Dua before starting to eat, and remembers it after a while, he should say: “In the name of Allah before and after.”

Dua (Supplication) After Each Meal

After completing the meal, Muslims praise and thank Allah for the blessings that he bestowed. After finishing their meal, Muslims say the following Dua: “Praise be to Allah the One Who gave us the food and the drink. Praise be to Him Who made us Muslims.”

Eating Less

One of the main principles of good health is a balanced diet. The Prophet Muhammad (PBUH) emphasized the habit of eating less as a method of preventing sickness and disease. The Prophet Muhammad (PBUH) said: “Nothing is worse than a person who fills his stomach. It should be enough for the son of Adam to have a few bites to satisfy his hunger. If he wishes more, it should be One third for his food, one third for his liquids, and one third for his breath.” Muslims are advised to eat no more than two-thirds of their normal capacity.

Eating Slowly

Eating slowly is recommended for health. Slow eating reduces the consumption of food, as it postpones much of the meal to a time when the absorption of nutrients begins to produce physiological

signals of satiety. Slow eating helps in chewing the food well. This results in the exercise of the jaws (mandibles) and the mixing of saliva with food. Hence, efficient digestion takes place because the food particles are cut into smaller pieces, not requiring as much churning in the stomach or intestine.

Moderation

The religion of Islam laid down the basis of dietary regulations as well as the limits within which man can satisfy his physical needs and desires without endangering his life and mental health. It teaches man to enjoy the pleasures of life, including food, moderately, not becoming a slave to his desires, and not losing sight of his ultimate spiritual goal. Eating is essential to sustain life and maintain health. Maintenance of health, in turn, is essential to carry out the duty of serving Allah and propagating His message. A Muslim is advised to avoid extremes and to choose a moderate course in all his affairs, including his eating habits.

The Prophet (PBUH) advised the Muslims to avoid overeating and he (PBUH) himself was the best example of restraint. Islam encourages Muslims to enjoy life within certain limits. Islam also encourages the individual to be content with little and to avoid greed. Consequently, it facilitates the feeling of contentment which induces happiness.

Sharing of food

Prophet Muhammad (PBUH) demonstrated to his followers the pleasures of sharing, as opposed to over-indulgence in the good things of life. The Prophet Muhammad (PBUH) said: "One person's food is enough for two, two people's food is enough for four and four people's food is enough for eight." (Muslim)

Sharing of food with neighbours, relatives, friends, the needy, and the destitute is emphasized. Ibn Abbas (R) reported that he heard the Messenger of Allah (SWT) saying: "He is not a believer who eats to his fill while his neighbour goes without food." (Reported by al-Bukhari)

Eating Together

Eating with others brings about harmony and understanding among people. The family members eating daily meals at the same time and the same table typify a happy family. Having meals together strengthens the family relationship.

People are usually relaxed when eating in company. Their minds are less absorbed in their daily activities and are free of worries. Thus, people are better able to communicate with one another. Even business deals are agreed upon more successfully during dinners or luncheons than in offices. Often, doubts and suspicions are removed when people dine together, even if they do not clear such doubts by openly seeking explanations.

It should be noted that overeating, whether as a form of compensation or because of emotional stress, most often involves people who eat alone. Aside from the misery of being lonely in a crowded society, people eating alone are often unable to sit down to their food with clear minds as others do. Thus, their physical behaviour is affected by their state of mind. Also, it is very hard to obtain satisfaction from food while the mind is engaged in straying thoughts. The nervous system seems to malfunction in

these situations, as in the case of physical illness and all other abnormal situations.

“Eat of what is lawful and wholesome on the earth.” (Quran 2:168)

“He created cattle that give you warmth, benefits and food to eat.” (Quran 16:5)

“It is He who subdued the seas, from which you eat fresh fish.” (Quran 16:14)

“It is he who sends down water from the sky with which He brings up corn, olives, dates and grapes and other fruit.” (Quran 16:11)

“In cattle too you have a worthy lesson. We give you to drink of that which is in their bellies, between the undigested food and blood: pure milk, a pleasant beverage for those who drink it.” (Quran 16:66)

FOODS THAT CAN BE PROMOTED FOR EAT RIGHT MOVEMENT

FOODS	BENEFITS
<i>Khajoor</i> , is the first food item consumed by Muslims to break the fast every day in the month of Ramadan.	Not only energy-dense but packed with micronutrients as well. High in fiber, thus help in relieving constipation. Promotes bone health. Good for maintaining cholesterol levels.
<i>Makhana</i> (Fox Nuts), can be made into ready to eat quick snacks by slightly roasting in ghee and adding pinch of salt.	Low in cholesterol, calories, fat, and sodium, which makes them an ideal snack to satiate the hunger for those intending to lose weight. These are gluten-free and known to be good for diabetics. An anti-aging enzyme in these seeds is said to help repair damaged proteins.
<i>Loquat, Eriobotrya japonica</i> , chutney or as whole fruit	Low in sodium and high in vitamin A, vitamin B6, dietary fiber, potassium, and manganese
<i>Chakotra, (Citrus Maxima) Pomelo or Grapefruit</i> , as whole fruit	Helps in the prevention of UTI, makes teeth and gum stronger, helps in wound healing, prevention of osteoporosis and is a rich source of the vitamin – C.
<i>Fruit Chaat</i>	A treasure of micronutrients- vitamins and minerals.
<i>Haleem Khichda</i>	Combinations of lentils, mutton, or chicken added to it make it a dish rich in protein.
<i>Mangochi</i>	Rich source of protein, due to the dal used in the making of <i>mangochi</i>
<i>Chha Phulki</i>	Healthy appetizer
<i>Chhuani</i>	Good for lactating women and can also be used as an energy-dense nutritious dish for treating chronic energy deficiency.
<i>Murabba, seb or amla</i>	Seb ka murabba helps relieve constipation. <i>Amle ka murabba</i> is good for hair, a cure for insomnia helps to treat piles, good for the liver, a remedy for constipation, indigestion, and organ inflammation.

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FOOD PATTERNS OF TRIBAL PEOPLE OF CHHATTISGARH AND ITS IMPACT OF HEALTH AND NUTRITION

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Abstract

Chhattisgarh is a newly formed state, on 1st November 2000 it has been separated from central India's Madhya Pradesh. Chhattisgarh is rich in terms of flora and fauna due to its biodiversity. Approximately 40%land of Chhattisgarh is covered with forest, which makes this state different from other states. Chhattisgarh state can be divided into major three areas based on the density of population i.e. - urban, rural, and tribal. In all three areas, the food pattern and food practices make it diversified. Rice is a staple food of this region. More than 100 varieties of green leafy vegetables are consumed by residents but the consumption of protein is less as compared to national recommendations similarly vitamin a, iron deficiency is still alarming, which is affecting the nutritional status of people. Continuous follow-ups, nutrition education, development of value-added foods, advocacy of value-added foods, and the importance of fortified foods should be reached to the last segment of society (tribal) to overcome the problem of malnutrition.

Introduction

Chhattisgarh is a newly formed state, on 1st November 2000 it has been separated from central India's Madhya Pradesh. Chhattisgarh is rich in terms of flora and fauna due to its biodiversity. Approximately 40%land of Chhattisgarh is covered with forest, which makes this state different from other states. Chhattisgarh state can be divided into major three areas based on the density of population i.e. - urban, rural, and tribal. In all three areas, the food pattern and food practices make it diversified. The north and south part of Chhattisgarh is tribal dominant whereas the central part of Chhattisgarh belongs to the urban and rural population.

As per NFHS-4, 31% of the total population belongs to a tribe, 46 %belong to an other backward class (OBC), and about one-seventh (14%) belong to a scheduled caste. Rest 9%belong to general

category, 24% or one-fourth of the population live in urban areas whereas the rest live in the rural or tribal areas. Surguja the north part of Chhattisgarh is tribal district, where Oraon, Kwar, and Gond are the main inhabitant tribes. Similarly, Bastar, south part of Chhattisgarh is a tribal district, the main tribe of this region is Gond, Baiga, Maria, Muriya, Korva, Abujhmaria, Bhatra, Halva and Dhurva are other major tribes of this region.

Agriculture is the main occupation of the population. Rice is the main staple of the whole region but more than 100 varieties of green leafy vegetables are commonly consumed by the inhabitants. The green vegetables found in tribal areas are different from other areas. The dominance of the cultivation of a variety of fruits and vegetables gives additional benefits of antioxidants and micronutrients in their diets. High consumption of green leafy vegetables and local fruits can be easily seen in the eating pattern of the local habitant.

Chhattisgarh state can be divided into major three areas based on the agro-climatic zones i.e. – the northern hill area, plains, and Bastar plateau. In all three areas, the food pattern and food practices make it diversified. The north part of Chhattisgarh is a hill area with tribal dominance whereas the central part of Chhattisgarh belongs to the urban and rural population and the southern part is popularly known as Bastar plateau.

The total geographical area of the state is around 138 Lakh ha. With a net sown area of 46.51 Lakh ha, which is 34% of its total geographical area. About 57% area has medium to light soil. Chhattisgarh has one of the richest bio-diverse areas in the country with around 63.4 Lakh ha. The area under forest cover, which is 46% of its total geographical area.

The total population of the state is around 2.55 Crore, of which about 70% population is engaged in Agriculture. There are around 37.46 Lakh farm families in the state, with about 80% of farmers falling under the Small and Marginal category. Paddy, Soybean, Urd and Arhar are the major Kharif Crops while Rabi season is mainly led by Chickpea and Lathyrus. Some districts of the state have good potential for sugarcane crops with 04 Cooperative sugar factories running successfully in the state. Other Crops of the state are Maize, Millets, Moong, Wheat, Groundnut, etc. Central plains of Chhattisgarh are known as the Rice Bowl of Central India.

Chhattisgarh has embarked on a concerted plan to increase double-cropped areas, diversify the cropping pattern and improve income from agro-based small-scale enterprises. To unlock the true potential of the Agriculture Sector in the state, the Government is paying special attention to better management of its water resources. To reduce the farmer's dependency on rainfall, the Government is working towards increasing the irrigation potential of the state. At present around 14.76 lakh ha. the area is the net irrigated area of the state which is about 32% of the net sown area. Following table -1 shows the agro-climatic zone of Chhattisgarh

Table-1 Agro-Climatic Zone Of Chhattisgarh*

Agro Climatic Zone	Districts Included	Total Geo. Area	Net sown area	Soil Type	Irri. %	Cropping Pattern	
						Rainfed	Irrigated
C.G. Plains (15 Distt.)	Raipur, Gariyaband, Balodabazar, Mahasamund, Dhamtari, Durg, Balod, Bemetara, Rajnandgaon, Kabirdham, Bilaspur, Mungeli, Korba, Janjgeer, Raigarh and a part of Kanker Districts (Narharpur and Kanker Block)	68.49 lakh ha. (50%)	32.95 Lakh ha.	Entisol 36 %, (Bhatha) Alfisol 21 %, (Matasi) Inceptisol 22 %, (Dorsa) Vertisol 18 %, (Kanhar) Alliuvial 3 % (Kachhar)	43 %	Rice - Fallow, Rice - Lathyrus, Rice - Gram / Wheat Soybean - Gram / Wheat Soybean + Arhar Kodo / Urd / Moong / Til + Arhar Maize - Mustard	Rice - Gram / Wheat / Sunflower, Rice - Rice / Maize, Maize - Urd, Vegetable - Vegetable, Soybean + Arhar, Sugarcane
Plateau (7 Distt.)	Jagdapur, Narayanpur, Beejapur, Kondagaon, Dantewada, Sukma and the remaining part of Kanker Districts	39.06 lakh ha. (29%)	6.40 Lakh ha.	Entisol 26 %, Alfisol 25 %, Inceptisol 34 %, Vertisol 10 %, Alliuvial 5 %	5 %	Rice - Fallow, Maize - Fallow, Millets / Niger - Fallow, Arhar + Moong / Urd - Fallow	Rice - Wheat / Gram Maize - Gram / Mustard Rice - Maize Vegetable - Vegetable Sugarcane
Northern Hills (5 Distt.)	Sarguja, Surajpur, Balrampur, Korja, Jashpur	28.47 lakh ha. (21%)	8.35 Lakh ha.	Entisol 13 %, Alfisol 29 %, Inceptisol	11 %	Rice - Fallow, Maize - Fallow,	Rice - Wheat, Maize - Wheat /

and Dharamjaigarh Tehsil of Raigarh Districts	28 %, Vertisol 28 %, Alluvial 2 %	Fallow - Horse Gram/Niger (Horsegram and niger are mid-season crop sown during Aug.to mid Sept.) Arhar - Fallow Rice - Wheat Maize - Mustard Sugarcane	Mustard, Vegetable - Vegetable Saga
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*Web site of Directorate of agriculture, Chhattisgarh 2020

FOOD HABITS AND MEAL PATTERN OF THE TRIBAL PEOPLE

The majority of the local population follow two or three meal pattern in a day. This pattern is common in tribes. In tribal areas, people consume all those food items which are easily available in their region. Most of the tribes have their small farm (they call it Badi) from where they get fresh vegetables. They consume chapattis prepared from cereals especially rice (made from leftover rice), they rarely consume wheat but a few millets and millets flour, maize, *menjari*, *barley*, *gondli*, *Ragi*, *kodo*, *kutki*, *jowar*, are consumed by tribal people.

Tribal people consume few pulses ie -: *Kulthi*, *batara*, lentil, *khesari*, blackgram, they eat few forest produces: *Bhelwa* (wild kaju), vegetables *Sakhen*, *Beans*, *Gourd*, bitter gourd, *Kareel*, *kareli*, *Ganthgobhi*, roots, and tubers like *Goithikand*, *Beetroot*, *Shaljam*, *Upkakand*, *Gajrakand*, *Arabi*, Sweet potato, *Pej*, *pasia*, *sattu*.

Common leafy vegetables like *bathua*, *sarso*, *chanti*, *dalsag*, onion leaves, *china-palak*, *methi* leaves, pumpkin leaves, cauliflower leaves, *lal* (*amaranth*), *lakra bhaji*, *palak*, *putcal*, *munga* leaves.

Flowers of *Munga*, *zirhul*, banana, pumpkin, *lakra* flowers, *Mahua* and *Tamarind* seeds and *Sarai* seeds.

Seasonal Fruits are *guava*, *custard-apple*, *jamun*, *amla*, *ber*, *mango*, *tendu*, *tamarind*, *sugarcane*, *munga*, *lakra*, *roasted groundnut*, *grams with jaggery*. Seasonal fruits are easily available in tribal areas.

Few chutneys that are popular among tribals such as the **Red ant's chutney**, **Lakra chutney**, **tomato chutney**. Tribal people like one more type of chutney made of ginger, chilli, and garlic chutney mostly eaten by them in dinner with rice and leafy vegetables. Boiled tubers and *Mahua* is one of the favourite breakfast items of the tribals and they consume this along with *baasi* (*leftover rice overnight soaked in*

water and consumed in the morning along with water). **This enhances the microbial load and increases the probiotic properties of the food.**

In urban and rural areas of Chhattisgarh *Baasi* is mostly consumed in summer. *Baasi* provide energy and satiety. It is consumed with green chilli, onion, mango pickle and *dahi* or *chhas*. *Baasi* is nutritionally dense in terms of providing nutrients (carbs, protein, vitamin, and minerals along with other food items added or consumed with *baasi*) it becomes healthy breakfast (Joglekar and Nair, 2014).

Animal rearing (hen, goat, and cow) is very common in tribes. Eggs and other non-vegetarian food products (easily available in the forest) are consumed by them.

COOKING METHOD USED BY TRIBAL

Mostly earthen pots are used by tribal for cooking. Nowadays utensils of aluminum, Brass, Bronze are also popular among them. Wood is the major source of fuel. Other means of fuel are coal, bran, dry leaves, now the use of LPG, cow dung gas, solar cooker, and the heater has been started by these people.

The **cooking method** followed by most of the tribal and rural population is boiling, steaming, covered with paddy, and stir-frying in little oil. Most of the tribal population prefer a simple and less spicy diet, cooked from a natural medium, steaming boiling, direct cooking in the fire, or using covered or rolled in leaves of Banana, Sarai, many vegetables, cereals, chapattis were cooked. This creates a pleasant flavour. Ash/Powel is used for cleaning utensils.

Storage of cereals and other food items is done either in earthen pots or bamboo baskets. Bamboo baskets are plastered with mud and cow dung used for this purpose. Besides food, the food items which were generally stored were wildflowers, bamboo shoots, mushrooms, green leafy vegetables, spices, red ants, mango, seeds, *mahua*, and other dried vegetables. One of the oldest methods of preserving food is to reduce the moisture content of the substance. There are two principal reasons which make this method more cost-effective on large scale, first the saving in transport action and storage cost, secondly, the weight of the dried product is about 1/3rd of the original.

Fermentation and Dehydration method of preservation is most commonly used by tribal, certain household preservatives such as salt sugar, acid, spices, and smoke are used for preservation purposes especially for the pickling process. Tribal people preserved food items for further consumption, they mostly preserve food by drying method.

They usually dry different types of leafy vegetables, laakra, *Amla*, *unripened mango (amchur)*, *Tomato*, *Cabbage*, *Radish*, *Bitter gourd*, *Grams*, *Chips*, *Mushrooms*, *Zirhul*, *Munga flowers*, *Tamarind*, *Chironji*, *Achar*, *Ber*, *Jamun*, *Amchur*, *dried small salted Fishes*, *kaccharia forest produces Bamboo shoots*, *Harra*, *Bahera*, *Mahua*. *Pickles of kareel (bamboo shoot fresh and small)*, *Ginger and Chillies*, *karonda*, *kathal*, *kaith Mango*, *Cauliflower*, and *Lemon* are common among them.

FEW RECIPES FROM CHHATTISGARH

It has been stated earlier that rice is a staple food of Chhattisgarh. Chhattisgarh is popularly known as **DHAAN KA KATORA**. Hence most of the recipes are prepared by using rice as a base product. The popular breakfast items like *fara/muthiya*, *angakar roti*, *chousela roti* are rice based only. Tribal uses

chana dals for few special recipes. Few uncommon and different recipes and their products are listed here.

TIKHUR:- A traditional herb and food available in the market in Baster region that is being sold like hot cakes across the district. It belongs to the ginger family which is popularly known as *TIKHUR* here (East India Arrowroot). It has got many medicinal values too. The villagers turn it into a powder after they grind it hard with a stone. That's what is sold in the local Haat (or market) as *Tikhur*. The people in the region take it making a syrup/potion or cake-like substance during fast that is said to provide respite in summer.

Tikhur has medicinal value too. It is taken as a non-irritating diet during the convalescence from fever and other chronic diseases. It is given to the new-born baby as a substitute for breast milk. It is good for stomach related ailments and helpful in the prevention of constipation. It is given to the lactating mother.

Mahuwa:- This special *mahuwa chutney* is made from *mahuwa flower*. This is very famous in tribal areas of Chhattisgarh. The small fruits, *mahuwa* is dried and then soaked in water after that it is very well ground, and jaggery is added to it. The chutney is served with paratha. Also, a very different recipe known as *thokva* is made using this chutney. *Thokva* is a type of paratha made using cornflour and *mahuwa chutney*.

Mahuwa Juice: - The people of Chhattisgarh are fond of this juice. For making this juice *mahuwa* is soaked in water for few minutes and then ground well with a sufficient amount of water, salt, gur, and lemon juice is added as per taste. Sometimes pounded jeera powder is added.

Idhar Kadhi: - *Idhar kadhi* is one of the most loved, buttermilk based curries in Chhattisgarh. It is cooked on most special occasions and requires some amount of expertise to make. *Idhar* is made from colocasia leaves and urad dal batter steamed and cut into cylinders then fried golden brown after that it is dipped into *kadhi*.

Aamat :- *Aamat* is considered as Chhattisgarh's sambhar. The amazing delicacy is prepared with mixed vegetables, and paste of ginger and garlic, and tamarind. Traditionally this dish is prepared in bamboo shoots, which is prevalent in all the remote areas of Chhattisgarh till date, but it can be made in *kadhai/degachi* sometimes in earthen pots also. *Aamat* is spicy and yummy.

Petha is a kind of exquisite sweet dish which is prepared by the Chhattisgarh tribes.

Rice is a staple food of this region, hence all the recipes are mostly made by rice only. People of Chhattisgarh are fond of special snacks prepared by rice ie, *chila, fara, bhapauri* and *bada*.

Chila – This snack is a part of every Chhattisgarhi family. This is nonfermented dosa, specially made from new rice. This is simply prepared by rice batter. Water, salt (as per taste) is mixed in rice flour and a liquid-free flowing batter is prepared for chila. Sometimes garlic, coriander, and green chilli are added to this.

After heating a pan, spread the oil on the surface of a pan and then make pancake (dosa) from the batter. Nowadays for gram flour has been added to *chila* to enhance the nutritive value.

Chila is served with tomato chutney (*patal ke chutney*).

Bafauri: *Pakodas* is every Indian's favourite snack. *Bafuari* is simply a healthy alternative for those oily pakoras. *Bafauri* is a famous dish of the Chhattisgarh state which is cooked with *Chana Daal* flour. Various vegetables and spices are added to the mixture according to the taste. The dough is prepared in the form of balls and is steamed. The fact that it is not cooked in oil makes it extremely healthy to eat.

Aamat : *Aamat* is considered as Chhattisgarh's sambhar. The amazing delicacy is prepared with mixed vegetables, and a paste of ginger and garlic. Traditionally this dish is prepared in bamboo shoots, which is prevalent in all the remote areas of Chhattisgarh till date, but you can make it in *kadhai* also. *Aamat* is spicy and yummy. The aroma of the dish is simply amazing.

Fara- This is also a rice based snack. This is desi type of *momos*. This is usually prepared with leftover cooked rice and rice flour. It is made in the form of a dumpling with minimum spices and coriander leaves that add the best flavour and aroma to the food.

After making it as a dumpling, it is put on steam for 10-15 minutes and then served hot with chili sauce. It is also best served with *aloo ghobi ki khurma* and ghee.

Angakar roti – this is prepared with rice flour and leftover rice with Green chilli, coriander leaves, salt -as per taste. Add luke warm water and make a soft dough using all ingredients, leave it for few minutes, heat the pan then make thick roti like *bhakri* and roast from both side on coal.

Mahuwa Chutney- Amazing *mahuwa chutney* is very famous in the tribal area of Chhattisgarh (Bastar). The small fruits, *mahuwa* is dried and then soaked in water after that it is very well ground with jaggery. It is served with paratha. Also, a very different dish known as *thekva* is made using this chutney. *Thekva* is a type of paratha made using cornflour

Chaprah- *Chaprah (chapda)* a pungent chutney which is made of **red ants and their eggs** and is a local delicacy in Bastar.

Thali - Chhattisgarhi thali contains-Rice /chausela puri(made out of rice flour), Various types of *daal (sabut masur/lauki chana daal/sabut urad daal)*, Various types of bhaji (*khatta bhaji/chaulai/laal bhaji/gol bhaji/buhaar bhaji/munga leaves bhaji*), *kathal vegetable/kheda veg kadhi, chawal papad*, onion, green chilli, *dehrori* (sweet) ,

Chhattisgarh is known for its various variety of bhaji (approx 45 different types) which are very nutritious. *Sabut daals* in the form of *kadhi* are among popular recipes. Dals are prepared along with *lauki/ turai* which are packed with minerals and proteins. Chutney is a main part of thali. It is prepared as per season, but *patal ke chutney* (tomato *chutney*) is most liked by people.

In Chhattisgarh mostly vegetables are cooked with curd named as *khatta bhaji*, one more type of veg is famous is *minjhara* (mix veg bhaji. If we observed the thali we can see that cereal is dominant, but the consumption of pulses is less than normal. Mostly pulses are used as *kadhi*.

HEALTH AND NUTRITIONAL STATUS

Overall health status of women, children, and young girls are not satisfactory as micronutrient

deficiency still hampering. Mahtari yojana is launched by the honourable chief minister to overcome the problem of protein and micronutrient deficiency. As rice is a staple food of inhabitants and the average consumption of dal is less than normal, hence in the above mentioned unique nutrition programme nutrient-rich diet is provided to mother and children in anganwadis. Sprouted grains, soyabean and peanuts for protein, eggs for B12, jaggery, green vegetables and pickles for iron deficiency is served.

As per NFHS-4 According to NFHS-4, 26.7% (C.17\ G-29.6%Bastar-40.6%) of tribal women had Body Mass Index (BMI) below 18.5,7 indicating chronic energy deficiency. Various studies on the tribal population of India revealed that their diets are nutritionally deficient and chronic energy deficiency was high among the tribal population. Micronutrient deficiency is a major contributor to childhood morbidity and mortality. Vitamin A is an essential nutrient for the immune system. 27% of women and 24 %t of men in Chhattisgarh are too thin, and 12percent of women and 10 percent of men are overweight or obese. About three-fifths of women and two-thirds of men are at a healthy weight for their height. Undernutrition is particularly common in the younger age groups, in rural areas, and among those belonging to scheduled tribes and other backward classes. Overweight and obesity are most prevalent in older adults, those in urban areas, those with at least 12 years of schooling, Stunted(low height-for-age)Wasted(low weight-for-height) Underweight (low weight-for-age), and those who are not in a scheduled caste, a scheduled tribe, or other backward class.

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From the Heart of India [Madhya Pradesh]

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INTRODUCTION

It was in 1950 after independence that Madhya Pradesh was created from the former British Central provinces and that is why earlier Madhya Pradesh was called central provinces. It is situated in the center of the heart of India and so is called the “Heart of India”. Madhya Pradesh has no coastline and no International frontier. It is the second-largest Indian State in size. Chhattisgarh was carved out from the state in 2000. Its boundaries touch Chhattisgarh, Maharashtra, Gujarat, and Rajasthan. This influences the living and eating pattern of the people.

The state has a very pleasant amalgamation of Hindus, Jains, Christian, Muslims, Buddhists, and Sikhs. Hindi is the main language of Madhya Pradesh with a large variety of dialects. Some of the world-famous touring spots of Madhya Pradesh are Khajuraho and Sanchi. The green environment of Madhya Pradesh is also another attraction. With its large area, Madhya Pradesh has diverse climatic and soil conditions suitable for a broad range of agricultural products.

The backbone of the economy of Madhya Pradesh is agriculture. Agriculture contributes almost 25% of the gross state domestic product [GDSP] and provides employment to almost 65% of the population and so contributes 60-75% of rural incomes.

Population

The population of Madhya Pradesh consists of several ethnic groups and tribes, castes and communities, including the indigenous tribals and relatively more recent migrants from other states. The scheduled castes and the scheduled tribes constitute a significant portion of the population of the State. The main tribal groups in Madhya Pradesh are Gond, Bhil, Baiga, Korku, Bhadia (or Bhariya), Halba, Kaul, Mariya, Malto, and Sahariya. Dhar, Jhabua, and Mandla districts have more than 50 percent tribal population. In Khargone, Chhindwara, Seoni, Sidhi, Singrauli, and Shahdol districts 30-50 percent population is of tribes.

Crops of Madhya Pradesh

Crops of Madhya Pradesh are divided into three categories namely Cash Crops, Oilseeds and

Food Grains and wheat maize, paddy are grown in abundance.

Major crops of Madhya Pradesh that are cultivated in the region comprise of Paddy, Wheat, Maize and Jowar among Cereals, Gram, Tur, Urad and Moong among Pulses, while Soybean, Groundnut, and Mustard among Oilseeds. The major crops are grown in this state of Central India also includes commercial crops like cotton and Sugarcane. These two significant cash crops are grown in a considerable area in few districts of Madhya Pradesh. Horticulture crops like Potato, Onion, Garlic, along with fruits like Papaya, Banana, Oranges, Mango and Grapes are also grown in the state of Madhya Pradesh. In some parts of the state, medicinal crops and narcotic crops are also cultivated.

It is very interesting to see the various ways in which foods are used.

WHEAT : Wheat is considered as the major crop of the state in terms of area and production. Wheat occupies the highest area under Rabi crops. The wheat-producing areas of Madhya Pradesh come under the wheat belt of the country, where about 75 cm to 127 cm of rainfall occurs. The main wheat-growing districts of the regions are Sehore district, Vidisha district, Raisen district, Shivpuri district, Gwalior, Ujjain, Hoshangabad district, Sagar district, Tikamgarh district, Satna district, and Indore district.

Wheat is the main crop grown and “Sharbati” is the most premium type of wheat available in the country. Wheat is considered as the major crop of the state in terms of area and production. Sharbati wheat which is famed for its delicious taste and sweetness is grown in and around Sehore District and Vidisha District. It is high in Potash content because it is rainwater irrigated Madhya Pradesh is a wheat-growing state are many interesting ways in which it is used.

Besides using wheat as flour to make *chapattis*, *Parathas*, and *Pooris*, there are many other ways in which wheat is used. It is used to make *Halwa*, the National favorite sweet dish.

Lapsi: This is a high-calorie sweet dish made of broken wheat pieces and ghee along with nuts, raisins, and dried fruit. It is cooked a little loose and can be made as liquidy and runny as required.

Wheat Dalia is popularly used and cooked with vegetables in a *Pulao* form or again in a more liquid form depending on whether it is to be used as a meal for a person with normal digestion or someone who has got gut issues.

Palak Poori is a very popular dish of Madhya Pradesh, whereas the name suggests, it is made with spinach kneaded in wheat flour. It is eaten as a breakfast meal as well as for lunch and is usually served with raita and aloo sabzi. The best palak puri is available in the Jabalpur area.

Chakhi Ki Shak is made from wheat flour which is kneaded with water turmeric powder, salt, and carom seeds. It is made into a log, cut up, and steamed. They are then fried and put into a spicy gravy made with ginger, garlic, tomatoes, etc, and curd is added to the gravy. Thus it becomes a complete meal though some people may have it with some rice as well.

Daal Bafla that is fondly served in many parts of Madhya Pradesh has got its influence from Rajasthani cuisine and is very similar to the famous *Daal Bati* of Rajasthan. *Bafla* is a delicious treat of the wheat balls well cooked in ghee. The dish is well complemented with a bowl of *Daal* and coriander sauce

(Hari chutney). *Daal Bafla* is not only tasty but also provides a good dose of multiple vitamins, proteins, carbohydrates, and fat just in the right quantity. The best *Daal Bafla* is served in Bhopal in Madhya Pradesh.

Malpua is prepared with flour, fried in ghee, and then dipped in the sugar syrup to add the taste that will make you crave the dish again and again. The dressing of some saffron can further enhance the taste of this dish. *Malpua* is best served with *rabdi* for a complete treat. The best *Malpura* will be served in Jabalpur. They are thick in the center and thin on the sides.

PADDY : This stands second after wheat and since this needs about 100-125 cms of rainfall, it is grown in the eastern part of Madhya Pradesh. The irrigated area for rice is available in Balaghat, Gwalior, Jabalpur, and Bhind.

In the eastern zone Satna, Rewa, Sidhi, Shahdol, Dindori, and Mandla a large part of Madhya Pradesh do use rice as a regular part of the meal. That is why many agricultural colleges of the state are working towards qualitative and quantitative improvement in the rice.

Besides the usual way of cooking rice, it is very popularly eaten as beaten *rice* or *poha*, puffed rice or *murmura*. Both the products are traditionally prepared with the help of iron equipment, thus improving the iron content. Very often *murmura* is eaten with roasted *channa*, and groundnut as an accompaniment so that it contributes a certain amount of protein as well.

Poha on the other hand is eaten practically every day as a breakfast meal or even as a snack at any time of the day. It is sometimes served with *besan* “*Sev*”.

Both the dishes are quite often served with lemon squeezed on it. Of late some people especially those in the urban areas who are aware have started adding sprouts or vegetables it to enhance the nutritional value of this high carbohydrate snack.

Rice besides being eaten with the popular *tua dal* is also cooked as *khichadi*, *kheer*, etc. But a different way of eating is with buttermilk a dish called “*Rice Maheri*”

MAIZE : Almost 10% of India’s maize is grown in Madhya Pradesh. Mandla and Dindori districts are the highest producers. There are multiple ways in which maize is used in Madhya Pradesh. Besides being used as flour or *dalia*, one of the favorite is *bhutta kees*, which is unique to the Madhya Pradesh area.

Bhutte Ki Kees is made of grated corn which is well cooked with skimmed milk with spices like mustard seeds and green chilies. The presence of skimmed milk adds a slightly sweetish taste.

Maize is considered cooling by some communities and so is used in summers. Another unique way of using cornflour is by kneading the flour with *gur* and rolled out like biscuits, fried, and used as a snack.

During certain illnesses, after fever when the taste of the mouth is not good, broken maize or *macca dalia* is mixed with buttermilk and given as a semi-liquid gruel. *Tuar dal* with maize porridge is eaten in a certain area as a form of porridge.

Milk with maize roti is another popular way of using maize. Obviously, these are nutritious local eating patters.

JOWAR : Is grown in the dry regions of the western region of Madhya Pradesh. It is of course eaten as flour and *dalia*, but in certain areas, it is considered best to eat with Urad dal.

BAJRA : It is grown in the warmer parts of Madhya Pradesh as it requires soils with high salinity and low pH. It is popularly eaten with *channa bhaji*. *Bajra Poori* with *Channa Bhaji* and buttermilk is a popular combination. Obviously, it is very nutritious. There is a breakfast dish called *Maheri* which is a sort of Khichari made with butter milk, *jowar* and *jeera*. It is very filling. The belief is that if this is stored in mud vessels, it can be stored for a long time in summers to keep it cool. In winters this may be warmed up and used.

Two Millets need special mention called *kodu* and *kutki*. Everyone is familiar with the above cereals but Kodu millet is a highly drought-resistant crop. It is Also known as cow grass or rice grass. The grain doesn't require much rainfall and is drought tolerant. It appears to have been domesticated 3000 years ago and its grain is covered with a horny seed coat which is removed before cooking.

Compared to other cereals it has a lower carbohydrate content and so in the areas where it is grown the belief is that it should be eaten by diabetics. No studies seem to have been conducted regarding the scientific use of this millet in diabetes. It is cultivated in the Dindori district of Madhya Pradesh mainly by Bajra and Gond communities.

KUTKI [*Panicum Sumatrense*]: This is also known as the little millet and is a small cereal. It also has very desirable traits of water efficiency and heat tolerance. It grows well even in areas with soil fertility. It is thus grown on less fertile land and is used as an intercrop with legumes, gram, or sesame requiring little or no inputs. A big advantage is that Kutki does not have gluten.

CONCERNS: It is evident that the green revolution has nudged out the use of many of the most unusual but highly nutritive cereals from the local meals. Increasing entitlements for subsidized rice and wheat through India's public distribution system has nudged out these millets. Had they been made a part of the system, they would have helped improve diet diversity while making provision for wages for local crops.

Both *Kodu* and *Kutki* are considered food for the poor even by the rural people.

Protein foods, pulses, milk, oil seeds, and non vegetarian foods

Considering the poor status of the protein intake in the state, it is surprising to know that 1/4th of the total protein production of the country is in Madhya Pradesh.

PULSES: Gram, Tuar, Urad and Moong are the most commonly grown pulses in Madhya Pradesh. Although across the state, in rural or urban communities *tuar dal* is the most popular and commonly used dal. It is eaten with chapatti, rice, *bati*, *bafla* and is an all-time favourite.

Traditionally the whole pulses are cleaned and ground at home with the help of *Chakki*. They are then sieved and used. Farmers with large farms but not very large families, usually sell to factories for

cleaning and processing. People do not use pulses regularly. Usually, pulses are cooked when rice is to be eaten so in wheat-eating areas it is usually vegetables with chapatti leading to severe protein deficiency.

In the post-delivery situation, moong dal is the chosen dal for feeding the lactating ladies. Roasted gram [*Phutana*] is very popularly eaten. Gram is grown in many districts and there are different varieties of *channa* used. *Besan* obtained from *channa dal* is commonly used as *Cheela*, *Cury*, *Pakodas* [dumplings], *besan laddus* [sweet dish].

A dish called *Bhoonja* is liked a lot. This consists of *masoor dal* and an equal amount of rice. Rice is cooked and then *masoor dal* is ground and this dal is added to cooked rice with extra water and cooked again. This is a savoury dish.

Black Urad dal is converted to *Poori*, *Matharis*, *Badas*, *Papad*, etc and used. Dal is ground into its flour and used to make these recipes. One of the beliefs is that pulses cause bloating and gas formation so it is usually not given for two to half months after delivery.

Pulses that were grown locally and used in the homes have been replaced by soybean which is sold off for money. This has resulted in the high cost of pulses traditionally used leading to a further gap in protein intake.

Dals in Madhya Pradesh is used for making dal *cheelas and pakodas* as well but the prohibitive cost has reduced the use.

SOYABEAN: Madhya Pradesh stands first in the production of soybean mainly grown in Chhindwara, Seoni, Indore, Dhar, Ujjain, etc. The tragedy is that despite Madhya Pradesh is the largest producer, its utilization at the household level is very poor. The reasons are many :

- Poor awareness of its advantages.
- Poor understanding of how to use it.

The decision to grow soybean instead of traditional dals has thus decreased the protein intake of people

OTHER OIL SEEDS: Besides soybean, til, alsi, mustard and groundnut are grown. Mustard oil is widely used in certain communities. Groundnut of course is used in many ways. It is eaten raw, boiled, roasted and as groundnut chikki. Very popular it is one of the most nutritious snacks – easy to carry, store, and liked while providing good protein and calories.

Til or sesame seeds are available as white or black. They are used widely to make ladoos and to halwa, lapsi, etc.

MILK : Surprisingly, Madhya Pradesh is the second-largest producer of milk in India yet its use is very poor. Converting milk into curd is done but it is buttermilk which is more commonly used, across Madhya Pradesh everything and anything is teamed up with buttermilk and used whether it is Jowar or Bajra, or wheat and its preparation. Milk is more predominately used in Indore and Gwalior.

Mawa Bati- The perfect crisp, the right amount of sweetness, and the perfect texture. Mawa Bati is probably one dish that defines the sweet dish palate of Madhya Pradesh. It is prepared with mawa dough

which is mixed with rich dry fruits. After deep frying the mawa dough balls, the dish is well-soaked in the sugar syrup to add sweetness to the dish. Mawa Bati is one dish that you cannot miss to munch on when you are in Madhya Pradesh.

It is in Indore that one can taste other milk treats like *Shikanji* which is not lime juice, but a thick milk preparation sweet in the test with cream and some dry fruits.

Imarti is a sweet dish made almost the same way as *Jalebi*. *Mawa* or *Khoya* is mixed with some arrowroot and a thick dark brown *Jalebi* which tastes a little like *Gulab Jamun* is made. Khajuraho will serve you *Gajar Halwa*, *Orcha* has its milk cake.

amazing delicacies

There is no end to the list of amazing delicacies that you will find in the heart of India. ***Srikhand, Imarti, Faluda, Kaju Katli, Lavang Lata, and Rabri*** are among the few other dishes that can easily satisfy your sweet tooth. Gujiyas is the other sweets made during Holi and Diwali. Made with refined flour it contains a stuffing of all kinds of dry fruits and coconut, fried and dipped in sugar syrup.

Apart from various cuisines, Madhya Pradesh is also famous for its different styles of ***Namkeen. Dalmoth, Phalhari Potato Chivra, Khatta Metha Chivra and Khasta Kachori*** are some of the snacks that are delightful in taste.

NON VEGETARIAN FOODS: There is a strong influence of Mughali cuisines across Madhya Pradesh, especially Bhopal. Some of the most popular and delicious *are Seekh Kababas, Shami Kababs, Korma, and Biryani* which are cooked differently. Bhopal is considered the best for this.

The *Bhopali mutton Korma* provides a great dose of spices and involves cooking mutton slowly with lots of spices.

VEGETABLES: There is a wide variety of vegetables available. In the gourd family, there is a very wide variety of bottle gourds, pumpkins, *chachindas*, etc. Yellow pumpkin is eaten in many ways as Halwas, Kheer, vegetables, etc. Another dish is *Papad ki Sabji*, where Papad after frying or roasting is added into a gravy made with onions, tomatoes, and spices. it is eaten with rice or roti.

Besides the commonly available green leafy vegetables, many other leaves are used. Carrot leaves are used for chutneys. Of course, spinach, fenugreek, bathua, radish leaves are aplenty. Madhya Pradesh has also got drumstick leaves which are the richest micronutrient source of vitamin A, iron, calcium, etc. Some people who have drumstick trees in the house, consume a few young leaves every day almost like eating tulsi leaves.

Another surprising thing is that the leaves of *Loki, Turai, Kaddu* [the gourd family] are used in the rainy season when other leaves are not available. These leaves are tempered with *Lahsan* and eaten. They are cooked in water and then added to Channa dal as well. Peas, brinjals, ladies fingers, onions, tomato, and potato are also some of the other vegetables grown all across the state. Red coloured and green coloured leafy vegetables called *Lal Bhaji* and *green bhaji* are very popular. Besides these many other leaves are used which remain unidentified and unrecognized.

Colocasia leaves make a very popular dish with gram flour spread on the leaves, steamed, and then

fried. These leaves are also eaten as cooked *saag*.

In the roots and tuber family besides the usual potato, sweet potato *sooran*, *garadu* are also very popular. *Garadu* fried and eaten as a snack with spices is very popular. *Sooran* needs to be cleaned by applying oil on the hands as it can lead to itching. It is then boiled with imli or lime and then cooked with spices. Colocasia [Arbi] is considered very necessary for all age groups in the rural areas towards Sagar. It is eaten with buttermilk.

FRUITS: Sugar cane, mangoes, guavas, amla, custard apples, banana, and oranges are the commonly grown fruits. Ber, Guavas the vitamin C-rich fruits are available right from November till May/June. They are relished as chutneys. Ber [Ziziphus] is also boiled, dried and stored, and then eaten with salt. Roasted guava is used as a chutney. The small *karonda* berries are used as pickles and chutneys. It can be fried and used as a vegetable with meals.

Bael is used very extensively as a drink and is considered very cool for summers. It is also eaten by breaking its outer hardcover and eaten as a fruit.

When talking of Madhya Pradesh, a special mention is a must of Mahua. Flowers of Mahua tree are used to make jams, jellies, biscuits, etc. Madhya Pradesh seed oil is extracted and used as a biofuel. The residual leftover is burnt to keep snakes at bay. The fruit of Mahua is used to make *Mahua laddoos*. They are made by roasting them in the mud till they become crisp. Then pulverized and mixed with, nariyal, groundnut, and laddus are made. These can be kept for 3-4 months and considered almost medicinal for bone health and good nutrition.

The Mahua tree has a lot of importance in the lives of tribals, especially in summers. Mahua oil is used even for cooking besides the laddus and biscuits and jam. The most awaited event is when the tree flowers. The reason is that these flowers are used to make alcohol. Many tribals distill it at home, but the Gond and Bheel tribes of central and South-Eastern Madhya Pradesh collect and sell the flowers to local distilleries that convert it to strong alcohol. It is said that this alcohol does not leave any hangover.

SNACKS: *Chaat* culture is prevalent in the whole of Madhya Pradesh but Indore is the hub of it. Even *samosas* are served not with just *chutneys* but also chickpeas, so a twist is given to most chat products. Like a simple *curd papdi* is served with raw onions, tomatoes, and chickpeas making it a better *proteinous snack*.

Indore is famous also for various mixtures and is locally called *sev*. You get them in various tastes and flavours – *garlic sev*, *Ratlami sev*, *mint sev*, *spinach sev*. Don't go by the names, they are as high in fat and high sodium as any other mixture.

Saboodana khichadi, *sago patties*, *coconut patties*, *shikanji* are other favourite snacks. Sabudana khichadi is cooked with peanuts and green chilies. Absolutely delicious but although it is considered a dish to be eaten during fasting, it is usually relished by everyone.

NUTRITIONAL STATUS DATA

Despite the huge diverse crops and vegetables, Madhya Pradesh does not do very well on the health front.

According to the NFHS-5 data [2018-2019]

1. 30% of adolescents have BMI less than 18.
2. 33.46% of adults have BMI less than 18.
3. The situation is worse as far as anemia is concerned. 50% of women and 70% of children are anemic and 28% of men are anemic as well.
4. 80% of children between 6 months to 3 years are not fed adequately. What a pity that such a treasure trove of rich foods is going to waste.

Daily consumption of food groups by women is astonishing

1. Only 20% of women use milk.
2. 43% of women use pulses.
3. Despite the wide variety, only 40% of women use green leafy vegetables.
4. Only 5% of women use fruit.

Myths and practices impacting the nutritional status

1. People of Madhya Pradesh usually follow a two meal pattern of eating in a day. In vulnerable groups like women, adolescents, this effectively reduces almost one-third of the food intake.
2. There are innumerable beliefs impacting food use.
 - a. Foods classified as hot or cold without any scientific basis are adhered to. Unfortunately, this consists of the most nutritious foods. For example :
 - i. **Hot foods:** Groundnut, Channa dal, Nonvegetarian foods, eggs, chilies in some areas even milk.
 - ii. **Cold foods:** All vitamin C-rich foods like oranges, guava as well as rice, radish, curd, etc. of course these beliefs vary from area to area.
3. In some areas, an infant is not fed at 6 months as it is believed that it stops them from walking. Also that the child gets a bloated stomach on eating.
4. In certain communities, it is believed that the child will eat by himself/herself when they grow up and there is no need to push for eating.

Adolescent Girls :

- Besides the restriction of hot and cold foods, they are often saddled with the duties of looking after their younger siblings and the household chores. This is one of the causes. Some of the others are being given food last, social beliefs about the importance of girl child, early marriages, restrictions during menarche, etc.

Pregnant Women :

- They encounter innumerable beliefs. One of them is that it is good to eat less during pregnancy as it

will lead to a small child so that the mother has less problem during delivery.

- That other is that eating too much food might crush the child. This kind of belief impacts the use of food that is available in the homes and communities.

Way Forward :

- The most important step would be creating awareness regarding the various services provided by the government and encouraging people to use them.
- At the community, level dispelling wrong beliefs and ensuring adequate use of foods available locally and in the season would go a long way in militating the poor nutritional status of the people of Madhya Pradesh.

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Promotion of Local Foods to improve Dietary Diversity in Madhya Pradesh: An Insight in Food and Nutrition Security, Enhanced Resilience (FaNS) project in Madhya Pradesh.

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1. Background

National Family Health Survey (NFHS-4, 2015-16)¹¹ data recorded 42.8% of children under five years of age being underweight in Madhya Pradesh. The data also shows that 42% of children less than 5 years of age are stunted, and 25.8% are wasted. 52.5% of all women between 15-49 years of age are anaemic. The first 1,000 days of a child's life are critical for ensuring adequate nutrition to enable optimal health, development, and growth. Poor food intake by women, especially during pregnancy and lactation, adolescent girls, and inadequate infant and young child feeding (IYCF) practices contribute to Madhya Pradesh's concerning malnutrition situation.

The tribal population (21.2%) in the state is severely challenged by malnutrition, and 55.9% of tribal children are underweight. As per the Ministry of Tribal Affairs², the food intake and intake of various nutrients in their diet have decreased in the last decade amongst the tribal population due to depleting forest cover, their dependence on forest for vegetables and fruits has reduced. As per the 2011 census, 44.7% of tribals are engaged in cultivation as their main occupation, with 36.7% engaged as agricultural labourers. This implies that 82% of tribals are dependent on agriculture for a livelihood. Simultaneously, nearly 71.6% of the tribal population faces food insufficiency for two to three months and 5% for six months or more a year.¹⁸

Promoting local foods and nutritionally enhancing them can help in reducing nutritional problems in these communities. Combining the traditional knowledge of food from the indigenous tribes across Madhya Pradesh (Gond, Baiga, Bhil, etc.) with nutritional awareness, local food, and tribal heritage can be conserved. Millets are one such traditional food that has lost importance over the last few decades. By utilizing their local importance and high nutrient and calorific value, sustainable cropping can be promoted. Agricultural practices like shifting cultivation that is followed by the tribes in Madhya Pradesh are suited for agroecological conditions and should be promoted along with the diversification of cropping methods on a large scale (like legume-intercropping). Further, the enforced lockdown due to the Coronavirus pandemic in India in early 2020 has led to a food and nutrition crisis as well. Hence, the pandemic put the focus on 'local available and nutritious foods' and 'community-based initiatives' to address food and nutrition insecurity among women and children.

In this chapter, we present how Food and Nutrition Security, Enhanced Resilience Project (FaNS) project is contributing to promoting food and nutrition security through promotion and the increasing availability of local foods, improving knowledge and practices of women on nutrition, and ultimately aiming to improve dietary diversity of women and children,

2. Global Programme on Food and Nutrition Security and Enhanced Resilience

The GIZ (German Technical Development Cooperation) Food and Nutrition Security, Enhanced Resilience Project (FaNS) is part of the global special initiative 'One World – No Hunger' by the German Federal Ministry for Economic Cooperation and Development (BMZ) and being implemented since 2015 in 10 countries in Sub-Saharan Africa and Asia including India (until mid-2020 12 countries). FaNS India project has been mainly working in two districts of the state of Madhya Pradesh, collaborating with the Department of Women and Child Development (DWCD), Government of Madhya Pradesh, to improve the food and nutrition situation for women of child-bearing age, pregnant and lactating women, and small children (0-2 years of age) from vulnerable communities. In Sheopur district of Madhya Pradesh 52.1 % of children under 5 years are stunted, 28.1% are wasted. In Chhatarpur district 42.7% of children under 5 years are stunted, 18.9% are wasted according to National Family Health Survey, 2015-16.

FaNS project in collaboration with Welthungerhilfe and two local NGO partners Darshna Mahila Kalyan Samiti and Mahatma Gandhi Seva Ashram has provided technical support for improving the services under the Integrated Child Development Services (ICDS) scheme which includes the training of Anganwadi Workers (AWWs) on facilitation of Nutrition Participatory Learning and Action (N-PLA) nutrition education for women on dietary diversity, breastfeeding, complementary feeding practices, and personal hygiene. Since 2016, more than 144,000 women participated in the meetings in the two project districts Sheopur and Chhatarpur facilitated by 3,025 Anganwadi Workers applying participatory and engaging methods such as power walks, role plays, and cooking demonstrations. Complementary to these measures, improved community monitoring and awareness campaigns like street theatres at the district and village level through local NGO partners were promoted. Further, for the capacity building of AWWs, the FaNS project in collaboration with DWCD developed an innovative and interactive 40 hours e-learning training platform called "Anganwadi Shiksha" to improve the counseling skills and knowledge of 100,000 AWWs and their Supervisors in nutrition-relevant topics across Madhya Pradesh.

In co-operation with local NGO partner Parmath the project piloted 20 Community Nutrition Gardens (CNGs) and promoted seed banks in a form of storage and diversification, and they enhance farmers' ability to buffer environmental and economic stress by planting several crop varieties adapted to a range of environmental conditions. At the same time, seed banks facilitate farmers' access to markets and give farmers more choice over what they grow. Seed banks enable rural tribal villages to become less dependent on engineered high-yield varieties and expensive inputs such as fertilizers and pesticides. Traditionally, seed preservation has been women's role, and their knowledge of seeds has been extensive. Therefore, women play a major role in the conservation of diversity at the farm level. It is women who decide on the amount of seed and selections of varieties to be stored and the various ways of storing them. The SHG members were provided guidance and technical know-how of storing the seeds of different vegetables for the next season in both districts. This would help them to save their money spent on purchasing seed.

GIZ FaNS completed its first project phase (2015-2020) and is entering into its second phase with a continued focus on Nutrition Participatory Learning and Action (N-PLA) training for 280,000 women in further districts and scaling-up of a successful piloted community nutrition garden approach with women. Self-Help Groups (12-15 members per garden) will develop up to 500 one hectare sized gardens in four districts of Madhya Pradesh and two new districts in another state. This improves the food availability and also livelihoods. Furthermore, the project will contribute to improved nutrition governance with its political partners.



[* File contains invalid data | In-line.JPG *]

3. FaNS activities related to the promotion of local food consumption

GIZ FaNS in collaboration with Welthungerhilfe promotes behaviour change in nutrition and hygiene practices, through active engagement of women in the N-PLA training using action-based participatory tools, e.g. cooking demonstrations, role plays, etc. In alignment with the dietary guidelines of the Food and Agriculture Organization's (2012), which present national nutrition needs in the form of simple dietary advice for the public, the N-PLA training have capacitated the women to diversify their own and family's diet. Anganwadi Workers have been trained by local implementation partners to facilitate N-PLA training with women in a cascade manner. The N-PLA approach comprises 20 trainings with women including two community sessions involving men, district administration and village council, etc. The N-PLA trainings have empowered the community to demand and access food and nutrition entitlements, e.g. under the Integrated Child Development Services scheme and the Targeted Public Distribution System, and to establish homestead nutrition gardens. The concept of diverse food groups and the importance of consuming at least 5 food groups is promoted through participatory games, such as power walk, problem picture cards voting through pebbles, mapping of locally available foods, posters of 10 food groups, seasonal calendar, and role-plays, storytelling, etc.

Local food groups are important to ensure the year-round availability of nutrient-rich food for the community. Under this topic, the participants are engaged to develop a seasonal calendar based on the different available food during the year. It is noteworthy to mention that villages are rich in uncultivated food varieties, e.g. from forests. This meeting helps the community to understand the nutritional values and consumption of these food groups such as chia seeds rich in Omega-3. Local foods are categorized into protective foods, body-building foods, and immunity building foods for easy understanding of women to consume diverse food-groups.



The project promotes the training of community members on cooking nutritious recipes of locally available foods as part of nutrition awareness and knowledge-generating activities. Various activities such as participatory preparation of seasonal food calendar, cooking demonstration with locally available food, and community picnic for children under 2 years of age. Promotion of local nutritious foods is a key component of N-PLA training with women as there is a significant tribal population in the Bundelkhand and Chambal division which has a rich biodiversity and food ethnography.



Based on the understanding of the seasonal crops and their availability, a **seasonal food calendar** is developed during a food group meeting. Mapping of all cultivated and uncultivated foods in the village, identifying seasonal availability of fruits and vegetables mainly forest and local produce are done during this meeting in form of a calendar. It proves to be an effective tool in finding nutritious variety throughout the year.



In participatory **cooking demonstrations**, the Anganwadi worker demonstrates different traditional local cuisines in front of the N-PLA participants and explains how daily recipes can be enriched, e.g. with moringa leaves. A focus is also on preparing homemade baby-friendly food to promote complementary feeding among children between 6-23 months. Women bring their locally available food to the N-PLA session.

The Anganwadi Worker discusses with women the nutritional value of the different foods and the role of different nutrients for immunity, growth, and development of children. Both cooking demonstrations and food exhibitions in Anganwadi centres are done by using locally available herbs, vegetables, pulses, and staples which are nutritious and low-cost. This has been quite effective in motivating women to use local foods. Traditionally grown vegetables are e.g. *faang bhaji* (forest herb), *sareta*, *chirangle*, *bathua* (leafy vegetables are wildy grown in forest belt), *tendu fruit* (*Diospyros melanoxylon*), *bael* (marmelos), *ber* (wild fruits), corn (maize) and other millets. The use of super-foods like moringa, Indian gooseberry, and chia seeds are also promoted to be used in various recipes. Women were also trained in food preservation techniques.

Picnic for children under 2 years of age is a unique concept to promote the use of child-friendly local foods and recipes. It is organized by Anganwadi workers as a community event engaging Gram Panchayat (village council) and Community Leaders in an open space. During the picnic, women in groups of two are engaged to make nutritious recipes adopting hygiene practices and feeding the young children with a bowl/spoon. Various community local games like Khichdi game (selecting a different variety of ingredients to make nutritious porridge) is organized to motivate mothers to cook specially for young children. For example, Madhuca (Mahua) porridge is a local and nutritious recipe demonstrated during the picnic.

4. Development of Recipe Booklet and recipe Videos using Local Foods

In cooperation with the DWCD, FaNS project developed ten recipe videos¹ of local cuisines in Madhya Pradesh for three nutrition-relevant life stages: children under six, adolescent girls, pregnant/lactating mothers. Also, videos on the management of malnutrition, diarrhea management, and anaemia were developed.

(Footnotes)

¹ Link to access videos on Nutritionally Enriched Local Recipes:

1. Adolescent Girls – Nutritious recipes: <https://www.youtube.com/watch?v=0cBiB6G3EQY>
2. Anaemia- Causes, Symptoms & Dietary Requirements: <https://www.youtube.com/watch?v=u4LrGLaVqy4>
3. Nutrition for children (6 -12 months): <https://www.youtube.com/watch?v=e6fxDy6dQIY>
4. Nutrition for children (1- 3 years): <https://www.youtube.com/watch?v=CrPOcvbE4cc>
5. Nutrition for children (3- 6 years): <https://www.youtube.com/watch?v=dLb01chiayU>
6. Pregnant Women –Nutritious food recipes: <https://www.youtube.com/watch?v=7HojE1ZQeCU>
7. Lactating Women –Nutritious food recipes: <https://www.youtube.com/watch?v=L0gCVU1bIok>
8. Diarrhoea Management: <https://www.youtube.com/watch?v=P51SrWhSP0A>
9. Nutrition during illness: <https://youtu.be/n18H8oYXFQs>
10. Malnutrition management: <https://youtu.be/lljt93soIGo>

The videos show in the Hindi language how to prepare local recipes with increased nutritional value by adding nutrient-rich ingredients such as moringa leaves. Anganwadi Workers show the videos to women during nutrition trainings. Through this attractive medium, the participants of the training courses learn how to improve daily recipes with locally available ingredients For example Indori Poha is a

popular breakfast snack in Madhya Pradesh, this can be enriched by adding groundnuts to increase protein, lemon to enhance absorption of iron present in *poha* (beaten rice) and by replacing *sev* topping with coriander leaves, raisins and pomegranate (*anar*) makes it healthy and tasty.

Jointly with the DWCD, FaNS project also developed a local recipe book – similar to the mentioned recipe videos. For this purpose, supervisors from the Anganwadi Workers compiled 30 local recipes for three important phases of life (adolescent girls, pregnant/lactating women, children under six years of age) and improved them nutritionally, for example increasing the iron content of *khichdi* with moringa leaves. A nutritional expert from the project looked through all the recipes and added a nutrient analysis. The recipe book is available both in Hindi and English and was handed out to 3,200 Supervisors in Madhya Pradesh and 3,025 AWW in the two FaNS project districts Sheopur and Chhatarpur in December 2019 so that they could pass on these nutrient-rich recipes to women of reproductive age in cooking demonstrations and nutrition trainings. As the recipes are everyday recipes that are supplemented with a locally available nutrient-rich ingredient, they are easy for the women to implement and low cost as well. For an example- Drumstick Pulao can be made than normal rice by adding drumstick leaves and flowers (locally cultivated) in pulao which extensively increases its iron, Vitamin A and C content. Another such example is *sago khichdi*, commonly consumed by adolescent girls and women during





RECIPES FOR ADOLESCENT GIRLS

10) SAGO KHICHDI WITH AMARANTH CURRY

Sabudana/sago and amaranth are foods that are consumed usually during fasting.

Serving: 2 persons
Preparation Time: 40 min
Cooking Time: 15 min

Enrich your recipe
 Sago is commonly consumed as a khichdi. When we eat it with amaranth curry it provides added protein and calcium.

Ingredients

For the sago

- 250 g sago
- ½ kg potato
- 100 g groundnuts
- 30 g oil
- fennel, rock salt, sugar & salt as per taste
- 10 curry leaves
- 1 tbsp green coriander
- 3 green chillies
- juice of half a lemon

For the curry

- 200 g of yogurt
- 100 g of potatoes
- 50 g of groundnuts
- 16 g Rajgira flour
- 10 curry leaves
- 2 green chillis
- rock salt, sugar as per taste
- ½ tsp cumin seeds

Preparation

- 1 Clean the sago and soak in water for 30 min.
- 2 Wash all the vegetables and let the water drain out.
- 3 Add a teaspoon of oil and mix with hand.
- 4 Peel potatoes, boil and cut.
- 5 Roast groundnuts and grind into a coarse powder.

Method

For the Sago khichdi:

- 1 Heat oil in a pan and sauté cumin seeds, fennel (saunf), green chillies.
- 2 Add groundnut powder and potatoes.
- 3 Add sago, salt and cook for 5 min.

For the amaranth curry:

- 1 Blend the curd, groundnuts and boiled potatoes in a mixer.
- 2 Garnish with coriander leaves, add lemon juice.

- 3 Mix the amaranth flour in the blended mixture ensuring that there are no lumps.
- 4 Put the mixture into the seasoning and cook for 10 min.
- 5 Heat oil and cumin seeds in a pan for the seasoning.
- 6 Add rock salt as per taste and cook for 2 min.
- 7 Serve the hot amaranth curry with the sago khichdi.

Nutritive Value
 Per person

Calorie	2153.2
Protein (g)	73.4
Fat (g)	62.0
Carbohydrates (g)	290.7
Calcium (mg)	528.5
Iron (mg)	16.3
Vitamin-A (mcg)	72.8

Tips/precautions
 Put in adequate water to soak the sago

fasting. When we eat it with amaranth (easily available locally) curry it provides added protein and calcium.

5. Use of Local Foods through a simple innovative tool- Poshan Matka (Community sharing of diverse food to improve the nutritional status of the vulnerable community):

Coronavirus pandemic in India has led to a food and nutrition crisis as well. Hence, the pandemic put the focus on ‘local available and nutritious foods’ and ‘community-based initiatives’ to address food and nutrition insecurity among women and children. During Poshan Maah (National Nutrition Month) celebration in Madhya Pradesh, a unique grain bank called “Poshan Matka” - a simple innovative tool to ensure food and nutritional needs of vulnerable families was initiated by DWCD field functionaries. These community-led initiatives recognize the potential cultural, economic equality, and social values of interventions that promote locally empowered action and social inclusion in “Poshan Abhiyaan”.

“Community-based conservation of local foods” and “Jan Andolan” have become an integral part of the Poshan Matka initiative, and more attention is being paid to this approach on the ground by the young people especially the women and adolescent girls (as change agents). With this, the Poshan Matka initiative ensures that traditional knowledge and wisdom of the local community are preserved with the help of the younger generation while also focusing on the nutritional value of this knowledge.



6. Nutri-mix using local ingredients to improve nutrition security during COVID-19

Adequate and regular complementary feeding of infants with home-based foods from 6 months of age along with breastfeeding is crucial for their healthy growth and development. Instant food mixes are vital as a child needs to be fed 5-6 times a day as per WHO recommendations. It is also convenient and helpful for families who cook only once or twice a day. Such instant foods help enable the adequate feeding of infants, particularly in rural India. To provide nutritious food to infants and children during the time of a pandemic is equally critical and challenging. Despite many challenges, FaNs partner Welthungerhilfe with its partners- Mahatma Gandhi Sewa Ashram and Darshna Mahila Kalyan Samiti - brings an easy-to-make instant nutritious food mix. It is prepared from locally available cereals, millets pulses, nuts and oilseeds which are high in nutrition content.



Nutri-Mix Preparation

7. Impact of Local Foods on Dietary Diversity for Women and Children :

GIZ FaNS conducted various surveys and studies to assess how N-PLA training improves nutrition knowledge and promotes local food consumption that results in improved dietary diversity for women and young children. A Mid-Line Survey conducted in Aug-2018 (N=600) showed that local food promotion and nutrition education through N-PLA has positive effects on the dietary diversity of women and children. Almost two thirds (61 %) of women reported that it is important to consume food from e” 5 food groups in their daily diets. The knowledge level on the number of food groups in a diversified diet was better in Sheopur (69%) compared to Chhatarpur (54%). 93% of frontline workers reported the importance of e” 5 food groups per day by families. Knowledge of early initiation of breastfeeding among women was almost universal with 91%, same for frontline workers (99%). The awareness was

much higher among tribal women in Sheopur (94%) despite almost 50% of them have no education. The prevalence of commonly consumed food groups among women were 99% grains, white roots, and tubers, followed by 77% pulses and 66% other vegetables. Very few women consumed dark green leafy vegetables (18%) and vitamin A-rich fruits and vegetables (13%). The consumption of other fruits was 39%. About 50% of the women consumed milk and milk products, meat, poultry, and fish (5%), and eggs (2%) were very low. The kitchen garden initiatives improved knowledge among women, however, it did not contribute to improving dietary diversity scores among women. Moreover, a knowledge-action gap was also one of the main findings of the Mid-Line Survey as the knowledge of women increased whereas dietary diversity scores did not improve much. This led us to conduct a social behavioural change qualitative study in September 2019 to understand the barriers and facilitators of improved nutrition in the community. The study emphasized the promotion of local foods through homestead gardens, cooking demonstration, nutrition knowledge enhancement and male involvement in nutrition could improve the adoption of good nutritional practices in the community. Another Follow-Up Survey conducted in 2020 showed that MDD-W increased by one food-group in the intervention areas as compared to baselines whereas there was a doubling of women who achieved Maternal Dietary Diversity. However, the challenge on improving dietary diversity of young children still continues as we found that although Minimum Dietary Diversity-Children improved but scores on Minimum Meal Frequency was poor.

Nutritious Plate (Poshan Thali): A Poshan Thali initiative was developed during National Nutrition Month in 2017, FaNS jointly developed with DWCD a Poshan Thali to improve the use of local foods and cuisines for the preparation of a Nutritious Thali.





Picture rights: © GIZ

NFHS-4 MP Factsheet: http://rchiips.org/nfhs/pdf/NFHS4/MP_FactSheet.pdf

¹ Forest Rights Act, by Samarthan, July 2011: <https://www.undp.org/content/dam/india/docs/DG/recognition-of-community-rights-under-forest-rights-act-in-madhya-pradesh-and-chhattisgarh-challenges-and-way-forward.pdf>

Biography of the contributors – Volume 1

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Dr. S. ALAMELU MANGAI, M.Sc., M.Phil., PGDCA., Ph.D(FSMD), Specialized in Nutrition, Food Service Management and Dietetics has 26 years of experience in research and teaching, currently serving as Assistant Professor (SG), PG & Research Department of Home Science, Bharathidasan Government College for Women, Govt. of Puducherry. Has published and presented more than 60 articles in Journals, Edited Books, Conference Proceedings both National and International, and has received 15 Best Paper Awards. She has the credit of organizing 15 International conferences, six National, 17 Regional Conferences, and Seminars. Have been an Invited Speaker, Chair Person, Keynote Speaker, and Resource Person in more than 40 technical academic sessions and conferences. She is a speaker at All India Radios podcasts on Food and Nutrition. She is a member of various academic bodies. Her contribution to the academic Curriculum extends being an *E-content writer in Post Graduate subject: Home Science for the paper Management of Food Service and in Food and Nutrition for the paper Therapeutic Nutrition under ‘Developing Courseware in Home Science’ for ePG Pathshala under NMEICT, MHRD, Govt. of India. Also, she has contributed as a Content Expert & Content Reviewer – in the development of Text Book for Standard +1 & +2 for Subject - Food Service Management, Vocational Education - Higher Education Theory and Practical’s, SCERT, Tamil Nadu State Board. She has received STATE LEVEL BEST NSS PROGRAMME OFFICER AWARD, BEST CAMPUS AMBASSADOR AWARD of ‘Your Voice’ an initiative of Election Department, Govt. of Puducherry. Received BEST WOMEN EDUCATOR AWARD in HOME SCIENCE from PEARL Foundation. She has been the Nodal Officer for Colleges for Govt. Programs. And is the Chairperson, of Legal Services Clinic of Bharathidasan Government College for Women - an initiative of Union Territory of Puducherry Legal Service Authority, State Coordinator of Ek Bharat Shrestha Bharat –UT Puducherry.*

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About the Book

This book is in tandem with the current National movement of India, “Be Vocal for Local”. It is based on the principle that food, anthropology (culture), agriculture, and health are all interconnected. For planning a good diet chart, we must understand regional crops, food choices, and traditions. Many food habits and ancient foods and food systems followed by indigenous people of India, have health benefits and were resilient.

The book has contributions from over 64 Nutritionists, Dietitians, Sociologists, Botanist, Anthropologists, and Historians across India, and will be a very useful reference book for Students, Practicing Dietitians/Nutritionists, Anthropologists, Community Development Professionals, and Policymakers/Bureaucrats, and anyone who has a desire to learn about the rich culture of India.

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