



# DOCUMENTATION OF TRADITIONAL KNOWLEDGE AND PRACTICES ON FOOD, NUTRITION & HEALTH

In two Blocks of Rayagada District in Odisha



# Documentation of Traditional Knowledge and Practices on Food, Nutrition & Health

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# TABLE OF CONTENTS

|   |   |
|---|---|
| <b>I</b><br>ACKNOWLEDGEMENT                           | <b>07</b><br>FOOD, NUTRITION & HEALTH OF<br>THE INDIGENOUS PEOPLE             |
| <b>01</b><br>INTRODUCTION                             | <b>19</b><br>EMERGING CHALLENGES OF<br>TRADITIONAL FOOD HABITS &<br>PRACTICES |
| <b>04</b><br>ABOUT THE<br>STUDY                       | <b>23</b><br>WAY<br>FORWARD   |
| <b>06</b><br>PROFILE OF THE SAMPLE DISTRICT<br>BLOCKS | <b>25</b><br>REFERENCES   |

## ABBREVIATIONS

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Rajkishor Mishra

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# INTRODUCTION

Climate change has been a potential threat to reverse the progress made so far in the fight against hunger and malnutrition. It has created a risk to food security for the most vulnerable populations in a country like India. The three main dimensions to food security i.e., food availability, access to food, and food absorption have been affected as a result of climate variability. More importantly, climate change has reduced the production and consumption of certain foods that play a critical role in the diets of the rural poor and the indigenous people<sup>1</sup>. Thus it has affected the nutritional quality of foods consumed and has caused micronutrient deficiency (hidden hunger) in the poor and vulnerable. For India, food security continues to be high on its list of development priorities because the country's relatively high rates of economic growth have not led to a reduction in hunger and undernutrition.

However, in the tribal hinterland of Odisha, the indigenous people have traditional knowledge, expertise, skills and practices related to food security and food and agricultural production. Traditional farming, fishing, pastoralism/herding, foraging and forestry are based on long-established knowledge and practices and can withstand climate variability. People used such knowledge from generation to generation for their livelihood in an unaccounted manner. There are no such written documents for recording and dissemination of such knowledge. Indigenous traditional knowledge includes the knowledge, innovations and practices of indigenous and local communities which are derived from experience gained over the centuries. It can be derived from diverse and unusual sources like stories, songs, folklore, proverbs, cultural values, beliefs, rituals, community laws, the local language, and agricultural practices, including the development of plant species and animal breeds. Indigenous and local communities have an intimate knowledge of many aspects of their surroundings and their daily lives. Over centuries people have learnt how to grow food and preserve it and survive in difficult environments. They know what varieties of crops to

plant when to sow and weed, which plants are poisonous, which can be used for control of diseases in plants, livestock and human beings. The indigenous people use their traditional knowledge to ensure food and livelihood security in a wide range of ecosystems, including fragile and harsh ones.

The application of traditional knowledge in such areas as ecosystem and landscape management, water management, soil conservation, biological control of pests and diseases, ecological agriculture and livestock practices, and plant and animal breeding often enhances food security and prevents or alleviates poverty. The indigenous communities have conserved and used domestic and wild species sustainably, which helps to ensure food security, improved livelihoods, incomes and participation in the markets.

Due to traditional knowledge and practices, the indigenous people experienced fewer diseases as they depended mostly on nature for food and nutrition. They also collected medicines from different plants in the forest for the treatment of ailments. However, traditional livelihoods, indigenous plant varieties and animal breeds are now increasingly endangered by the commercialization of agriculture, population dynamics, land-use/cover changes and the impacts of climate change.

## 1.1 Rationale for the Study

The indigenous traditional knowledge and its relevance to ensure food, health & nutrition security is an understated area in Odisha and very few research studies have been undertaken to understand, document and disseminate indigenous traditional knowledge for preservation, transfer or adoption elsewhere. In the present day situation, where the challenges of climate change, natural disaster, biodiversity loss, destabilized ecological services, food and nutritional inequality, problems of sanitation and health and many others, are looming large, the relevance of indigenous traditional knowledge is a vital and systematic documentation of

<sup>1</sup>Indigenous People are those who retain knowledge of the land and food resources rooted in historical continuity within their region of residence.

that knowledge and practice is quite important to find the locally viable ways and means to address the emerging challenges and mitigate the impacts by the indigenous communities and rural poor.

Realising the importance of indigenous traditional knowledge in the present day context, the present study is conducted by Caritas India<sup>2</sup> to document indigenous traditional knowledge and practices in its Global Programme locations of Bissamcuttack and Gudari blocks of Rayagada district, so that others can also be benefitted from their knowledge system and lead a healthier life in the wake of climate change.

Caritas India has started the Programme in April 2021 with interventions like baseline survey, awareness campaign on govt. schemes and traditional food system, health and sanitation. It has set the target of reaching out to 1203 households, 2589 Females and 2544 males in 20 villages covering 3 GPs of Bissamcuttack, Gudari and Chandrapur blocks in Rayagada district.

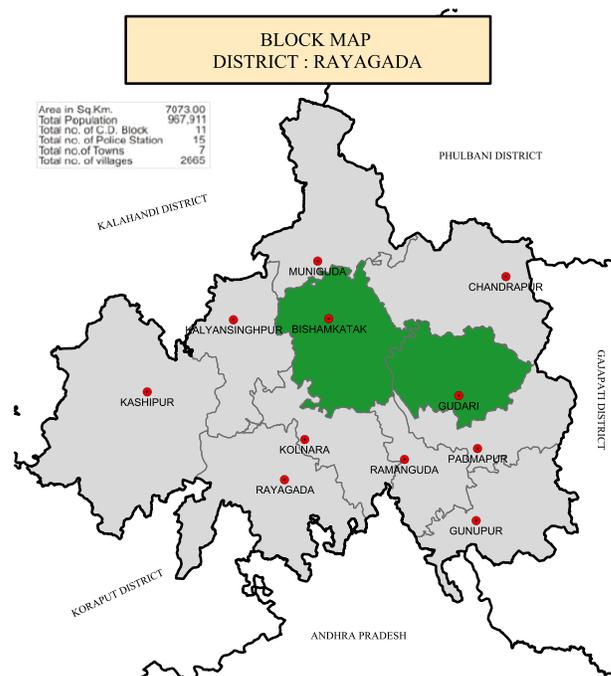


Table-1: Programme locations of Caritas India in Rayagada District

| Block         | Gram Panchayat | Village      | Total HH | Population |
|---------------|----------------|--------------|----------|------------|
| Chandrapur    | Hanumantpur    | Sripadar     | 15       | 45         |
| Chandrapur    | Hanumantpur    | Brahaguda    | 14       | 42         |
| Gudari        | Karlaghati     | Luhakhaman   | 45       | 198        |
| Gudari        | Karlaghati     | Sipraguda    | 35       | 170        |
| Gudari        | Karlaghati     | Patanguda    | 40       | 169        |
| Gudari        | Karlaghati     | Raschuli     | 80       | 396        |
| Gudari        | Karlaghati     | Bripaanga    | 55       | 272        |
| Gudari        | Karlaghati     | Koralghati   | 300      | 956        |
| Gudari        | Karlaghati     | Papikhal     | 60       | 294        |
| Gudari        | Karlaghati     | Samberlendi  | 90       | 504        |
| Gudari        | Karlaghati     | Pongali      | 55       | 270        |
| Bissamcuttack | Rasikhola      | Rasikhola    | 43       | 201        |
| Bissamcuttack | Rasikhola      | Utpabadi     | 30       | 122        |
| Bissamcuttack | Rasikhola      | Gangerdabaju | 25       | 103        |
| Bissamcuttack | Rasikhola      | Ghusuripadar | 79       | 343        |

<sup>2</sup>Caritas India is one of the leading humanitarian organisation having impacted millions of lives over the last five decades. Founded in 1962, Caritas India has been working in India under the aegis of Catholic Bishops' Conference of India.

| Block         | Gram Panchayat | Village      | Total HH | Population |
|---------------|----------------|--------------|----------|------------|
| Bissamcuttack | Rasikhola      | Tada         | 52       | 245        |
| Bissamcuttack | Rasikhola      | Uradi        | 35       | 158        |
| Bissamcuttack | Rasikhola      | Gunanagpader | 45       | 160        |
| Bissamcuttack | Rasikhola      | Padilipanga  | 70       | 346        |
| Bissamcuttack | Rasikhola      | Baberi       | 35       | 139        |

# ABOUT THE STUDY

## 2.1 Purpose

To document the traditional knowledge about food systems that contributes towards improving the health and nutrition of Indigenous Peoples. The specific objectives of the study are following:

- To understand the economic, social and political factors that are gradually uprooting many of the untapped resources from the native habitats of indigenous people resulting in loss and erosion of very rich indigenous knowledge;
- To assess how the indigenous traditional knowledge was helping the indigenous people to sustain their livelihoods and improve their health and nutritional condition;
- To Identify, document and incorporate indigenous traditional knowledge in the daily livelihood activities (food system) which can contribute to improving nutrition and health of Indigenous communities.

## 2.2 Scope

The study will give a new biological and ecological insight and will help in natural resource management and reviving indigenous health practices. It will also help in development planning for not only health and nutrition improvement among the locals but also help in environment appraisal.

## 2.3 Samples & Methodology

### a) Sample

A total of six villages of Bissamcuttack and Gudari blocks were covered for the present study. The villages were purposively selected where Caritas India has been working and the indigenous people still follow their traditional practices of food production and consumption. The list of sample villages visited for the study is given in the table below (Table-1).

Table-2: List of Villages visited

| Date       | Villages visited             | Gram Panchayat | Block         |
|------------|------------------------------|----------------|---------------|
| 03.09.2021 | Tada, Rasikhola              | Rasikhola      | Bissamcuttack |
| 04.09.2021 | Baberi, Gangadbaju, Kidimati | Rasikhola      | -do-          |
| 05.09.2021 | Papikhal, Malaguda,          | Karlaghati     | Gudari        |

### b) Methods

Both primary and secondary sources of information were used to capture the traditional knowledge and practices. The following methods were used to capture the traditional knowledge and practices in the sample villages.

#### a. Community Meetings:

Community meetings were organised with both men and women to understand their traditional farming and food practices, availability of food and the challenges

of conserving their traditional food habits.

#### b. Key Informant Interviews:

The study team interacted with the key informants like community leaders/elders, Sarpanches (elected representative) to understand their traditional knowledge on food patterns, agricultural practices, availability of food in the forest and the interconnectedness between biodiversity and forest based livelihoods. For this specific lead, questions were developed for the Key Informant Interviews.



*Meeting at Tada, Rasikbala*

c. Resource Mapping:

PRA tools like resource map, seasonality of food availability now and then, consumption pattern now and then were used to facilitate an interactive

discussion with the community members and to know their traditional knowledge and practices on food production and the availability of food from different sources.

d. Transact Walk:

Transect walks with the community members were carried out in the sample villages to know the distribution of resources, features, landscapes, mainland uses, crops and edible fruits/vegetable availability and users along a given transect.

e. Review of literature:

Available studies and reports on traditional knowledge and practices of the indigenous communities on the food production system, consumption pattern, the status of availability of food in tribal areas of Odisha and other states were reviewed to gather secondary information.

## PROFILE OF THE SAMPLE DISTRICT & BLOCKS

Rayagada district is situated in southern Odisha and became a separate district in October 1992. The district covers an area of 7,584.7 square kilometres and is divided into eleven blocks. As per Census-2011, the district has a total population of 9,67,911 (Males: 4,71,960 and Females: 4,95,951) with 56 per cent scheduled tribe and 14 per cent scheduled caste populations. Its population consists mainly of tribes, primarily the Khonds and the Soras. In addition to Odia, Kui and Sora are spoken by the district's

indigenous population. The literacy percentage of the district is 49.8 against 72.9 of the State.

Agriculture is the chief source of income, and paddy, wheat, ragi, green and black gram, groundnut, sweet potato and maize are the district's major crops. The climate of the district is mainly tropical. It is very much influenced by the South-Western monsoon during June-September. A vast stretch of high hills and Green forests control the climate to a great extent.

Table-3: Block wise GP and Villages

| Sl. No. | Blocks         | Gram Panchayats | Villages |
|---------|----------------|-----------------|----------|
| 1       | Muniguda       | 16              | 416      |
| 2       | Chandrapur     | 7               | 219      |
| 3       | Gudari         | 9               | 159      |
| 4       | Bissamcuttack  | 20              | 308      |
| 5       | Kalyansinghpur | 13              | 254      |
| 6       | Kashipur       | 20              | 449      |
| 7       | Rayagada       | 28              | 294      |
| 8       | Kolnara        | 15              | 199      |
| 9       | Ramnaguda      | 12              | 119      |
| 10      | Padmapur       | 13              | 125      |
| 11      | Gunupur        | 18              | 129      |
|         | Total          | 171             | 2671     |

Source: District Census Handbook, Rayagada

**Bissamcuttack:** The block is having 20 Gram Panchayats and 308 villages. The total population of the block is 92,490 (Males: 43,945 and Females: 48,545) with a scheduled tribe population of 55,195 and a scheduled caste population of 15,642.

**Gudari:** The block has 9 Gram Panchayats and 159 villages. The total population of the block is 42,737 (Males; 20,993 and Females: 21,744) with a scheduled tribe population of 31,523 and a scheduled caste population of 5,857.

Source: District Census Handbook, Rayagada

# FOOD, NUTRITION & HEALTH OF THE INDIGENOUS PEOPLE

## 4.1 Agricultural practices

Tribal communities inhabiting the visited villages have been cultivating the traditional cultivars viz. paddy, millets, pulses and vegetable crops. Their subsistence lifestyle, local diet habits and dependence on rain-fed irrigation have influenced a great deal to cultivate and conserve the traditional cultivars or landraces. By selecting and conserving the seeds from one season to the next, they have been able to sustain and continue to be self-reliant. The tribal communities have preferred to continue the cultivation of traditional cultivars, as these are ecologically suitable, economically viable and valuable. The traditional cultivars and landraces cultivated by the tribes are also drought and pest tolerant and disease resistant. Above



*Shifting cultivation (Dongar Chasa)*

The tribals in the visited villages mainly do shifting or burn and slash cultivation (Podu or Dongar chasa). The major source of their food security comes from this form of cultivation. These practices are said to be eco-hostile from the standpoint of dependence of tribes on forest and hillslope. They also plough both wetland and upland for growing paddy and other crops. They have the traditional system of division of forest land among the villagers. They know what patch of land is allotted to them. In addition, individual households also grow vegetables in their backyard for household consumption and sale.

all, the tribes have their practical reasons for cultivating these cultivars, which meets the high calorie requirements needed for their hard life. Pesticides and fertilizers are not required to grow those cultivars. The tribal communities practice a mixed cropping system (MCS). The farming system enables them to cultivate cereals, millets, pulses and oil crops together in a limited area. It not only helps in utilizing the seasonal rainfall but also keeps the soil unexposed thereby preventing topsoil erosion. The combination of crops with legumes helps in nitrogen fixation, thus maintaining soil fertility. The mixed cropping system not only helps them deriving maximum benefits from their small land holdings but also takes care of their food requirements throughout the year.



*Cultivation in low land*

However, at present, the cattle menace has been visible and that is directly affecting their cultivation – “Dongar Chasa” in the visited villages. The villagers said, earlier cattle were freed during March and April to graze in the forest on their own. Now a days the cattle population has increased also they are freed to graze in the forest during late November and December. This has adversely affected the crops and cropping pattern. Due to the menace, people are discouraged to go for Dongar Chasa, also affecting their plate – food diversity. Crops like Kandul, Kaal are no more produced on large scale now a days due to this.

“Now people have started planting cashew and growing cotton, because it is fetching them money. They are not interested to grow traditional crops.”—**Sarpanch, Rasikhola GP**

## 4.2 Food Habits

The food diversity in the locality is great with greens, wild vegetables, shoots, fruits, mushrooms and tubers. The community members in the visited villages mainly depend on crops grown through 'shifting cultivation' in hills and low and uplands, vegetables are grown in backyards. They also gather many forests produces (minor forest produces or MFP) for food, medicine, as well as for other domestic purposes. There is a seasonal variation in the availability of different produces for household consumptions. They collect these items every day based on the availability of these items. They know exactly which type of produce to collect, as well as the proper season and time of the day to gather those items. They never overexploit the forest and are very precise about the time that a particular plant or shrub should be picked, dug or cut.

Besides, wild animals also form a part of the food diversity of the tribals but with the depletion of forest and forest cover, it is not available now a days. The qualitative enquiry through FGDs revealed that rice now a days has been the staple food for the community. Rice, water rice (both hot and stale), millets are commonly consumed. Meals consisted of rice, water rice; millets are consumed with green leafy vegetables, vegetables, dry fish, bamboo shoots, mushroom etc. The consumption of vegetables depends on its availability. Pulses are consumed sometimes but not daily. Many micronutrient rich plant foods are part of their daily dietary intake. Some of the indigenous foods identified in the study have medicinal properties which are known to the local community based on their practical knowledge and traditional wisdom.

“There will be incidence of theft and violence if PDS rice is stopped.”  
—elderly persons of Tada, Rasikhola GP.

In the participatory mapping of the seasonality of food (Before and Now), the community members at Papikhal village in Karlaghati GP of Gudari block, pointed that over the years their food habits have been changed. Due to the availability of rice through PDS,

they are now using rice along with their traditional cereals and millets. Now they have started using vegetables also in their meals. Because the younger generation is in the habits of rice and vegetables.

Table-4: Seasonality of Food (Before and Now)

|                            | (Nadresi)<br>Morning   |                                      | (Windi)<br>Noon                             |   | (Nadanga)<br>Night   |  |
|----------------------------|--|--------------------------------------|---|---|--|--|
|                            | Before   | Now                                  | Before                                      | Now   | Before   | Now  |
| Khara Kara (Summer Season) | Pakhala + Lanka + Luna   | Pakhala + Alu + Bada Baigana         | Aamba Tanku Jhaun Joba Saga                 | Mandiya Jhara+ Basi Pakhala Padi Panipariba | Saru Kanda + Seranga Kanda + Sijhei ki Khaithilu luna morich | Bhata, Dali Panipariba, Maunsa (Machha, Andaa, Bana Ghusuri, Buler Kukuda) |
| Barsha Piju (Rainy Season) | Pakhala + Kodi Chhatu  | Pakhala + Panipariba, Kankada Karad  | Pani Pakhala + Saga                         | Basi Pani Pakhala + Panipariba              | Sarukanda + Seranga Kanda Luna morich                        | Bhata Dali+ Tarkari Aamisha etyadi.  |
| Shito Peni (Winter Season) | Mohila + Purusha Sakale Purusha Solpa rasa Piuthile, Sakale mohila pakhala bhato | Garam Bhata, Tarkari, Baigana Etyadi | Solpa Rasa, Mahula rasa Pie kamaku Jauthile | Bhata, Pani Pakhala, Panipariba             | Saru Kanda + seranga Kanda Sijheiki Khaithilu                | Bhata, Dali, Tarkari, Aamisha etyadi.                                      |

However, mainstream nutrition security discourse does not acknowledge the critical role of uncultivated foods in the lives of the tribal community. Mainly the micro-nutrients they get from uncultivated food are immense. Uncultivated food forms an important chunk of the daily diets of the tribals in the visited villages. In a time of stress, bad monsoon, hunger months of lean weeks, when the PDS rice dries up and employment is not available; it is the uncultivated foods, which form a major source of food and nutrition of the tribal community. Uncultivated foods are more resilient to climate change and can be a major source to fall back in a period of stress. There is an enormous wealth of knowledge associated with these foods with members of the community that includes where the species grows, seasonality, characteristics, identification and appearance, its nutritive value and medicinal properties, properties related to processing or storing, cooking methods etc.

Following are some of the benefits of uncultivated food:-

- a) Critical supplement: During the time of stress, hunger, lean season and months, food collected from forest help the tribal community a lot.
- b) Nutritionally rich: The food collected from the forest are rich in vitamins and minerals, also nutritionally rich
- c) Yearlong supply: If there is a forest nearby, the villagers get food and nutrition throughout the year.
- d) Nutritious diverse food: they get a variety of food, tuber, greens, mushrooms, roots and fruits.
- e) Not just affordable but free: With little effort and work the food from the forest is accessed by all. They also get it free and in a sustainable way.
- f) Safe food: It is now established that the food as collected from the forest are free from pesticides and chemical fertilizers and completely safe for all section of the community.
- g) Climate change: The food as grown in the forest are climate resilient, these foods grow and cater to the need of the community throughout the year.
- h) Dignity: This gives a sense of self-dependence, dignity and pride.
- i) Cultural importance: Several of these foods hold great cultural significance for the community dependent on them.
- j) Associated knowledge: There is a wealth of biological knowledge associated with these foods with members of the community, including children.



*Seasonality of Crops shown at Baberi, Rasikhola*

However, as emerged from the Focus Group Discussion, there is a decline in the availability and consumption of uncultivated food due to the following reasons:

- Declining Forest cover and moving farther from villages;
- Forest area replaced by plantation, incentive schemes, cash crops etc;
- Rainfall pattern affecting the forest foods (mainly mushrooms and greens);
- Changing dietary pattern due to introduction of paddy;
- Increased cash income of people from different sources including remittance from the migration of youths;
- Plantation of cashew, cotton and construction of roads;
- Forest food collected from the field, getting affected by chemical fertilizer and pesticides and monocultures.

Following food-fruits, green, mushroom, tubers and paddy etc are collected or grown in the sample villages. In the resource mapping process, the community members of Papikhal village in Karlaghat GP of Gudari block mentioned that they gather foods-wild fruits, mushroom, roots/tubers, greens etc from the forest, grow cereals, millets, roots & tubers, vegetables, cashew, oilseeds, paddy in the hillock, grow pulses, low land paddy, vegetables in upland and vegetables, mushroom etc in their backyards. They usually grow

vegetables for their consumption and in case of surplus, they sell in the market.

As given in Table-4 below, the community members of Papikhal mentioned that now-a-days they get very less varieties of mushrooms from the forest. They were gathering different varieties of mushrooms earlier. The availability of Tola and Kendu has been reduced considerably. From June-August also they get very foods from the forest.

Table-5: Seasonality of foods from different sources

| Village - Baberi       | G.P - Rasakhola |        |        |         |        |        |         |           |        |       |        |         |
|------------------------|-----------------|--------|--------|---------|--------|--------|---------|-----------|--------|-------|--------|---------|
|                        | Baisakha        | Jestho | Asadha | Srabana | Bhadra | Aasina | Kartika | Margasira | Pousha | Magha | Falgun | Chaitra |
|                        | Hira            | Pod    | Jet    | Aas     | Say    | bad    | Das     | Di        | Pan    | Pus   | Bu     | Pa      |
| <b>Forest</b>          |                 |        |        |         |        |        |         |           |        |       |        |         |
| <b>1. Roots/Tubers</b> |                 |        |        |         |        |        |         |           |        |       |        |         |
| Pita kanda             |                 |        |        |         |        |        |         |           |        |       |        |         |
| Pital Kanda            |                 |        |        |         |        |        |         |           |        |       |        |         |
| Mundi kanda            |                 |        |        |         |        |        |         |           |        |       |        |         |
| Cheranga Kanda         |                 |        |        |         |        |        |         |           |        |       |        |         |
| Bhato Kanda            |                 |        |        |         |        |        |         |           |        |       |        |         |
| Nagala Kanda           |                 |        |        |         |        |        |         |           |        |       |        |         |
| Rasi Kanda             |                 |        |        |         |        |        |         |           |        |       |        |         |
| Katho Kanda            |                 |        |        |         |        |        |         |           |        |       |        |         |
| <b>2. Green</b>        |                 |        |        |         |        |        |         |           |        |       |        |         |
| Barda Saga             |                 |        |        |         |        |        |         |           |        |       |        |         |
| Gandri Saga            |                 |        |        |         |        |        |         |           |        |       |        |         |
| Juba Saga              |                 |        |        |         |        |        |         |           |        |       |        |         |
| Chunchhun Saga         |                 |        |        |         |        |        |         |           |        |       |        |         |
| Kolama Saga            |                 |        |        |         |        |        |         |           |        |       |        |         |
| Kanta Saga             |                 |        |        |         |        |        |         |           |        |       |        |         |
| <b>3. Mushroom</b>     |                 |        |        |         |        |        |         |           |        |       |        |         |
| Munei Chhatu           |                 |        |        |         |        |        |         |           |        |       |        |         |
| Aamba Chhatu           |                 |        |        |         |        |        |         |           |        |       |        |         |



If we analyse Table-5 below, June-Sept. are the lean months for the people living in the visited villages. Even during these months, the availability of food in the forest is also less. They also get no almost no wage earning opportunities nearby. All these months, it becomes difficult for them to survive with little grains

at their disposal. As rice is now available through the PDS, they manage with the rice somehow. Earlier they were taking mango kernel and it caused heavily on their health. It is also clearly evident from the table below that the cultivation of cereals and millets through shifting cultivation is gradually less.

Table-6: Seasonality of foods from different sources

| Village - Baberi               | G.P - Rasakola |        |        |         |          |        |         |           |        |       |        |         |
|--------------------------------|----------------|--------|--------|---------|----------|--------|---------|-----------|--------|-------|--------|---------|
|                                | Baisakha       | Jestho | Asadha | Srabana | Bhadrapa | Aasina | Kartika | Margasira | Pousha | Magha | Falgun | Chaitra |
| Months/Masha                   | Hira           | Pod    | Jetha  | Asadi   | Srayadi  | badha  | Dasari  | Diall     | Pandu  | Pusha | Buipa  | Pagudi  |
| <b>Agriculture</b>             |                |        |        |         |          |        |         |           |        |       |        |         |
| <b>1. Shifting Cultivation</b> |                |        |        |         |          |        |         |           |        |       |        |         |
| Sunya                          |                |        |        |         |          |        |         |           |        |       |        |         |
| Kangu                          |                |        |        |         |          |        |         |           |        |       |        |         |
| Kusula                         |                |        |        |         |          |        |         |           |        |       |        |         |
| Mandiya                        |                |        |        |         |          |        |         |           |        |       |        |         |
| Jana                           |                |        |        |         |          |        |         |           |        |       |        |         |
| Ganthiya (millet)              |                |        |        |         |          |        |         |           |        |       |        |         |
| Makaa                          |                |        |        |         |          |        |         |           |        |       |        |         |
| Jhudanga                       |                |        |        |         |          |        |         |           |        |       |        |         |
| Kunda Dhana                    |                |        |        |         |          |        |         |           |        |       |        |         |
| Kursha                         |                |        |        |         |          |        |         |           |        |       |        |         |
| Jota                           |                |        |        |         |          |        |         |           |        |       |        |         |
| Kandulo                        |                |        |        |         |          |        |         |           |        |       |        |         |
| Kalo                           |                |        |        |         |          |        |         |           |        |       |        |         |
| Katho Kanda                    |                |        |        |         |          |        |         |           |        |       |        |         |
| Rani Kanda                     |                |        |        |         |          |        |         |           |        |       |        |         |
| Maricha                        |                |        |        |         |          |        |         |           |        |       |        |         |
| Saru Kanda                     |                |        |        |         |          |        |         |           |        |       |        |         |
| Kakudi                         |                |        |        |         |          |        |         |           |        |       |        |         |
| Janhi                          |                |        |        |         |          |        |         |           |        |       |        |         |

| 2. Low/up land cultivation |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Dhana                      |  |  |  |  |  |  |  |  |  |  |  |  |
| Biri                       |  |  |  |  |  |  |  |  |  |  |  |  |
| Jhudunga                   |  |  |  |  |  |  |  |  |  |  |  |  |
| 3. Backyard plantation     |  |  |  |  |  |  |  |  |  |  |  |  |
| Alashi                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Rashi                      |  |  |  |  |  |  |  |  |  |  |  |  |
| Sana Judanga               |  |  |  |  |  |  |  |  |  |  |  |  |
| Kolatha                    |  |  |  |  |  |  |  |  |  |  |  |  |
| Kusula                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Mandiyā                    |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. Vegetables              |  |  |  |  |  |  |  |  |  |  |  |  |
| Baigana                    |  |  |  |  |  |  |  |  |  |  |  |  |
| Tomato                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Lau                        |  |  |  |  |  |  |  |  |  |  |  |  |
| Janhi                      |  |  |  |  |  |  |  |  |  |  |  |  |
| Vendi                      |  |  |  |  |  |  |  |  |  |  |  |  |
| Baitalu                    |  |  |  |  |  |  |  |  |  |  |  |  |
| Kolam Saga                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Bajhi Saga                 |  |  |  |  |  |  |  |  |  |  |  |  |
| Kalara                     |  |  |  |  |  |  |  |  |  |  |  |  |
| Poi Saga                   |  |  |  |  |  |  |  |  |  |  |  |  |
| Kobi                       |  |  |  |  |  |  |  |  |  |  |  |  |
| Mula                       |  |  |  |  |  |  |  |  |  |  |  |  |

**Index**

|  |                |  |             |  |                  |
|--|----------------|--|-------------|--|------------------|
|  | Less available |  | Lean months |  | Available months |
|--|----------------|--|-------------|--|------------------|

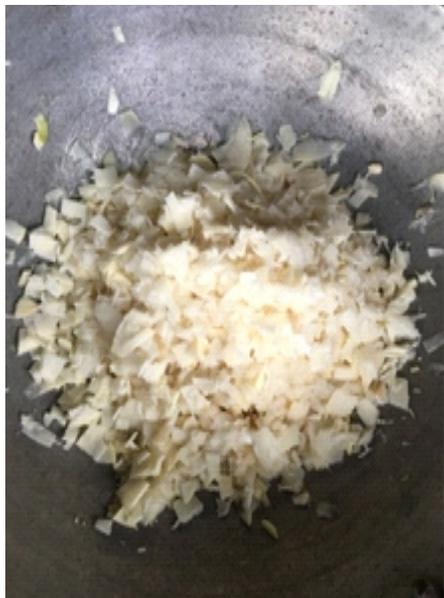
**4.2.1 Gender and Food**

There is a greater degree of equality between the sexes when it comes to collecting uncultivated food from the forest. Both the men and women collect food from the forest.

There are no special food practices for children under the age of three; rather they are given the normal food

that the adult eats at home. So, the children are found to be weak and there are visible symptoms of malnutrition among the children. The children need special care, food practices and health care. There are also no special provisions for pregnant and lactating mothers, especially when it comes to food and nutrition; rather there are food restrictions during this period, making the mothers more vulnerable.

Pic.1: Available Food



*Bamboo shoot*



*Bada jbudunga (red cow pea)*



*Kosala (Millet)*



*Sana jbudunga (black eyed pea legume)*



*Jana (foxtail millet)*



*Wild mushroom*

There is a need for preservation of uncultivated food as collected from the forest including post-harvest management. At a time when the Government is planning for food fortification to deal with hidden

hunger (micro-nutrient deficiency), this is a very good alternative to deal with both malnutrition and micro-nutrient malnutrition.

Pic.2: Available Food



*Kanda Dhana (Upland paddy)*



*Ragi (finger millet)*



*Ganthiya (Millet)*



*Tamarind*



*Penga Manji (Medicinal seed)*



*Wild root*

### 4.3 Produce for Sale

The main market of the area is Dukum, which is 10 km away from the visited villages. People come to the weekly market for sale and purchase. It is observed that whether it is chicken or agricultural produce, the traders also come to the village itself and purchase it from producers from the doorstep. They sell different seeds collected from the forest such as “Penga Manji” and “Murukuli Manji” that is being used for medicinal purposes. They get around 60-70 rupees per kilogram of these items. Mahul Fula (Mahua flower) is also sold for cash in the local market. As the weekly market is far away, the villagers often exchange Mahua flowers with salt. When they give 1 kg. of mahua flower, they get around 2 kg. of salt.

They also sell Harada, Bahada, Til seeds, mustard seed, sunflower, niger seed, few varieties of mushrooms i.e., locally called Dasara Chattu and Pala Chattu in the local market. However, it is found that they don't sell much of their produces or uncultivated items in the market.

### 4.4 Health and Nutrition

As viewed by the elderly in the visited villages, the incidence of malaria has increased over the years. Mosquito nets are being provided under Government schemes to the households, but these are not being used. Except for malaria and few other common ailments, they have never experienced any other major diseases. The local environment of the communities presents a rich and ready source of indigenous plants

that are used for maintaining good health and treating illnesses. The enormous natural diversity present in the indigenous foods with the potential to contribute to nutritionally complete dietary patterns, the existence of transgenerational knowledge of their uses within the community and the ease of assimilation of these foods into the routine diets of the tribals, are some of the factors contribute towards the good health—not only physical health but also the emotional, mental and spiritual aspects of health, healing and protection from the disease of the indigenous people. The elderly present in the meetings also remembered, how even during pregnancy women delivered their child in the village/home itself. There was no need of taking the women to hospitals. However, there was the flip side to that home delivery practices.

For primary health care, the community members still depend on the “traditional healer” – Baida based in Baber. Now a days, they depend on ASHA (Accredited Social Health Activist) to get medicines for common ailments.

It also emerged from the FGD that during a particular month just to avoid the spread of smallpox and measles among the children; the community performs “Thakurani Puja” (worship the village deity) after cleaning their houses, surroundings and clothes. The beauty of this particular worship is that they maintain proper cleanliness and sanitation before they start worshipping. The practice is very much relevant in the present day context to take up sanitation drive at the community/society level.

“My maternal uncle was able to carry a 25 kg. salt bag from Gudari, which is 27 km. from Rasikhola. But we, the younger generation is less with physical fitness, stamina and immunity and even unable to stand after sitting on the floor. I've heard that consumption of ragi can cure diabetes and Kand rice (paddy grown in hillock) can cure joint pain. Consumption Kolatha (pulse) can cure kidney ailments. However, the cultivation of all these are gradually reduced.”

—Sarpanch, Rashikhola GP

The indigenous people maintain a healthy life all due to the traditional foods and their food practices. They are less dependent on the external market foods and depend more on food derived from forests and cultivation, which is organically grown. The nutritional

value of the foods that are collected from the forest (uncultivated) and cultivation is given below as 'Glow' food (growth – immunity) and 'Go' food (energy) in Table-6 & 7.

Table-7: Nutritional values of Protective 'Glow' Foods

| Food items                | Protein (g) | Fat (g) | Fibre (g) | Energy (Kcal) | Calcium (mg) | Iron (mg) | Carotene (ug) | Vit-C (mg) |
|---------------------------|-------------|---------|-----------|---------------|--------------|-----------|---------------|------------|
| <b>Cultivated foods</b>   |             |         |           |               |              |           |               |            |
| 1. Tomato                 | 1.9         | 0.1     | 0.7       | 23            | 20           | 1.8       | 351           | 27         |
| 2. Brinjal                | 1.4         | 0.3     | 1.3       | 24            | 18           | 0.38      | 74            | 12         |
| 3. Radish                 | 0.7         | 0.1     | 0.6       | 17            | 35           | 0.4       | 3             | 15         |
| 4. Onion                  | 1.8         | 0.1     | 0.6       | 101           | 50           | 0.5       | 15            | 2          |
| 5. Ridge gourd            | 0.5         | 0.1     | 0.5       | 17            | 18           | 0.39      | 33            | 5          |
| 6. Cucumber               | 0.4         | 0.1     | 0.4       | 13            | 10           | 0.6       | 0             | 7          |
| <b>Uncultivated foods</b> |             |         |           |               |              |           |               |            |
| 1. Guruda saga            | 3.9         | 0.3     | 2.1       | 49            | 398          | 20.9      | 3967          | 125.45     |
| 2. Jumbo                  | 1.3         | 0.5     | 3.8       | 37            | 30           | 4.3       | 48            | 18         |
| 3. Kankoda                | 3.1         | 1.0     | 3.0       | 52            | 33           | 4.6       | 1620          | 0          |
| 4. Mango                  | 0.6         | 0.4     | 0.7       | 74            | 14           | 1.3       | 2743          | 16         |
| 5. Tamarind seed          | 16.1        | 7.3     | 1.0       | 387           | 121          | 0         | 0             | 0          |
| 6. Sunsunia saga          | 3.7         | 1.4     | 1.3       | 46            | 53           | 0         | 0             | 0          |
| 7. Muchakani saga         | 9.1         | 1.9     | 7.6       | 189           | 1152         | 10.7      | 4305          | 232.17     |
| 8. Kusum kol              | 1.5         | 0.8     | 0.6       | 53            | 15           | 0         | 0             | 0          |
| 9. Ivy gourd              | 1.2         | 0.1     | 1.6       | 18            | 40           | 0.38      | 156           | 15         |
| 10. Tamarind              | 3.1         | 0.1     | 5.6       | 283           | 170          | 17        | 60            | 3          |
| 11. Drum stick leaf       | 6.7         | 1.7     | 0.9       | 92            | 440          | 0.85      | 6780          | 220        |
| 12. Pumpkin               | 1.4         | 0.1     | 0.7       | 25            | 10           | 0.44      | 50            | 2          |
| 13. Mushroom              | 3.1         | 0.8     | 0.4       | 43            | 6            | 1.5       | 0             | 0          |
| 14. Pumpkin leaf          | 4.6         | 0.8     | 2.1       | 57            | 392          | 0         | 0             | 0          |
| 15. Bamboo shoot          | 3.9         | 0.5     | 0         | 43            | 20           | 0.1       | 0             | 5          |
| 16. Jack fruit (seeds)    | 6.6         | 0.4     | 1.5       | 133           | 50           | 1.5       | 175           | 7          |
| 17. Bottle gourd          | 0.2         | 0.1     | 0.6       | 12            | 20           | 0.46      | 0             | 0          |
| 18. Colocasia leaf        | 3.9         | 1.5     | 2.9       | 56            | 227          | 10        | 10278         | 12         |
| 19. Papaya                | 0.6         | 0.1     | 0.8       | 32            | 17           | 0.5       | 666           | 57         |
| 20. Custard apple         | 1.6         | 0.4     | 3.1       | 104           | 17           | 4.3       | 0             | 37         |
| 21. Poi saag              | 2.0         | 0.7     | 0.6       | 26            | 73           | 1.1       | 7440          | 87         |
| 22. Gogu                  | 1.7         | 1.1     | 0         | 56            | 172          | 2.2       | 2898          | 20         |
| 23. Radish leaf           | 3.8         | 0.4     | 1.0       | 28            | 265          | 0.09      | 5742          | 106        |
| 24. Garuida saga          | 5.0         | 0.7     | 2.8       | 73            | 510          | 1.63      | 1926          | 17         |
| 25. Matta saga            | 7.2         | 4.8     | 13.5      | 303           | 1717         | 0         | 0             | 0          |
| 26. Siali seed            | 27.3        | 29.9    | 1.1       | 493           | 302          | 6.8       | 0             | 0          |
| 27. Bathua saag           | 3.7         | 0.4     | 0.8       | 30            | 150          | 4.2       | 1740          | 35         |
| 28. Kada saag             | 3.0         | 0.7     | 1.0       | 26            | 200          | 0         | 0             | 0          |
| 29. Mustard leaf          | 4.0         | 0.6     | 0.8       | 34            | 155          | 16.3      | 2622          | 33         |
| 30. Cow pea leaf          | 3.4         | 0.7     | 1.2       | 38            | 290          | 20.1      | 6702          | 4          |
| 31. Barada saag           | 3.6         | 1.0     | 5.5       | 62            | 312          | 0         | 0             | 0          |
| 32. Kunduri saag          | 3.9         | 0.3     | 2.1       | 49            | 398          | 20.9      | 3967          | 125.45     |
| 33. Bitter gourd leaf     | 4.5         | 4.5     | 4.5       | 73            | 207          | 3.2       | 3985          | 65         |
| 34. Kalam saag            | 2.9         | 0.3     | 2.2       | 31            | 70           | 3.3       | 2741          | 28         |
| 35. Kanta saag            | 3.0         | 3.0     | 1.1       | 43            | 800          | 22.9      | 3564          | 81         |
| 36. Mahula                | 1.4         | 1.6     | 0         | 111           | 45           | 0.23      | 307           | 40         |
| 37. Gandhiari saag        | 3.0         | 0.7     | 1.0       | 26            | 200          | 0         | 0             | 0          |

Table-8: Nutritional values of protective 'Go' foods

| Food items                | Protein (g) | Fat (g) | Fibre (g) | Energy (Kcal) | Calcium (mg) | Iron (mg) |
|---------------------------|-------------|---------|-----------|---------------|--------------|-----------|
| <b>Cultivated foods</b>   |             |         |           |               |              |           |
| 1. Cowpea dal             | 24.1        | 1       | 3.8       | 323           | 77           | 8.6       |
| 2. Soya bean              | 43.2        | 19.5    | 3.7       | 432           | 240          | 10.4      |
| 3. Peas                   | 7.2         | 0.1     | 4.0       | 93            | 20           | 1.5       |
| 4. Bengal gram dal        | 20.8        | 5.6     | 1.2       | 372           | 56           | 5.3       |
| 5. Pigeon gram dal        | 22.3        | 1.7     | 1.5       | 335           | 73           | 2.7       |
| 6. Beans                  | 1.7         | 0.1     | 1.8       | 26            | 50           | 0.61      |
| 7. Field bean             | 24.9        | 0.8     | 1.4       | 347           | 60           | 2.7       |
| 8. Goat meat              | 21.4        | 3.6     | 0         | 118           | 12           | 0         |
| 9. Lentils                | 25.1        | 0.7     | 0.7       | 343           | 69           | 7.5       |
| 10. Horse gram dal        | 22.0        | 0.5     | 5.3       | 321           | 287          | 6.7       |
| <b>Uncultivated foods</b> |             |         |           |               |              |           |
| 1. Chicken                | 25.9        | 0.6     | 0         | 109           | 25           | 0         |
| 2. Egg (hen)              | 13.3        | 13.3    | 0         | 173           | 60           | 2.1       |
| 3. Egg (duck)             | 13.5        | 13.7    | 0         | 181           | 70           | 2.5       |
| 4. Prawn                  | 19.1        | 1.0     | 0         | 89            | 323          | 5.3       |
| 5. Wild pig               | 18.7        | 4.4     | 0         | 114           | 30           | 2.2       |
| 6. Crab                   | 11.2        | 9.8     | 0         | 169           | 1606         | 0         |
| 7. Fish                   | 16.1        | 0.9     | 0         | 100           | 330          | 0.8       |
| 8. Red ant                | 13.4        | 4.6     | 0         | 131           | 104          | 0         |

Source: Forests as food producing habitats – Living Farms, Odisha, 2014

# EMERGING CHALLENGES OF TRADITIONAL FOOD HABITS & PRACTICES

It emerged from the focus group discussions and key informant interviews that the following challenges have impacted gradually many of the traditional food habits and agricultural practices in the visited villages.

1. **Migration:** Migration of youths to southern States mainly Kerala has started. Many youths are migrating for few months and coming back with new food habits, cultures. This trend of migration has affected traditional and local food habits and practices.
2. **Forest area replaced:** Forest area being replaced due to plantation, monocultures, incentive schemes, attraction for cash crops and there has been a huge shift in land use in these villages.
3. **Less availability of traditional seeds:** The availability of traditional seeds used by the indigenous people has gradually been reduced. As a result, they are not able to cultivate traditional crops.
4. **Cashew plantation:** A few years back cashew plantation in the hill and upland have spreaded like wildfire. Due to incentives and for ready cash, the indigenous people have gradually been attracted towards cashew cultivation. As a result, there has been a major shift in land use and has implication on food availability and food intake of the villagers.
5. **Cotton cultivation:** Two years back “cotton farming” has made an inroad into the villages, that were most dependent on food cultivation. This cash crop affected the food produce, accessibility and nutrition outcome of the indigenous people.
6. **Cattle menace:** Everywhere it is brought to the notice that cattle have been a major challenge so far as Shifting Cultivation is concerned. Elders remember that earlier people keep losing their cattle during March and April in the Dongar (hill), but now a days people of their villages and nearby villages keeping their cattle loose without guard during the month of December. This has impacted the Dongar (hill) cultivations a lot. Crops like maize and others cannot be grown due to cattle menace.
7. **Depleting forest cover:** Forest cover is declining and moving farther away from villages. This has impacted their availability of food from the forest and also increased the travel time of the villagers.
8. **Public Distribution System:** The availability of PDS rice has affected the dietary pattern. Although the availability of PDS rice has brought in a sense of food security, it has increased the dependency and undermined the cultural and nutritional appropriateness of such food.

## WAY FORWARD

- The application of traditional knowledge in the areas such as ecosystem and landscape management, water management, soil conservation, biological control of pests and diseases, ecological agriculture and livestock practices, and plant and animal breeding often enhances food security and prevents or alleviates poverty. However, traditional knowledge has been undermined, overwhelmed or has survived only in fragments. It is, therefore, important to retrieve, reinvent and reintroduce 'traditional knowledge' to create a farmer-driven, sustainable and biodiverse agriculture.
- The cultural dynamics and traditional institutions and practices should be encouraged to enhance agrobiodiversity, food security, livelihood sustainability and water and soil management in the locality to cope with climate, environmental and social change. Networking and engagement with biodiversity management authority/committees and linking the community institutions to government schemes /programmes such as Odsha Millet Mission, Food Security Mission, National Bank for Agriculture and Rural Development (NABARD) etc would help strengthening the local agricultural practices.
- The traditionally grown food and uncultivated food as collected from the forest by the indigenous community are rich in micronutrients. These species and knowledge should be promoted and protected as an alternative to the mandatory fortification of food, as decided recently by the Government of India.
- The promotion of community seed banks will help the conservation of traditional cereals and millets for use. Otherwise, traditional seed varieties will not be available for the indigenous people in the coming days and they will depend more on outside markets for seed procurement. This will increase their vulnerability to climate risks.
- The traditional mixed cropping methods of the indigenous people is a proven way for good health. It needs a further boost for the promotion of balance diet and food diversity.
- It is now established that the unmindful use of chemical fertiliser and pesticide has a negative impact on health, whereas the naturally grown food in the tribal pockets are organic and evidenced for its multiple health benefits. Therefore, the practice of the indigenous people needs to be adapted to scale up the practices.
- When all are struggling to address the issue of malnutrition and anaemia, creating a model around traditional cropping and uncultivated food from the perspective of women (pregnant and lactating) and children would be a great contribution. From the perspective of nutrition security in the life cycle approach, women and children are found to be a critical area of intervention.

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# NOTES

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