EQUITABLE FOOD TERRITORIES IN TAMIL NADU: PATAMIL

PATAMIL SECOND YEAR REPORT

Submitted by

DR. S. MANJUBARKAVI,

Post Doctoral Fellow, PATAMIL

Under the Mentors of

Prof. S. SUMATHI

Adjunct Professor, Department of Anthropology

University of Madras, Chepauk, Chennai – 05

Introduction

Tribal food patterns in India offer a fascinating glimpse into indigenous gastronomic traditions often distinct from mainstream Indian cuisine. Tribes across India traditionally rely on locally available ingredients such as roots, tubers, leafy greens, and fruits. These ingredients are often gathered from forests and surroundings, reflecting a deep connection to nature. Cooking methods among tribal communities habitually include roasting, boiling, steaming, and sometimes fermenting. Clay pots, bamboo tubes, and leaves are commonly used as cooking vessels. Food holds significant cultural importance among Malayali tribal communities, often playing a role in rituals, ceremonies, and social gatherings. Traditional food preparation and preservation knowledge is passed down through generations orally. Tribal diets can vary widely depending on the region and community. Malayali tribals are predominantly vegetarian, relying on forest produce and cultivated crops, such as millets, paddy, horse gram, vegetables, and public distribution system (PDS) commodities rice, oil, dhal, and sugar. However, in recent decades, dietary habits among tribal communities have been influenced by modernization, market integration, and lifestyle changes. This has led to shifts in food preferences and availability of processed foods, impacting traditional food patterns.

Traditionally Malayali diets are characterized by high dietary fiber, low levels of saturated fats, and a diverse range of nutrients. This contributes to their overall health and well-being, although access to nutritious food can vary among tribal groups. Rapid socio-economic changes, urbanization, and environmental degradation challenge preserving traditional food patterns among tribal communities. Efforts to sustain traditional knowledge and promote sustainable food practices are increasingly important. Overall, Malayali tribal food patterns in Jawadhu Hills showcase resilience, adaptability, and a deep-rooted connection to local ecosystems and cultural heritage. They offer valuable insights into sustainable food practices and the importance of biodiversity in food security. The diet practices of the tribal communities in the Jawadhu Hills of Tamil Nadu are closely tied to their traditional knowledge, local resources, and cultural practices. Here are some key aspects of their diet:

Millets such as samai (little millet) ragi (finger millet), kambu (pearl millet), thinai (foxtail millet), and minor millets are staple foods for Malayali tribal communities in the Jawadhu region. These grains are drought-resistant and well-suited to the hilly terrain, providing essential carbohydrates and nutrients. Alongside millets, pulses and legumes such as lentils, chickpeas, and field beans are important sources of protein in the tribal diet. These crops are often cultivated in small plots within or near their settlements.

Some of the Malayali tribal communities keep domesticated animals such as goats and cows for dairy products like milk, ghee (clarified butter), and yogurt. These dairy products are used in cooking and also form a part of ceremonial and festive meals. The majority of households are farming pigs for meat purposes. Consuming spork as part of their diet. Many herbs and medicinal plants found in the forests of the Jawadhu Hills are also incorporated into the diet of tribal communities. These plants are believed to have medicinal properties and are used both for their nutritional value and as remedies for various ailments. Food plays a significant role in the cultural and social life of tribal communities in the Jawadhu Hills. Meals are often communal events, and traditional foods are served during festivals, ceremonies, and rituals, reinforcing cultural identity and social cohesion.

In recent years, socio-economic changes, environmental degradation, and access to modern amenities have influenced the dietary habits of tribal communities in the Jawadhu Hills. Overall, the diet practices of tribal communities in the Jawadhu Hills reflect a deep connection to their natural environment, a reliance on locally available resources, and a rich culinary tradition that has sustained them for generations. Efforts to preserve traditional knowledge, promote sustainable agricultural practices, and address nutritional challenges are crucial for the well-being of these communities.

Theoretical Approaches

- Structuralism examines how food and eating practices reflect underlying structures of society and culture. Claude Lévi-Strauss's work on the raw and the cooked is a notable example.
- Symbolic Anthropology focuses on the symbolic meanings of food and how these symbols are used to communicate cultural values and social norms.
- Political economy analyzes the economic and power dynamics involved in food production, distribution, and consumption.

- Material Culture studies the physical aspects of food, including tools, technologies, and artifacts related to food preparation and consumption.

Food anthropology provides a rich and nuanced understanding of how food is intertwined with all aspects of human life. By examining the cultural, social, economic, and political dimensions of food, anthropologists can shed light on broader human behaviors and societal changes. This field not only helps us appreciate the diversity of food practices around the world but also offers insights into addressing contemporary challenges related to food security, and sustainability. The Malayali tribes of Tamil Nadu, primarily residing in the hill regions, have a rich cultural heritage that integrates millets into their daily life and religious ceremonies. Millets play a crucial role in their rituals, symbolizing fertility, prosperity, and sustenance.

Methodologies

- Ethnography approaches in-depth, immersive research involving participant observation and interviews to understand food practices within a cultural context.
- Historical analysis examining historical texts, records, and artifacts to trace the evolution of food practices over time.
- Interdisciplinary approaches Integrating insights from geography, sociology, economics, history, and other disciplines to provide a holistic understanding of food-related issues.

The Malayali tribal people in Jawadhu Hills follow the following cooking habits.
Source of Fuel

Firewood cooking is a traditional and widespread method used by Malayali tribal communities. This method relies on burning firewood as the primary fuel source for cooking food. Firewood obtained from local forests or surroundings serves as the primary fuel for cooking. Also, they collect firewood from nearby areas, utilizing fallen branches, deadwood, or sustainable harvesting practices to ensure a steady supply.

Malayali tribal women cooking open firewood

Firewood is often readily available in rural and forested areas, making it a practical and sustainable fuel source for cooking and constructing simple stoves or hearths from clay or mud fueled by firewood. These stoves may have openings or chimneys for ventilation and heat control. They are arranging three large stones in a triangle formation to support cooking vessels above the fire, allowing for stable and efficient heat distribution. Traditional cooking vessels used in firewood cooking include clay pots, metal pots and pans, cast iron skillets, and woven baskets. These vessels are chosen for their durability, heat retention properties, and suitability for open-fire cooking. Cooking over firewood imparts a distinct smoky flavor to food, enhancing its taste and aroma. Firewood cooking techniques are deeply rooted in cultural traditions and practices, passed down through generations within tribal communities. Constantly using unsustainable harvesting of firewood can lead to deforestation and environmental degradation, affecting local ecosystems and biodiversity. There is also an

impact on cooking indoors with firewood can contribute to indoor air pollution, which poses health risks, especially for women and children who spend significant time near the cooking area. Firewood cooking remains a vital aspect of daily life and cultural identity for Malayali tribal communities.

Rice cooking

Cooking indoors with firewood and making rice

Horse gram Sambar

Horse gram (Macrotyloma uniflorum) locally known as kollu is a type of legume commonly used in cooking among Malayali tribal communities in Jawadhu hills, Tamil Nadu, Horse gram is known for its nutritional benefits and is often used in traditional dishes for its hearty flavor and high protein content. It is typically cooked in various forms, including soups, stews, curries, and dry preparations. Horse gram is often boiled with water and seasoned with spices like turmeric, cumin, coriander, and sometimes with garlic and ginger. This preparation results in a thick, nutritious soup or stew, often served with rice or millet. In curry preparations, horse gram may be cooked with vegetables such as potatoes, carrots, or leafy greens. The spices and seasonings used vary depending on the tribe and local culinary traditions. Horse gram can also be roasted or sautéed with spices and herbs to make dry side dishes or snacks. It is sometimes ground into flour and used to make pancakes. Horse gram is valued for its high protein content, dietary fiber, and rich micronutrient profile. It is known to have medicinal properties in traditional systems of medicine and is believed to be beneficial for digestion, weight loss, and reducing cholesterol levels.

Own farm horse gram sambar with drumstick

Horse gram cultivation is relatively sustainable as it requires minimal water and grows well in dry, arid conditions. In Jawadhu hills the major crop rotation after millet is horse gram. It is often cultivated in small plots or collected from wild or semi-wild sources, contributing to local food security and livelihoods. Overall, horse gram cooking among tribal communities in Tamil Nadu exemplifies the intersection of traditional knowledge, nutritional wisdom, and cultural practices, highlighting the diversity and richness of indigenous foodways in the region.

Both rice and horse gram play a stable diet among the Malayali tribe. This could be the primary choice for breakfast, lunch, and sometimes dinner. Other common dishes in their diet include tamarind rice, chappati, spinach with rice, ragi with maize kool, idli with thuvarai, and horse gram with vegetable sambar part of their diet. In addition to rice and horse gram, the Malayali tribe includes a variety of millets in their diet, which are consumed twice a week. These millets include Finger millet, Little millet, Pearl millet, and Italian or foxtail millet.

Ragi Koozh

Ragi koozh with maize consumed for breakfast

Finger millet, also known as ragi (Eleusine coracana), locally known as ragi which is a staple food among Malayali tribal communities Jawadhu hills. It is highly valued for its nutritional benefits and is used in various traditional dishes like koozh, ragi ball, and ragi roti. Porridge (Ragi Koozh) a popular way of consuming finger millet among Malayali tribals is by making a thick porridge known as ragi kanji. Finger millet flour is mixed with water or milk, boiled, and seasoned with salt. Sometimes, it is sweetened with jaggery (unrefined cane sugar) for added flavor.

Another famous dishes is ragi roti/dosa. Finger millet flour is also used to make unleavened flatbreads (roti) or fermented crepes (dosa). The flour is mixed with water to form a dough, which is then rolled out and cooked on a hot tava. These flatbreads are nutritious and often served with curries or chutneys. Finger millet is fermented to make dishes like idlis (steamed cakes) or dosas (crepes). Fermentation enhances the nutritional value of finger millet by increasing the bioavailability of nutrients. Sometimes used to make traditional sweets and desserts. For example, ragi laddoos (sweet balls) are made by mixing finger millet flour with jaggery, ghee (clarified butter), and penuts. Finger millet is known for its high nutritional content, including calcium, iron, dietary fiber, and essential amino acids. It is gluten-free and easily digestible, making it suitable for people with dietary restrictions or sensitivities. Finger millet holds cultural significance among Malayali tribal communities in Tamil Nadu, where it is not only a staple food but also part of cultural rituals and celebrations. It is often offered during festivals and religious ceremonies as a symbol of prosperity and well-being. Finger millet cultivation is sustainable as it requires less water compared to other cereal crops. It grows well in semi-arid and hilly regions, making it suitable for rain-fed agriculture. The cooking and consumption of finger millet are based on traditional knowledge passed down through generations. Tribals have developed diverse recipes and cooking methods that maximize the nutritional benefits of finger millet while catering to local tastes and preferences.

Overall, finger millet cooking among Malayali tribals in Jawadhu hills exemplifies the intersection of cultural heritage, nutritional wisdom, and sustainable agricultural practices. It underscores the importance of indigenous foodways in promoting food security, health, and cultural identity within tribal communities.

Samai / Little millet

One of the most common varieties of millet is little millet which is consumed by Malayali tribal communities in Jawadhu hills. Little millet, also known as "samai" in Tamil, is a staple grain among the Malayali tribal communities in Jawadhu hills. The dehulling process, which involves removing the outer husk of the grain, is crucial for making the millet edible and usable in various dishes. The dehulling process traditionally practiced by the tribal communities is labor-intensive and reflects their ingenuity and deep understanding of the crop.

The process of harvesting little millet is harvested when the grains are fully mature and the stalks turn golden brown. The harvested millet is spread out in thin layers on mats or drying yards and left to dry under the sun for several days. Proper drying is essential to reduce moisture content and facilitate easier dehulling. The dried millet stalks are beaten against a hard surface or trampled underfoot to separate the grains from the stalks. This can also be done by placing the stalks in a sack and beating them with sticks. The threshed grain is winnowed to remove chaff and impurities. This is typically done by tossing the grain into the air and letting the wind carry away the lighter chaff while the heavier grains fall back down. The winnowed millet grains are placed in a large wooden or stone mortar and pounded with a pestle. This helps in loosening and removing the outer husk. After pounding, the grains are sieved to separate the husks from the dehulled millet. Sieves with varying mesh sizes may be used to ensure thorough separation. The dehulled millet is often cleaned further by removing any remaining husk and fine particles. This can be done manually or with the help of a winnowing basket. The cleaned millet is sorted to remove any broken or damaged grains, ensuring a high-quality final product.

With the intervention of Non-Governmental Organizations (NGOs), modern dehulling processes are also familiar among the Malayali tribal communities. Mechanized threshing or modern threshers are used to separate the grains from the stalks more efficiently, reducing the labor and time required for this step. Specialized dehulling machines are used to remove the husk from the millet grains mechanically. These machines use friction and abrasion to strip the husk, followed by aspiration to separate the husk from the grain. Mechanical dehulling is faster and can process larger quantities of millet compared to traditional methods. It also results in more uniform dehulling with less grain breakage. Post-dehulling, the millet grains are cleaned using mechanical cleaners that remove any remaining husk, dust, and other

impurities. Grading machines sort the dehulled millet into different sizes and qualities, ensuring a consistent and high-quality product. Dehulling adds value to little millet, making it more marketable and increasing its economic worth.

The traditional dehulling process is labor-intensive and time-consuming, which can limit productivity. Introducing mechanized dehulling equipment and training tribal farmers to use these machines can enhance productivity and efficiency. However, access to such technology and initial costs can be barriers. Efforts to introduce modern dehulling methods should aim to complement and preserve traditional practices rather than replace them entirely. This can be achieved through community-driven initiatives that respect and incorporate traditional knowledge.

Land preparation for small millet

Last year harvested small millet

The dehulling of little millet among Malayali tribal communities in Jawadhu is a blend of traditional and modern practices. While traditional methods are deeply rooted in cultural practices and community life, the introduction of mechanized processes can enhance efficiency and economic benefits. Balancing these approaches can help preserve cultural heritage while improving productivity and market access for tribal farmers.

Millet Consumption

Millet consumption plays a significant role in the diet of tribal communities in Jawadhu Hills, contributing not only to their nutritional intake but also to their traditional rituals and cultural practices. Here's an in-depth look at millet consumption among these communities and its cultural significance:

- Finger Millet (Ragi): One of the most commonly consumed millets, known for its nutritional benefits.
- Foxtail Millet (Thinai): Traditionally the flour is used in various dishes.
- Little Millet (Samai): Often used as rice, uppma, porridges and traditional dishes.
- Pearl Millet (Bajra): Widely grown and consumed for its high protein content. Used as porridges
- Sorghum (Jowar): Another staple, appreciated for its versatility.

Nutritional Benefits

- High in Fiber: Aids in digestion and helps prevent constipation.
- Rich in Protein: Essential for muscle repair and growth.
- Gluten-Free: Suitable for those with gluten intolerance or celiac disease.
- Low Glycemic Index: Helps in managing blood sugar levels, beneficial for diabetics.
- Micronutrient-Rich: Contains essential vitamins and minerals such as iron, calcium, and magnesium.

Staples

- Rice: A primary staple, often consumed with various accompaniments.
- Millets: Such as samai (small millet), ragi (finger millet), jowar (sorghum), and bajra (pearl millet), which are traditional staples.
- Tubers: casava and wild tubers are also commonly consumed.
- Vegetables and Fruits: Malayali tribal communities often rely on both wild and cultivated vegetables like brinjal, lablab, ladies finger, drumstick, Greens like spinach and drumstick leaves are common.
- Wild Fruits: Jackfruit, mango, tamarind, and other forest fruits are integral to their diet.
- Pulses and Legumes: Horse gram, lentils, beans, and chickpeas are commonly used.
- Poultry and Livestock: Chickens, goats, and pigs are raised and consumed.
- Foraged Foods: whild Mushrooms are foraged during certain seasons.
- Honey: Collected from the forests and used both as a sweetener and medicinally.
- Simple Cooking Techniques: Boiling, roasting, and steaming are predominant. Frying is less common due to limited access to oil.
- Fermentation: Fermented foods, such as idli and dosa made from rice and lentil batter, are part of the diet.
- Use of Spices and Herbs: Locally available spices and herbs are used, but the overall spiciness of food is generally moderate.

Seasonal Variations

- Monsoon: Increased reliance on foraged greens, mushrooms, and tubers.
- Post-Harvest: Greater availability of cereals, pulses, and surplus vegetables.
- Dry Seasons: Dependence on stored grains and tubers, and less variety in fresh vegetables.

Socio-Economic Influences

- Public Distribution System (PDS) Subsidized rice, dhal, sugar, and oil provided through PDS form a significant part of their diet.

- Economic Constraints: Limited income often restricts the variety and quality of food that can be purchased.

Nutritional Challenges

- Malnutrition: Despite the diversity in their traditional diet, malnutrition remains a concern due to inadequate quantities and limited access to diverse food groups.
- Micronutrient Deficiencies: Deficiencies in vitamins and minerals, particularly iron, vitamin A, and iodine, are prevalent. For example, Thalassemia disease is common among the Malayali tribe.
- Transitioning Diets: Increasing exposure to non-traditional and processed foods impacts traditional dietary practices.

Traditional Gastronomic Uses

- Staple Foods: Millets are often ground into flour and used to make flatbreads (rotis), and porridges.
- Beverages: Ragi malt, a popular drink, is made from finger millet flour mixed with water or milk, often sweetened with jaggery.
- Snacks: Various traditional snacks and sweets are made using millet flour.

Contribution to Traditional Rituals

- Harvest Festivals: Millets are integral to Malayali tribal harvest festivals, where they are used in rituals and feasts. These festivals often include offerings of millet-based dishes to deities.
- Pongal: A prominent harvest festival in Tamil Nadu, where millets like sami and thinai are used in preparing traditional dishes.
- Religious Ceremonies: Millets are used in various religious ceremonies and rituals. They are often offered to gods and ancestors as a symbol of gratitude and sustenance.
- Aadi Perukku: Celebrated to honor water bodies, millet dishes are prepared and offered to deities.
- Life Cycle Events: Millets play a role in life cycle events such as births, weddings, and funerals.
- Marriage Rituals: In some communities, millet grains are used in rituals to symbolize fertility and prosperity.
- Birth ceremony: Millets are sometimes part of the feasts during naming ceremonies for newborns.

The use of millets in rituals helps preserve traditional agricultural practices and cultural heritage, ensuring that knowledge and customs are passed down through generations. Millets, being hardy crops that require minimal water and can thrive in poor soil conditions, symbolize sustainability and resilience, qualities valued in tribal cultures. Preparing and consuming millet-based dishes during festivals and rituals fosters

community bonding and reinforces social ties. The cultivation and use of millets are closely tied to the agricultural heritage of tribal communities, representing a connection to the land and traditional farming practices. Little millet, known as "samai" in Tamil, is a highly valued grain among the Malayali tribal communities in Jawadhu hills. Its pork consumption is a traditional practice highlighting these communities' rich culinary heritage and cultural significance of millet-based diets. Here's an overview of how little millet is used with pork and its cultural implications.

Little millet can be boiled like rice, ground into flour for flatbreads or porridge, or used in fermented dishes. A popular way to consume little millet is as boiled rice and porridge, often served with accompaniments. Pork is usually cooked with local spices and herbs, creating flavorful and hearty dishes. Pork curry or stew is commonly paired with a little millet on Ugadi. The millet can be served as a simple cooked grain, similar to rice, or as part of a more complex dish. The combination of little millet and pork is often reserved for special occasions, festivals, and communal gatherings. This practice underscores the importance of both ingredients in tribal culinary traditions.

Millets hold cultural significance, making them a key component in various traditional practices and ceremonies:

In the Malayali tribal communities, after the harvest, there is a significant religious offering known as "*Pacha Vaikurathu*." This offering involves preparing dishes using samai (little millet) and thinai (foxtail millet) flour, which are sweetened with sugar or jaggery. These dishes are offered to the clan deities, particularly *Kanniyamman*, and *Kaliyamman* as a symbol of gratitude and reverence. Additionally, hen sacrifices are made as part of the ritual, further emphasizing the community's devotion and thankfulness for a bountiful harvest.

In the month of Adi (July), a communal gathering is observed on Adi month Fridays, where *Ragi Koozh* is shared among community members. The worship takes place in *Manthaiveli,* a general gathering place, and involves deities such as *Maariyaayi, Kaaliyaayi, Amman, Ankalamman, Paderiaman, Saamundeeswari, Kannimaru, Minnadiyyan, Aynaaru, Vettaikaruppu, and Ella Karuppu*.

Life events such as weddings and births, and deaths often include the preparation of little millet and pork dishes, signifying prosperity and abundance.

Among the Malayali tribes in the Jawadhu hills, millet feasts hold a central role in marriage celebrations. Little millets, a staple in their diet, feature prominently in the traditional dishes served during the feast. The marriage ceremony takes place at the village heads' *ooran, Naataan, and moopan*. The wedding feast, known as ***Kalyana Virundhu***, includes ***Samai arisi Sapadu*** (a meal made from little millets) and ***pork curry***, highlighting the significance of millets in their tradition. The feast is an essential part of the wedding, reflecting the tribe's cultural heritage and community values.

The combination of samai (little millet) with a special rasam made from omam (carom seeds), sukku (dry ginger), thipili (long pepper), perungayam (asafoetida), and pepper is traditionally used for postpartum care. Consuming this meal once a day, typically for breakfast, helps with recovery and provides essential nutrients during the postpartum period.

After a death, funerary rites are observed on the 7th, 9th, or 11th day. This ceremony, known as kariyam, often involves sacrifices of chicken and pork. A meal, called samai sapadu, along with *palagaram* (a type of snack or sweet) is served as part of the padayal, which is a ritual offering or feast to honor and remember the deceased. This practice is significant for paying respects and providing nourishment to those who partake in the rites.

List of Questions

1. Cultural and identity-related aspects of millets.

   Overall, millets are more than just a staple food; they are deeply intertwined with cultural practices, community identity, and traditional knowledge.

2. What links exist between the culture of millet, its consumption, and the socio-cultural structures of these tribal populations?

   The socio-cultural fabric of the Malayali tribal community is intricately woven with the cultivation, consumption, and symbolism associated with millet. Millet, a hardy and nutritious cereal, has long been a staple food for these indigenous communities, shaping their culinary traditions, agricultural practices, and even their collective identity. Millet cultivation in Jawadhu regions is often a reflection of the unique environmental conditions and traditional farming methods employed by these populations. The crop's adaptability to harsh, arid climates and short growing seasons has made it a reliable source of sustenance for communities residing in challenging terrains. Moreover, the cultivation of millet is not merely an economic activity, but a cultural practice that is deeply rooted in the social structures and belief systems of these tribes.

3. Do millets form part of ritual ceremonies (christenings, weddings, funerals, etc.),
   Yes. The samai (little millet) feast plays a significant role.

4. How are they integrated into the celebrations that mark the community's life?
   Millets are the traditional stable integrated into the life cycle events.

5. Similarly, one of Maeva and Noémie's conclusions was their economic value as a 'refuge' good, with millets providing a sort of food and financial guarantee in the event of economic difficulties.
   Indeed. Approximately 100 kg of millets are preserved in zoot bags. when money is needed for family-related events like weddings and home construction, or occasionally for necessities like food, education, and agriculture. Millets are retained to raise the price from over Rs. 40 to Rs. 50.

6. How is this security experienced and organized by tribal families?
   Decision-making by the head of the family, who decides to take the responsibility of millet selling and savings.

7. Finally, we would like very detailed dietary surveys to be carried out to gain a better understanding of (i) the place of millets in daily life.
   My field visits have provided valuable insights into the dietary habits of these communities. The reliance on rice as a staple diet, with millets consumed less frequently, highlights how migration and availability impact their food practices. The migration to Karnataka for six months could be influencing their access to and consumption of millet.

8. (ii) of any tension between a 'traditional' and a 'modern' diet that is more geared towards rice and wheat. In particular, how do young farmers and their children perceive millet?
   Firstly, there is no tension between traditional and modern diets. When the Public distributive system (PDS) introduced rice it was easy to cook comparatively millet dehulling process needed more time-consuming and handmade grinding. This process is difficult for tribal women. This is a causes rice become stable and millets become weekly once or twice.
   Secondly, the younger generation, accustomed to rice, idli, dosa, and chapati, tends to prefer these foods and even junk food over millet. The elders' efforts to introduce millet occasionally reflect an attempt to maintain traditional food practices amidst changing preferences.

From a methodological point of view, while your state of the art is quite convincing, it is essentially at a global level.

9. Could you give us details of your interview guides and use extracts and quotations in your analyses?

   Attached as an attachment.

10. Similarly, what interview analysis techniques did you use (sphinx, lexical analysis, manual, qualitative, quantitative, etc.)?

    Methodologically, I am using a Qualitative approach. In the analysis part software like R qualitative, MAXQDA any one of the software.

11. How representative were your samples (we're thinking about the 60 interviews conducted) and could you describe the chosen households?

    The snowball sampling method was used. 60 interviews were conducted and FGD and key informants were interviewed and participated in observation on farm visits

12. Do the results of your focus groups and participant observation reinforce your conclusions?

    My empirical observation will reveal the ground reality and the way of life of the tribal community.

13. We are particularly interested in farm no. 3 (Anamalai) and its village (Kanamalai) insofar as 130 of the 150 families migrate from December to April. How does millet cultivation on the terraces set up on the steep slopes punctuate the life of the village community?

    The migration is an alternative livelihood for their survival. Nearly 6th month in a year they migrate. The community comes back to their hometown on the day of Ugadi (Telugu New Year) and After April they concentrate on land preparation and children's education. The land plowing is done by hand; hence the practice is not new to the tribal community on the terraces and slopes.

14. Conversely, during the dry season and migrations, who stays in the village and cultivates the irrigated land at the bottom of the valley?

    Those who have irrigation facilities will cultivate paddy on the bottom valley, the source of irrigation is a well with a motor, a small canal, and a lake. Only a limited number of people have these irrigation facilities. There are other farmers cent percentage depend on the rain. The farmers who do not have water facilities will migrate and dry season the land is fallow until the next season.

15. Finally, what links exist between the members of the families who live on migration and those who stay in the village (the elderly, essentially women, children who go to school, farmers who work the irrigated land, etc.)

    The entire family comes back home when the school reopens and there are very few who stay on migration. In a few cases, the youngster is left under the elder of the family, and the children below 5 stay with the mother either in migration or at home.

16. Similarly, we would like you to explore the links between the sacred dimension and millet (and, more generally, the work in the land) for farmer no. 4 (Rajamani), who is a farmer-priest. Generally speaking, this symbolic, even ritual and religious, question of millet is of great interest to us because it nourishes the cultural singularity of these tribal populations.

    The person significantly knows the importance of millet and its health benefits. He also cultivates millets for family consumption. He perceives that consuming millet is traditional for them.

    Rajamani lives in a joint family, his wife Rukku, his son Jayachandran 26 year old and doctor-law Shalini, grand son Dharsan, and his daughter Parameshwari. He has 3 acres of land in plain plot. He cultivates Samai, Ragi, Paddy, and Maize. Both irrigated and rain-fed land. He is not using any chemical fertilizer only farmyard manure is used. Since he has an irrigation facility. He cultivates paddy from November – February, Samai during June – October and Horegrame from October to December. These are the time period known as Vaikasi pattam, Karthikai pattam and Adi pattam. The entire cultivation of his farm is only for family subsistence. There is no marketing.

    He also cultivates cash crops B2 cotton and Gerkin from a Kallakurichi Rasi company.

17. Finally, Mani and Krishnamoorthy (farmers no. 1 and no. 2) are not to be overlooked, as we have invested a great deal in their farms. What explains the prosperity of Mani, who has just dug a gigantic agricultural pond on the lower slopes of his farm? Similarly, what are the links between Krishnamoorthy and the Dhan Foundation?

Krishnamoorthy belongs to a tribal community he is a staff from the Dhan Foundation. Mani ‘s wife is a member of the Farmer Group. Mani is also a member of the Temple maintenance group. There was a small kulam (pond) which is part of the temple. The renovation of the kulam (pond) is a significant development for the community, especially for the farmers who will benefit from it. The collaboration between the Dhan Foundation and Redington India Limited through their CSR initiative seems to be making a positive impact by improving the infrastructure and resources available to the local farmers.

17. We also have two other questions that you could also address: The importance of cash crops, particularly small pickles, seems to be increasing, to the detriment of other irrigated crops. Could you describe how this sector works (supply of plans, delivery of phytosanitary products and fertilizers, collection circuits, income, and the companies behind this expansion of cash crops).

Private companies are engaging with tribal farmers for the cultivation of gherkin seeds, providing them with necessary inputs such as fertilizers, pesticides, and advance payments. This type of arrangement can be beneficial for both parties, as it helps farmers access resources they may need while ensuring the companies have a reliable supply of gherkins. The following private limited companies are actively engaged.

1. Global Green Company is a prominent player in the food industry, focusing primarily on producing and distributing gherkins and other processed vegetables. Headquartered in India, it operates globally with a significant market presence in Europe and North America.
2. Reitzel India Private Limited, based in Kunigal, Karnataka, is a subsidiary of the Swiss-based Reitzel Group. Established in India in 2004, Reitzel India specializes in producing and exporting pickled vegetables such as gherkins, cornichons, jalapenos, peppers, and baby corn. These products are packaged in various formats, including jars, cans, pouches, and pails, catering to retail, food service, and quick-service restaurant markets globally
3. I.A.P. (Pvt) Ltd is a producer in India of processed gherkins in vinegar, packed in glass jars for supermarkets in Europe, the United States, and Australia under the brand name or label of the customer. In operation since 1999 it has developed into one of India's leading exporters of gherkins, with the expertise and know-how learned formerly in Uyttewaal's European operation.

In the hilly terrain and with the limited irrigation facilities, there are very limited crops is possible to cultivate. To cultivate Gherkin a farmer will get Rs. 25,000 – Rs. 50000 as income within 3 months. This gherkin cultivation is possible only for those who have irrigation. Gherkin cultivation sounds like a viable option for farmers with access to irrigation, offering a significant income within a short period. This could be a beneficial crop for those looking to maximize their earnings given the constraints of limited irrigation in hilly terrain.

18. We believe that French companies are behind this commercial chain. Could you verify this?

    There is a private company from Karnataka, India behind this. These companies export the Gherkins across Europe and the U.S.

19. While Maeva's work concludes that millet production has stagnated, she bases her conclusion solely on the operations carried out by the Dhan, which are essentially aimed at self-consumption.

    Due to changes in the climatic conditions, there is no timely rain. Cent percentage the millet cultivation depends on rain. The millet production has stagnated due to the

environmental issue, particularly climate change. The Dhan Foundation has done a needs assessment from a tribal community which resulted the millet dehulling process is difficult compare to rice. Earlier it was a subsiding price now the rice is cost-free from PDS.

The Dhan Foundation initiated and introduced the dehulling machine for millets which is very useful and increased the consumption of millets among the Malayali tribal farmers.

20. What about commercial millet production?

In the Jawadhu region, there is no value addition and marketing for millets. Dhan Foundation collects millet directly from the farmers on their doorstep and some middlemen collects the millet from the farmers. In Jamunamuthur there is a *Mandi* (trade) for millet where the farmer sells the millet.

The lack of value addition and marketing seems to be a significant challenge. However, the efforts of the Dhan Foundation and the existence of the Mandi in Jamunamuthur provide some avenues for farmers to sell their produce.

22. Who are the operators? Who organizes the sector and how? In short, can millet from the Jawadhu Hills, which is increasingly found in shops in Pondicherry and Chennai, create local development?

Jawadhu Hills Small Millets Producer Company Ltd, Kalanjiam Thozhilagam Limited (KTL), and LAMPS Society Office, Jamunamarathur, etc. might be the operators behind this.

23. Apart from the 4 farms analyzed by Maeva and Noémie, could you try to assess (via the accounts of the interviewees) whether, both spatially and quantitatively,

I need more clarity on the question.

24. Millet cultivation is progressing in the Jawadhu Hills and since when?

Millet cultivation has been an integral part of agriculture in the Jawadhu Hills for centuries, aligning with traditional farming practices in the region. This long-standing agricultural tradition reflects the adaptation of the local communities to their environment and the nutritional and economic importance of millets in their diet and livelihood. The progress in millet cultivation continues as efforts are made to support and enhance the practice, despite challenges such as limited irrigation facilities and changing dietary preferences.

Local landraces of little millet (Samai) have been cultivated in the Jawadhu Hills for generations. Despite being replaced by rice as the staple food, people continue to grow Samai due to its ease of cultivation, and suitability for rainfed conditions. This ongoing practice reflects both the cultural heritage and practical benefits associated with millet cultivation in the region.