

Food Habit and Livelihood Pattern of Monpa Tribe of Arunachal Pradesh: A Comprehensive Socio-Ecological Analysis

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Abstract

The Monpa tribe of Arunachal Pradesh is one of the important indigenous tribes of the Eastern Himalayas whose livelihood and food systems are intricately linked with the ecological and cultural landscape of the region. The present study focuses on the traditional food habits and livelihood patterns of the Monpa people with a view to understanding the interdependence of natural resources, subsistence practices and socio-cultural traditions. The diet of the Monpa people consists of locally available cereals, millets, vegetables, fermented foods, dairy products and meat, showing adaptation to the high altitude climatic conditions. Indigenous knowledge is important for food preservation, seasonal consumption and sustainable resource use. However, the report also notes the emergence of changes from market integration, infrastructural development and changing consumption patterns which are slowly beginning to influence traditional livelihoods and food practices. Understanding these dynamics is important to frame development policies that are sensitive to the culture, ensure food security and promote sustainable livelihood strategies among the Monpa community. The study underscores the need for maintaining traditional knowledge systems alongside modern interventions for inclusive and sustainable development.

Keywords: Food Habits, Eastern Himalayas, Livelihood, Subsistence Practices, Sustainable Development.

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INTRODUCTION

Monpa are one of the prominent Buddhist tribal groups of Arunachal Pradesh, which can be found in Tawang and West Kameng districts. The tribe is well known as a tribe with rich cultural heritage, indigenous knowledge systems, traditional foods and sustainable livelihood patterns. Food habits and livelihood practices are also embedded in tribal culture and identity especially in the indigenous people of the North-eastern states of India. The traditional knowledge systems of each of the tribal groups of Arunachal Pradesh are deep and are intricately linked with their ecology, natural resources and socio-cultural institutions. Of these communities, the Monpa Tribe of Tawang and West Kameng in the high altitudes is one of the most culturally unique Buddhist tribal communities of the Eastern Himalayas. They have integrated their traditional food systems with the agriculture, animal husbandry, forestry and handicraft practices with the fragile mountain eco-system.

Traditionally the Monpa people are mixed farmers, rearing livestock, keeping yaks, weaving,

utilizing forests and conducting business in the region to sustain their livelihood and economic viability. They continue to depend on agriculture as the major source of livelihood, growing maize, barley, millet, buckwheat, potato, paddy and vegetables depending on the seasonal climatic conditions. Household income and food security is also largely dependent on livestock like yak, sheep, cattle and pig (Namsa *et al.*, 2011).

Buddhism and the cold Himalayan climate have influenced the food habits of the Monpas. They primarily eat locally grown cereals, fermented foods, milk products, meat, wild edible plants, bamboo shoots and traditional drinks. Butter tea, yak cheese, fermented foods, millet preparations and rice beer hold an important role in their everyday diet and religious rituals. Traditional drinks like locally prepared rice beer is consumed during festivals, marriage and religious ceremonies and bring people together, continuity of culture (Namsa *et al.*, 2011).

The Monpa community also has extensive ethno-botanical knowledge on edible and medicinal plants. They supplement their nutrition and medicine

with wild vegetables, herbs and forest products. Several species of plants are used for food, medicine, ritual, dyes and fermentation. This illustrates the close link between biodiversity conservation and livelihoods of the locals in the area. The traditional knowledge of Monpas has played a significant role in the conservation of natural resources and environment in Eastern Himalayan region for sustainable utilization.

The traditional way of life and food habits of the Monpa people have, however, been affected by modernization, urbanization, market penetration, tourism and changing food habits in recent years. There is a transformation of traditional food consumption among the younger generation and the disappearance of some traditional livelihoods and food items. However, an attempt is being made to revive and maintain the traditional Monpa food and sustainable way of living as symbol of their cultural heritage and ecological identity. Hence the study of food habit and livelihood pattern of Monpa tribe is significant to have understanding of socio-economic life, nutritional habit, indigenous knowledge system and cultural sustainability of the tribal community of Arunachal Pradesh. The studies also help in the larger context of food security, sustainable development, biodiversity conservation, and safeguarding of indigenous cultural heritage in the Himalayan region.

LITERATURE REVIEW

Most of the literature about food habits and livelihood systems of the Monpa tribe in Arunachal Pradesh is related to ethnobotany, traditional ecological knowledge, agriculture, food culture and indigenous resource management. The strong association of Monpa people with their natural environment, and the importance of traditional knowledge systems for their socio-economic and cultural life, has been noted by several scholars.

Namsa *et al.* (2011) documented ethnobotanical practices of the Monpa community in Arunachal Pradesh is one of the most important contribution in the study of Monpa tribe. Their study revealed that a wide range of plants are used in everyday life, such as food aid, traditional medicine, fermented drinks and plants for ritual purposes as well as plants that are used as food supplements. The authors noted that the Monpa have the deep indigenous knowledge of the plants of wild origin and their fermentation processes as a part of their food habits and healthcare practice. The study also highlighted the close relationship between food consumption patterns of the Monpas and their ecological adaptation and Buddhist cultural practices.

Namsa *et al.* (2011) have also mentioned that agriculture, yak rearing, livestock management, seasonal hunting, and forest products are the means of livelihood of the Monpas traditionally. In the higher

altitude Himalayan regions crops like maize, paddy, millet, barley, wheat, cabbage, potato, pumpkin are grown depending on the climatic conditions. The study concluded that local drinks and fermented food products play an important part socially and culturally in festivals, marriage and religious occasions.

Singh and Pandey (2020) studied the contribution of traditional ecological knowledge in the conservation of biodiversity of Monpa tribe. They concluded that traditional activities like sustainable agriculture, forest protection and community-based resource management are meaningful factors of ecological balance in the Eastern Himalayas. The researchers noted that the Monpa community has embraced a balance between livelihood and environmental sustainability in its traditional custom and practices and local institutions. It has contributed to the conservation of biodiversity and natural resources in the fragile mountain ecosystems through indigenous ecological knowledge.

In the study of resource availability and utilization, Chakravarty Singh and Sharma (2020) have discussed the Monpa tribe of Dirang circle of Arunachal Pradesh. Based on their work they learned that the Monpa people heavily rely on the natural resources of their surroundings for subsistence and economy. The main livelihood activities identified were agriculture, animal husbandry, handicrafts/weaving and forest resource utilization. The study also highlighted how some of the traditional occupations and food habits have been changing due to modernization and changing socio-economic conditions in the younger generation.

Mandal (2014) specifically investigated the food habits and livelihood pattern of Monpa tribe in Tawang district. Their research identified their consumption of traditional foods like butter tea, yak meat, churpi, fermented bamboo shoots, millet-based foods, and locally brewed drinks. The authors noted that the traditional feeding habits are not just nutritional, but also linked to cultural identity, religious convictions and ability to adapt to the environment. The study also explored the impacts of tourism, urbanization, education, and market integration on Monpa food consumption and diversification of livelihoods.

There are also a few general studies related to tribal food systems in the Northeast India region that can offer some insights on the Monpa community. Climatic conditions, the availability of biodiversity, cultural beliefs and subsistence-based economies have been found to significantly influence the food habits of the tribes of the Himalayan region, as emphasized by researchers. Indigenous food systems tend to employ locally grown crops, wild edible vegetables, fermented foods, and livestock based diets. These aspects are important for promoting nutrition security and sustaining cultural continuity.

In recent years, there have also been concerns raised on the community about the loss of indigenous foods practices because of modernization, migration, and more processed foods being eaten. The importance of safeguarding traditional Monpa cuisine, sustainable agriculture and traditional ecological knowledge for future generations is highlighted in the community narratives.

RESEARCH GAP

While there are several studies related to their ethnobotanical knowledge, traditional ecological knowledge and resource utilization of Monpa tribe, limited research has been done on their food habit and livelihood patterns together. Very few studies have been conducted on modernization, dietary changes, livelihood diversification and socio-economic change on Monpa community of Arunachal Pradesh so far. Hence, the present study tries to bridge this gap by comprehensively analyzing the traditional and evolving food habits and livelihood system of Monpa tribe.

OBJECTIVES OF THE STUDY

On the basis of the 'Research Gap' the study aims to establish the following objectives of the study.

1. To explore the traditional food habits and dietary pattern of Monpa tribe of Arunachal Pradesh.
2. To study livelihood pattern and principal economic activities of Monpa community.
3. To understand the changes in Monpa's food habits and livelihoods due to modernization and socio-economic changes.
4. To explore the challenges and suggestions of food habit and livelihood pattern of Monpa tribe.

RESEARCH METHODOLOGY

This study is descriptive and analytical with a primary source of data being secondary sources. The data has been gathered from the research articles, books, ethnographic research, government research reports and academic journals related to the Monpa tribe of Arunachal Pradesh. The data collected were subjected to qualitative interpretation to find out the interrelationship between food habits, ecological adaptation and livelihood systems of Monpas.

Geographical Background of the Monpa Tribe

The Monpa people are primarily living in the high altitude areas of Tawang and West Kameng, in the vicinity of the Indo-Tibet border in Arunachal Pradesh. It has a mountainous terrain, cold climate, alpine forests and river valleys. These environmental factors have had a significant impact on the settlement pattern, farming practices and diet of the Monpas. According to Namsa *et al* (2011), the Monpa community has a vast traditional ecological knowledge of forest resources, medicinal plants and food systems. The Monpas have developed techniques of terrace farming, livestock raising and food preservation due to their harsh climate and the limited cultivable land.

RESULT AND DISCUSSION

1. TRADITIONAL FOOD HABITS OF THE MONPA TRIBE

The Monpa tribe is one of the major tribal groups of Arunachal Pradesh, which live in the districts of Tawang and West Kameng. The tribe are practicing Mahayana Buddhism and they have close cultural and historical ties with Tibetan civilization. The ecological environment of the tribes people has a significant impact on their socio-cultural life and food habits are one of the significant aspects of this impact, writes Verrier Elwin (1959). The Monpas' traditional food custom and practice has developed over the course of centuries as they adapted to the cold climate of the Himalayas, relying on the local agricultural production and farming practice involving livestock husbandry (Chaudhuri, 1990).

For Monpas, food is not only a source of sustenance but also a vital part of their religious rituals, social events, and cultural heritage. As mentioned by Singh (1995), tribal food systems in Arunachal Pradesh are tied with indigenous knowledge, environment sustainability, and traditions of the people.

1.1 Ecological Basis of Monpa Food Habits: The food habits of the Monpa tribe are largely shaped by the ecological conditions of the Eastern Himalayas. The harsh climate with low temperatures and relatively rougher topography of the region has promoted cultivation of hardy crops like barley, buckwheat, millet and maize (Bhasin, 2005). Bhasin (2005) states that traditional subsistence practices of the Monpa people involve the combination of agriculture, pastoralism and utilization of forest resources, thus assuring food security in difficult terrain.

The dominant livelihood is agriculture and the other is rearing yaks and dairy products, which supplement the nutritional needs. Because of the close connection between environmental resources and diet, it is not surprising that Elwin (1959) spoke of the "ecological adaptation of tribal communities to their environment.

1.2 The main foods and cereals: The traditional diet of the Monpa people is based on cereals. In this role, barley is especially important due to the use of this crop in cold climate conditions. Tsampa (roasted barley flour) is a staple food consumed on a regular basis and as a source of carbohydrates and energy (Bhasin, 2005).

With the advancement of transportation, better market availability, the rice crop has grown in significance for the Monpa people. The other grains that are widely cultivated and consumed are millet, maize and buckwheat, which are also used to make porridge, bread or fermented drinks (Singh, 1995). Himalayan tribes' dietary diversity is an important factor in

nutritional resilience and food security, as explained by Deb and Malhotra (2001).

1.3 The Monpa tribe's traditional dishes: There are a number of dishes which are important nutritionally as well as culturally to the traditional Monpa cuisine. The tsampa is still one of the most popular foods due to its portability, long shelf life and high caloric content (Bhasin, 2005). A popular way of preparing is Zan, a thick porridge of millet or barley flour. Pancakes made from buckwheat or barley flour (khura) are popular at the beginning of the day and at social events.

1.3.1 Vegetable noodle soup with meat (Thukpa) for winter time: On the same count, Momo and Gyapa Khazi are significant festive foods that are made at religious festival and/or community celebration time (Chaudhuri, 1990).

1.3.2 Vegetables and Plant Based Foods: The vegetables form an important part of the Monpa diet and are mostly grown in the household kitchen gardens. Common vegetables are cabbage, radish, turnip, spinach, mustard leaves, potatoes, carrots and beans. Singh (1995) said that vegetable cultivation in the tribal communities helps to improve their nutritional security and food intake diversity.

The Monpas also use a number of wild edible plants that they gather from the forests in the area. Deb and Malhotra (2001) noted that the use of indigenous knowledge about wild foods is significant in terms of nutrition and ecological sustainability for tribal people.

1.4 Animal Husbandry and Consumption of Meat: Traditional Monpa economy is centered on animal husbandry. Yaks, cattle, sheep, goats and poultry are provided with meat, milk and other products for the household use. Bhasin (2005) found that the husbandry of yaks is one of the important economic and cultural activity among the Monpas of Tawang and West Kameng.

In the winter season, the Monpas eat meat, especially in their food. Meat is commonly eaten and often dried or smoked for storage, with yak meat being notably popular, as well as pork, beef, mutton and poultry. These preservation methods help to maintain food supplies in situations where food is scarce or the weather is unfavorable (Chaudhuri, 1990).

1.4.1 Dairy products in Monpa cuisine: Yak and cow milk are used in the production of dairy products which play an important role in Monpa culture. Butter, cheese, curd and yogurt are often eaten and are good sources of protein and fat. It is observed in the study of Bhasin (2005) that yak butter plays a significant role in the lives of Monpa people and is heavily consumed in their daily lives, especially in cooking and religious ceremonies.

The traditional cheesemaking methods have been passed down through generations and play an important role in food preservation and dietary diversity.

1.5 Fermented Foods and Indigenous Preservation Techniques

1.5.1 Indigenous Preservation Methods and Fermentation: There are many indigenous preservation methods and different types of fermentation. One of the most important traditional food-processing technologies used by the Monpas is fermentation. To provide food throughout the year, fermented vegetables, dairy products, cereal based foods are processed. Singh (1995) reported that fermentation makes for increase in nutritional value, digestibility and shelf life.

Smoking and drying are a second indigenous method of preserving meat, also commonly used amongst the Monpas. These approaches are sophisticated in understanding food security and resource management in the mountainous areas (Deb & Malhotra, 2001).

1.5.2 Traditional Beverages: Traditional drinks have significance in Monpa social and cultural life. Tea leaves, yak butter and salt are used to make Butter Tea or Suja, which are a key source of energy and warmth that are consumed every day. Butter tea was integral to Monpa hospitality and in everyday life, as described by Bhasin (2005).

Alcoholic drinks like ara and chang are made by the fermentation of millet, maize, barley or rice. The drinks are also often offered at festivals, marriages and religious rituals and represent social solidarity and cultural continuity (Chaudhuri, 1990).

1.5.3 Food habits during festivals and religious ceremonies: In Monpa festivals and religious activities, food plays an important role. Special dishes such as Tsampa, Gyapa Khazi, Momo, Thukpa and traditional drinks are prepared during the festivals like Losar and Torgya in households. Elwin (1959) found that in the case of tribal societies, festivals and the sharing of food strengthen ties and cultural identity.

Food plays an important role in Monpa culture, as it is often given to the monasteries and monks as part of religious rituals. Thus, the traditional food habits of the Monpa tribe are a reflection of an intimate relationship between environmental adaptation, cultural traditions and nutritional needs. Their food system is built around cereals, vegetables, dairy products, meat, fermented foods and traditional beverages which collectively create a nutritional security and a sense of cultural continuity. Monpa food culture is a unique mixture of Himalayan ecology, indigenous knowledge and Buddhist culture as noted by Bhasin (2005). Even

with the modernisation and shifting consumption habits, traditional foods are still important in maintaining Monpa identity and heritage.

2. MONPA TRIBE'S LIVELIHOOD PATTERNS

The Monpa Tribe's livelihood patterns were analysed. Monpa tribe is one of the most prominent indigenous tribe of Arunachal Pradesh and is the major tribal group in Tawang. The Monpas live in the high mountain terrains of the Eastern Himalayan regions where they have evolved very special livelihood strategies which are well suited to the ecological, climatic and socio-cultural conditions of the region. Their means of livelihood traditionally have been agriculture, animal husbandry, forest resources, handicrafts, trade and religious institutions. Gradually, modernization, tourism, education, and government jobs have diversified their economy. It is observed in the Singh (2013)'s study that Monpa's livelihoods are intricately tied to their ecocultural knowledge and sustainable use of natural resources. The Monpas' livelihood pattern is a mix of traditional subsistence and the newfound opportunities of the market.

2.1 Ecological base of Monpa livelihoods: The Monpa tribe in Tawang district is greatly affected by the mountainous topography, climate and limited accessible land for livelihood activities. Long winters combined with heavy snow and short growing seasons have led to the specialization of livelihoods in the region. Pandey *et al.*, (2020) observed that Monpas have broad indigenous knowledge which helps them to use local natural resources in an effective manner and sustain the ecological balance. The livelihoods of the household are based on agriculture, livestock keeping and harvesting forest products. The traditional economic system is marked by a close linkage with the environment; this links the economy to the fragile Himalayan environment and ensures its sustainability.

2.2 Agriculture Practices are the main source of livelihood: The agriculture sector is still one of the major livelihoods of the Monpa tribes. Subsistence agriculture is the dominant form of agriculture in most households, with their crops grown mainly for domestic use with the surplus being sold in the local markets. Agriculture production is very limited because of the harsh climatic conditions and only few hardy crops can survive in such cold climate.

Barley, buckwheat, maize, millet, potatoes, peas, mustard and different vegetables are the main crops grown by the Monpa community, according to Mandal (2014). They are well adapted to the high altitude conditions and are the main components of household food security. The farming techniques generally follow traditional methods which utilize family labour, traditional knowledge and locally available resources.

The Monpas practise advanced agricultural technology, such as soil protection, rotation of crops, the use of organic manures and water management. These practices are not just good for agricultural productivity but also for reducing the environmental impact. Singh (2013) noted that agriculture practices of the Monpas are related to their cultural beliefs and community institution, which helps them to manage the resources sustainably.

2.3 Horticulture and Vegetable Farming:

Horticulture has become a significant part of the Monpa livelihoods. Fruits and vegetables have grown in significant amounts in recent decades because of the favourable climatic conditions. Cultivation of potato, cabbage, cauliflower, radish, carrots, beans and leafy vegetables is widespread in households, fields and gardens.

The farming households are now able to get extra income due to rising demand for fresh vegetables for local markets, military bases, and touristic centres. Trees for vegetables not only help in the generation of cash income for the household but also supplement the traditional subsistence farming, making them a significant way of generating cash income for the household (Mandal 2014). Governmental promotion has also increased livelihood diversification among the Monpas with the promotion of horticulture.

2.4 Yak Rearing and Pastoralism: Yak rearing is one of the most unique and cultural livelihood activities of the Monpa Tribe. In high altitudes such as Tawang, there are pastoral communities, called Brokpas, who are specialized in managing yak herds. Yaks give milk, butter, cheese, meat, transportation, income and manure, and are indispensable to the local economy.

Pandey *et al.* (2020) have recently reported that rearing yaks is an important livelihood activity for the many Monpa households, especially in inaccessible areas of the mountains. Transhumance is practised by the Brokpas, and is a system of migration where livestock are shifted from their summering grounds to their wintering grounds depending on climatic conditions. This traditional management system allows efficient utilization of grazing resources, while maintaining ecological balance.

Yaks are not just used for domestic consumption. Butter, cheese, wool and meat are produced and sold locally using the name Yak and are an important source of family income. Yet, climate change, decreasing availability of grazing areas, disease epidemics, and decreasing interest among younger generations in the use of yaks are challenges to the sustainability of yak-based livelihoods.

2.5 Farming for food animals and dairy products:

Apart from yaks, Monpa homes raise cattle, sheep,

goats, pigs, poultry and horses. Livestock provides several services, such as food production, transportation, agricultural services, and income. Dairy production is important especially as milk and milk products are vital ingredients of the traditional Monpa diet.

Indigenous livestock management practices are rooted in centuries of experience in livestock breeding, feeding, care and utilization of pastures (Pandey *et al.*, 2020). Domestically, dairy products like butter, cheese and yogurt are eaten, and sold in local markets. Livestock therefore plays a huge role in household economic security and nutritional well-being.

2.6 Forest-Based Livelihoods: Monpa people have been supported by forest resources for their livelihoods through collection of fuel wood, fodder, medicinal plants, mushrooms, wild fruits, bamboo and other NTFPs. Local communities have a wealth of ecological knowledge related to sustainable forest use. Singh (2013) highlighted that Monpas have deep cultural and spiritual ties to forests and the landscape, especially when it comes to their culture. Forest resources are used for subsistence, traditional health care and local economies. The collection and use of forest products offer supplementary income earning opportunities, especially when agriculture is not in full swing.

2.7 Handicrafts and Cottage industries: The Monpa tribe is important for its handicrafts as a supplementary source of livelihood. Weaving, carpet making, wood carving, bamboo handicraft, bask weaving and religious arts are popular crafts. One of the most important tasks of women in Monpa is the weaving of woolen clothes, carpets, bags and traditional clothes.

Deb (2014) mentioned that traditional industries play a key role in the life of Monpa as a very basic element in the economy. Handicrafts not only provide livelihood but also safeguard the traditional culture and traditional skills. Tourists' demand for traditional handicrafts has now provided new market opportunities to the local artisans.

2.8 Trade and Market Activities and their related subjects: The Monpas had been actively trading with neighbouring areas such as Tibet and Bhutan in the past. The traditional trade route provided for the exchange of agricultural products, livestock, wool, salt and handicrafts. Despite the changes in the cross-border trade, activities in the local markets continue to play a role in households' livelihoods.

Tawang has weekly markets and commercial centers where the farmers, pastoralists and artisans sell their products. The growing economic linkage of the region's economy to the local economy has led to commercialization and income diversification. Mandal (2014) found that more participation in the market is

essential for improving the economic position of the households.

2.9 Attracting tourists as an emerging livelihood opportunity: The tourism sector is one of the rapidly growing livelihoods in Tawang district. The district is a popular tourist spot due to its natural beauty, Buddhist temples, cultural events, and historical sites. The well-known Tawang Monastery is a tourist attraction that is a significant economic source of the area.

Numerous Monpa households are currently involved in tourism-related activities like operating hotels, homestays, restaurants, transportation services, guiding services and handicraft shops. The growth of the tourist industry has provided jobs for youths and has lessened reliance on traditional subsistence activities. However, sustainable tourism management is still much needed to preserve the cultural and environmental resources in the region.

2.10 Government Employment and Modern Occupations: The education and infrastructure improvements by the government have resulted in a number of Monpa families finding jobs in the government sector and making it a significant source of income. Career prospects can be found in education, healthcare, administration, defense services, banking and public sector organizations.

With the growth of educational facilities, younger generations are able to have a career in professions other than farm work or herding. Consequently, the livelihood diversification has greatly enhanced in the last few decades. It is observed in the study of Mandal (2014) point out that government employment offers stability of income and has played a key role in enhancing the living standard of Monpa households.

2.11 Monasteries' role in local livelihoods: In addition to religious functions, Buddhist monasteries also have a significant economic function in Monpa society. Employments for workers, artisans and craftsmen are generated in the monastery where the religious activity is carried out. They also are a draw for pilgrims and tourists and provide economic benefits to nearby communities.

Moreover, monasteries serve to the social welfare and cultural heritage, as well as to the communities' development. The Monpa socio-cultural organization is related to the relationship between religion and livelihood. Monpas rely on spiritual institutions as one of the key social capital resources that helps ensure livelihood security and community resilience, according to Singh (2013).

2.12 Difficulties in sustaining traditional livelihoods: Although they are resilient, there are several challenges

with traditional Monpa livelihood systems. Agricultural productivity, grazing habits and water availability have been impacted by climate change. Pastureland is becoming scarce and more reliance on market goods has changed traditional consumption patterns, which endangers the rearing of yaks.

A significant worry highlighted by Pandey *et al.* (2020) was a shift in interest for the older generations to occupations more suited to the younger generation. Migration, modernization and new aspirations have led to a decline in agriculture and pastoralism. Furthermore, household income is subject to instability caused by limited access to the market, transportation barriers and market volatility.

Thus, the livelihood activities of the Monpa tribe community in the district of Tawang are a dynamic relationship between traditional knowledge, ecological adaptability and current economic opportunities. Economy of the community is maintained by Agriculture, Horticulture, Yak rearing, Management of livestock, Utilization of forest resources, Handicrafts, Trade, Tourism and Government employment. Singh (2013) has stated that Monpa livelihood is deeply rooted in ecocultural tradition which encourages sustainable use of the resources and community resilience. Modernization has introduced new avenues for livelihoods, but the traditional livelihoods must also be preserved in order to ensure cultural identity, environmental sustainability and economic security for the Monpa people in the longer term.

3. EFFECT OF MODERNIZATION ON FOOD HABITS AND LIVELIHOOD

Traditional food habits and livelihood pattern of Monpa tribe has been greatly affected by modernization. Younger generations have become more exposed to the market, resulting in the introduction of packaged foods, products and new consumption habits. Adoption of market-oriented activity and service sector jobs have started to replace traditional agriculture. The development of tourism and urbanization has also contributed to changes in jobs within the community. However, the authors Chakravarty Singh & Sharma (2020) have noted that socio-economic changes are decreasing indigenous livelihood dependency among the Monpas. Traditional agriculture and forest-based activities are also impacted by climate change, deforestation and altered land-use. However, their traditional ecological and food knowledge and culture is still being maintained by many Monpa families in a cultural way and by religion.

CHALLENGES FOR LIVELIHOOD OF MONPA TRIBE

1. Breaking of traditional food habits: Younger generations have been decreasing their reliance on traditional Monpa foods, like barley, millet, buckwheat,

fermented foods and foods based around the yak due to the increasing use of packaged and market-based foods (Mandal, 2014).

2. Agricultural problems due to Climate change:

There are negative impacts of irregular rainfall, snowfall variation and increased temperature on terrace farming, productivity of crops and rearing of yaks in high altitude regions (Singh *et al.*, 2020).

3. Indigenous Knowledge is lost: As a result of modernization and change in lifestyle, traditional ecological knowledge concerning medicinal plants, food preservation and forest resource management is now slowly disappearing (Namsa *et al.*, 2011).

4. The loss of forest cover and biodiversity: Forest ecosystem, wildlife and wild edible plants form the backbone for Monpa food system and livelihood activities are under threat, due to increased developmental activities and exploitation of the resources (Singh *et al.*, 2020).

5. Migration and Occupational Change: As a consequence, the migration of younger generation towards the cities for education and employment activities, which resulted in reduced participation of them in agriculture, pastoralism and handicraft production (Chakravarty Singh & Sharma, 2020).

6. Socio-cultural factors: Traditional Monpa self-sufficient livelihood system is undermined by market penetration and tourism which increased dependence on commercial goods and cash economy among the Monpas (Mandal, 2014).

7. Threats to Cultural Identity: Traditional culture, food habits, dress code, language and customs are under threat due to westernisation and modernisation, which threatens Monpa cultural identity (Namsa *et al.*, 2011).

SUGGESTIONS TO IMPROVE LIVELIHOOD OF MONPA TRIBE

1. Indigenous Food Cultures are maintained: Documentation and promotion of traditional Monpa foods, recipes and food preservation techniques should be done through cultural festivals and educational programmes, as well as academic research (Mandal, 2014).

2. Promotion of Sustainable Agriculture: Government support and training should be promoted to encourage organic farming, terrace farming, and traditional farming practices to ensure food security and environmental sustainability (Singh *et al.*, 2020).

3. To ensure the sustainability of Indigenous Knowledge: The preservation of indigenous ecological knowledge on medicinal plants, biodiversity conservation, forest management, etc. should be done

via community based activities and by sharing knowledge among diverse generations (Namsa *et al.*, 2011).

4. Development of Community-Based Tourism:

Development of Community Based Tourism is also considered as the most important factor. A sustainable tourism model based on participation of the locals should be encouraged to generate income and ensure the protection of the Monpa culture and the fragile ecological system of the Himalayas (Chakravarty Singh & Sharma, 2020).

5. Handicrafts and Cottage Industries are given support:

The government and NGO's should financially assist the Monpa handicraft and weaving industry, provide marketing facilities and skill development programmes to them (Mandal, 2014).

6. Youth and their involvement in traditional occupations:

To preserve the continuity of tribal culture, awareness programmes need to be promoted to motivate young people to pursue agriculture, yaks rearing, handicrafts and cultural preservation (Singh *et al.*, 2020).

7. Environmental and Forest Conservation:

Traditional ecological practices of Monpa people should be incorporated into forest protection programmes and policies for biodiversity conservation to ensure sustainable natural resource management (Namsa *et al.*, 2011).

8. Enhance the educational and healthcare facilities:

Educational and healthcare facilities should be improved in remote Monpa villages while considering the culture and indigenous practices of the villages (Chakravarty Singh & Sharma, 2020).

CONCLUSION

The food habits and livelihood system of the Monpa tribe is a unique amalgamation of indigenous knowledge, ecological adaptation and the cultural tradition. They make use of sustainable interaction with the Himalayan environment through their dietary habits, agricultural practices, animal husbandry practices, handicrafts and forest-based activities for livelihood. Despite the changes in lifestyle brought about by modernization and socio-economic transformation, the Monpas have been able to maintain numerous attributes of their cultural identity through their religious practice, festivals and community engagement. Preserving the indigenous food systems and livelihood, is vital to preserve cultural diversity, ecological sustainability and tribal development in Arunachal Pradesh. Thus, policy support, academic research and community involvement are required to preserve the rich cultural heritage of Monpa tribe.

REFERENCES

1. Bhasin, V. (2005). Way of life among the high altitude Monpa of Arunachal Pradesh. *Journal of Human Ecology*, 17(3), 185–194.
2. Chakravarty Singh, N., & Sharma, S. (2020). Resource availability and utilization: A perspective on the Monpa tribe of Dirang Circle, Arunachal Pradesh. *International Journal of Recent Advances in Multidisciplinary Topics*, 3(6), 1–7. <https://www.ijramt.com/admin/upload/07%20Nitu%20Chakravarty%20Singh%201-7.pdf>
3. Chaudhuri, B. (1990). *Tribal transformation in India*. Inter-India Publications.
4. Deb, D., & Malhotra, K. C. (2001). Conservation ethos in local traditions: The West Bengal heritage. *Indian Journal of Traditional Knowledge*, 1(1), 11–17.
5. Deb, S. (2014). Study of Monpa and other tribes of Tawang and West Kameng districts, Arunachal Pradesh. *Journal of Global Economy*, 9(4), 267–276. <https://doi.org/10.1956/jge.v9i4.317>
6. Elwin, V. (1959). *A philosophy for NEFA*. North-East Frontier Agency Administration.
7. Mandal, R. K. (2012). Proximate relationship of indigenous communities with natural common property resources in Arunachal Pradesh of India: An empirical study of Tawang District. *Research Journal of Environmental Sciences*, 6(1), 14–25. <https://doi.org/10.3923/rjes.2012.14.25>
8. Mandal, R. K. (2013). Employment generation and gender dimension in the common property resource-based activities of the Monpa tribal women in Tawang District of Arunachal Pradesh, India. *Research Journal of Forestry*, 7(1), 16–25. <https://doi.org/10.3923/rjf.2013.16.25>
9. Mandal, R. K. (2014a). Role of natural property resources (NPRs) in the lives of rural tribal people in Arunachal Pradesh: A case study. *Research & Reviews: Journal of Food Science and Technology*, 12(3). <https://doi.org/10.37591/rjofst.v12i3.3884>
10. Mandal, R. K. (2014b). Use of common property resources in rural households of Arunachal Pradesh: A case study. *Research Journal of Forestry*, 8(1), 1–15.
11. Namsa, N. D., Mandal, M., Tangjang, S., & Mandal, S. C. (2011). Ethnobotany of the Monpa ethnic group at Arunachal Pradesh, India. *Journal of Ethnobiology and Ethnomedicine*, 7, Article 31. <https://doi.org/10.1186/1746-4269-7-31>
12. Pandey, N. K., Somvanshi, S. P., Kumar, S., Prakash, B., & Singh, C. K. (2020). Yak rearing practices by (Brokpa) pastoralists of Tawang, Arunachal Pradesh. *Journal of Entomology and Zoology Studies*, 8(3), 1067–1071.
13. Pandey, N. K., Somvanshi, S. P., Prakash, O., & Kumar, S. (2020). Indigenous knowledge of agriculture and animal husbandry practiced by Monpa tribes of Tawang, Arunachal Pradesh. *The Pharma Innovation Journal*, 9(4), 316–320.

14. Pegu, D., Borgohain, A., & Shyam, J. (2016). Yak rearing systems among the Brokpas of the Eastern Himalaya in Arunachal Pradesh. *Indian Journal of Animal Sciences*, 86(1), 247–251.
15. Singh, K. S. (Ed.). (1995). *People of India: Arunachal Pradesh* (Vol. XIII). Anthropological Survey of India.
16. Singh, R. K. (2013). Ecoculture and subsistence living of Monpa community in the Eastern Himalayas: An ethnoecological study in Arunachal Pradesh. *Indian Journal of Traditional Knowledge*, 12(3), 441–453.
17. Singh, R. K. & Pandey, C. B. (2020). Traditional ecological knowledge and community-based biodiversity conservation in Eastern Himalayas: Learning with Monpa tribe. *Indian Journal of Extension Education*, 47(1–2), 8–16. <https://epubs.icar.org.in/index.php/IJEE/article/view/144658>
18. Singh, R. K., Singh, A., & Sureja, A. K. (2007). Traditional foods of Monpa tribe of West Kameng, Arunachal Pradesh. *Indian Journal of Traditional Knowledge*, 6(1), 25–36.