



Government of Nepal Ministry of Industry, Commerce & Supplies



Investing in rural people

Rural Enterprises and Remittances Project (SAMRIDDHI)

INDIGENOUS FOOD PRACTICES WITHIN RERP WORKING AREAS



Submitted by:

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Acronyms and abbreviations

RERP	Rural Enterprises and Remittance Project
IFAD	International Fund for Agriculture Development
FDG	Focus group Discussion
KII	Key Informants' Interview
RMSE	Rural Micro, Small and medium
TVET	Technical and Vocational Skills Training
NPHC	National Population and Housing Census
NSO	National Statistics Office
CBS	Central Beauro of Statistics
NFDIN	National Foundation for Development of Indigenous Nationalities
AEC	Argo Enterprise Centre
FNCCI	Federation of Nepalese Chamber of Commerce and Industries
TB	Tuberculosis

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Draupadi Subedi

Research Coordinator

Study on indigenous food practices

Executive Summary

Background: The indigenous peoples living in RERP working areas also have unique traditional food practices that are closely tied to their cultural heritage and way of life. However, in recent years, there has been a decline in the use of traditional food practices due to various factors. Indigenous peoples are one of the major target groups of Rural Enterprises and Remittance Project (RERP). It has the concern about the issues of indigenous people and has supporting through various planned activities to indigenous people. Further, it has making continuous efforts via community dialogs and discussions with indigenous peoples, their institutions, development partners and government to address the issues, and it realized one of the crucial aspects to respect and value the traditional food practices of indigenous communities, as they hold valuable knowledge about sustainable and healthy ways of living in harmony with the environment. Therefore, this study was planned with the aims to document traditional food practices within RERP working areas and explore the health benefits and sources of nutrition, and explore the possibilities of commercially viable indigenous foods for self-employment generation.

Methodology: Basically, qualitative data collection techniques included primary and secondary data and information collection from the relevant sources were used for the study. Mainly, 1) literature review, 2) interaction with project team and stakeholders, 3) key informants interview 4) focus group discussions and 5) participant observation were used for the study. This study was comprised of 3 major works: 1) Preparatory work with the comprehensive literature review, checklist/form/format development, and interaction with the RERP Officials. 2) Conducted in-depth FGDs, KII and participant observation in three selected indigenous communities, and 3) Data analysis and draft report preparation, sharing findings with project personnel, feedback collection and finalization of the report.

Study area and the community: The identification of indigenous communities and study area were the key concerns for this study. Therefore, the following indigenous communities in the RERP working areas that have a unique and rich history of traditional food practices were identified through the consultation with Project team:

- 1) Athpahariya community: Dhankuta Municipality-3 Dhankuta District.
- 2) Danuwar community: Triyuga Municipality-8 & 9, Udayapur District.

3) Santhal community: Rangeli Municipality- 2, Morang District.

Findings: The study reveals the significance of indigenous food practices that all studied communities have painstaking connections to biodiversity conservation, cultural preservation, and sustainable development. The cultivation practice from the sustainable management perspectives of food biodiversity, local/indigenous species are getting lost and replaced by hybrids except culturally valued some species like Ghaiya (paddy), Kodo (finger millet), local chicken and pig farming are conserving now at least in a very small scale in Athpahariya community and promoting Andi Paddy in Danuwar community from the cultural perspective. All studied three communities were found very rich in terms of food varieties as per their consumption of food items around the year. Generally, they use about four to five food items in a day, meat, Jand and Raksi also consume frequently. Santhal and Danuwar communities are found very rich in gathering and use of fish items than Athpahariya whereas the uses of milk and dairy products is less in all three communities.

Athpahariya, Danuwar and Santhal communities rely on crops like rice, maize, millets, pulses, vegetables and tubers, along with hunting, fishing, and foraging for a diverse range of foods. Traditional nutritious dishes, cultural festivals, and food-sharing practices are important aspects of their communities, fostering social cohesion, and preserving their cultural identity. They are not only significant for food production, food security and nutrition but also serve as a vital part of these communities' cultural heritage and way of life. They all are found very rich in their indigenous tacit knowledge, skills, technology on their traditional food practices, land use and agricultural production, food preparation including livestock rearing practices and local resource mobilization. Although in recent years, generally they used rice, lentil, seasonal vegetables/fruits and meat (Dal Bhat Tarkari and Masu Bhat) in daily food consumption but they have varieties of unique food practices as per their rituals and festivals that they preserved from years to years.

In all three communities, women have the knowledge acquisition trend about indigenous food production and preparation was found higher than men. Women are very interested and rich in indigenous tacit knowledge, skills, technology and practices in their food preparation, land use and food production including livestock rearing and local resource mobilization.

From the perspective of knowledge transformation, young generations of Athpahariya, Danuwar and Santhal communities have interest and knowledge about the indigenous foods to some extent,

but they have less knowledge about food preparation and preservation, cultivation, medicinal uses of crops/foods, and the nutritional and cultural values of those crops/foods. It was found that the food Dal Bhat Tarkari (Rice, Pulses and vegetables) preparation process is generally known by all but the knowledge of indigenous unique food preparation processes was found some lacks in young generations. The major problems of all three studied communities found similar that the indigenous species are getting lost and appear problems in sustainable production and management of indigenous species, lacking on knowledge transfer to young generations about indigenous food preparation, and no any initiation made from commercialization perspective of indigenous foods.

Recommendations: While discussing on the exist challenges and way forward, there found some opportunities to promote indigenous food practices that are presented here as recommendations of the study as follows:

- Promote and initiate the dialogs among indigenous people and stakeholders on the sustainable management of indigenous crop varieties with facilitating the nutritional, medicinal and cultural values including cost benefit analysis of indigenous foods.
- Promote knowledge-sharing culture within indigenous communities and households, particularly women and youths, in focusing on the inter-generational indigenous knowledge transfers, and facilitate to address indigenous food consumption, preparation and production knowledge of those indigenous crop varieties.
- Design the projects and small grant support to implement the projects with capacity building to women and youths for promoting sustainable production and management of indigenous food varieties, and indigenous food preparation processes.
- Promote more research programs on indigenous peoples' knowledge related to indigenous food practices, production techniques and preparation processes and documentation of those initiatives for wider sharing and inter-generational transfer.
- Capacity building on business management knowledge, cookery, hospitality and marketing idea as well as operating homestay to indigenous communities and support their business plan as indigenous food related income generation activities.
- Review and make discussions on the policy provisions i.e. “The Right to Food and Food Sovereignty Act, 2075 (2018)” and its implementation status at the National, Provincial and Local levels amongst relevant stakeholders.

1. Introduction

The traditional food practices of indigenous peoples are an important aspect of their cultural heritage and identity. These practices not only represent their food culture but also provide insight into the ways in which they have adapted to their local environment and vital sources of nutrition that these communities rely on. Indigenous communities have traditionally relied on their local environments to obtain a diverse range of foods, often through hunting, fishing, gathering, and agriculture. These practices are sustainable and well-adapted to their ecosystems, promoting biodiversity and the conservation of natural resources.

Indigenous people, women, people with disabilities, poor, and disadvantaged caste groups are the major target groups of International Fund for Agricultural Development (IFAD) and addressing their issues are the main concern in its project and programs. As an IFAD supported project, obviously RERP has the concern about the issues of indigenous people and participated various ongoing national and global platform for consultation and dialogue among representatives from Indigenous Peoples' institutions and organizations, IFAD, and governments. After participating the virtual global meeting of United Nations Food Systems Summit 2021 and the South Asia Regional Consultation Meeting 2022 of Indigenous Peoples' Forum at IFAD, RERP realized to explore about the indigenous food systems, issues and potential actions in its working area.

The indigenous peoples living in RERP working areas also have unique traditional food practices that are closely tied to their cultural heritage and way of life. However, in recent years, there has been a decline in the use of traditional food practices due to various factors, including globalization and western influence, loss of traditional knowledge, environmental degradation and land loss, and socio-economic factors. It is crucial to respect and value the traditional food practices of indigenous communities, as they hold valuable knowledge about sustainable and healthy ways of living in harmony with the environment.

In this context, it was realized that it is essential to make efforts to preserve and revitalize indigenous food systems that includes supporting sustainable agricultural production, land rights, education of cultural heritage, promotion of traditional foods in communities, and the documentation of tacit knowledge about the indigenous foods. The initiative contributes to empower indigenous peoples to maintain their cultural heritage, improve food security, and

enhance their overall well-being. Therefore, this study was planned with the aims to document traditional food practices within RERP working areas and explore the health benefits and sources of nutrition, and explore the possibilities of commercially viable indigenous foods for self-employment generation.

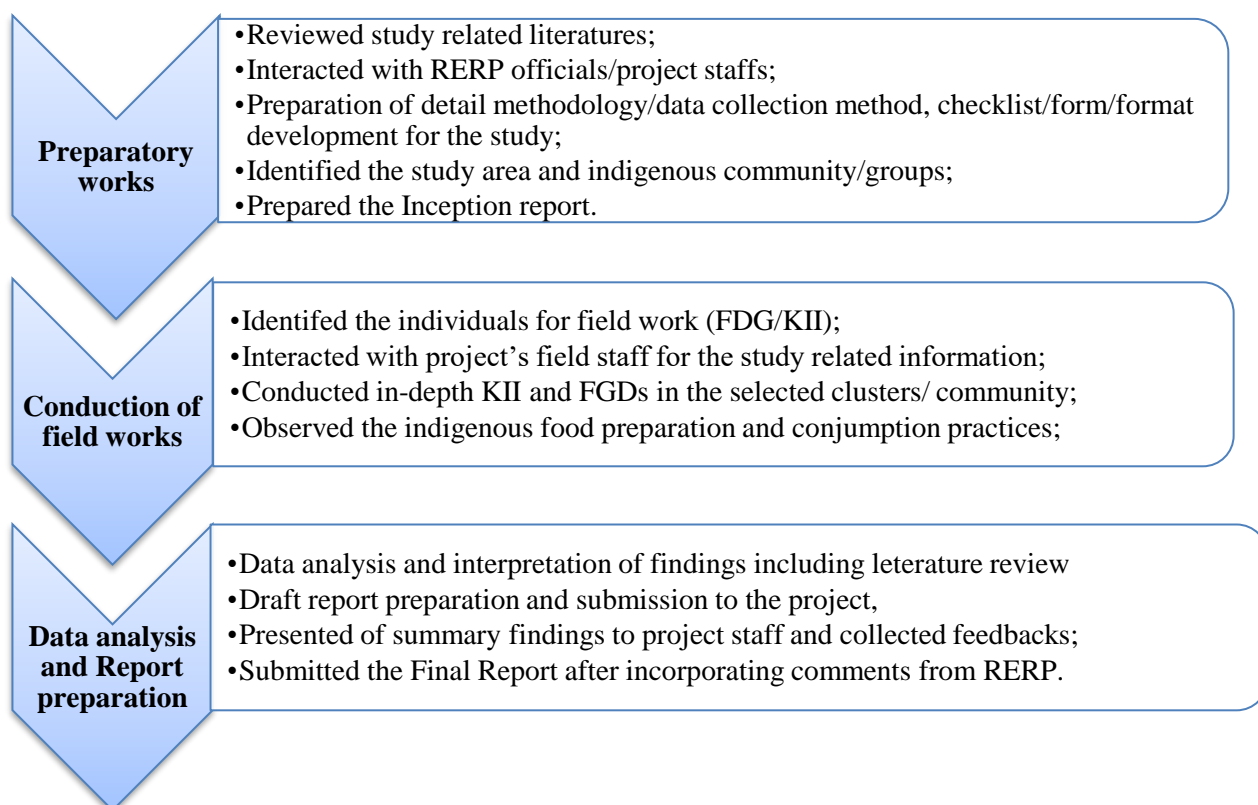
2. Objective

The primary objective of the study is to explore and document traditional food practices of indigenous peoples in RERP working areas. The study aims to:

- a) Identify and document the traditional food practices of selected indigenous peoples for study in the RERP working areas.
- b) Explore the health benefits and sources of nutrition that these communities rely on.
- c) Explore possibilities of commercialization of indigenous foods as potential income generation activities.

3. Framework and Methodology

The framework of this study was comprised of 3 major works; Preparatory work, Conduction of field work, and Data analysis and Report preparation as presented below in figure:



4. Methodology

Basically, qualitative data collection techniques were used for the study. The identification of indigenous communities and study area were the key concerns for this assignment. Therefore, the indigenous communities in the RERP working areas that have a unique and rich history of traditional food practices were identified through the consultation with Project team. Mainly the methodologies 1) literature review, 2) interaction with project team and stakeholders, 3) key informants interview 4) focus group discussions and 5) participant observation were used for the study.

4.1 Description of the Methodology:

4.1.1 Literature review: Conducted a comprehensive literature review to gain a better understanding of traditional food practices among indigenous peoples in the study area. This included the review of study reports, and other documents related to indigenous food practices.

4.1.2 Interaction with project team and stakeholders: Conducted formal/informal meetings, discussions and functional coordination with project team and stakeholders during study period to addition the contextual understanding, preparatory work and field work as well as feedback collection related to the study.

4.1.3 In-depth key informants' interviews: Developed a semi structured questionnaire and conduct in-depth interviews with key informants, including community leaders, elders, and individuals who have knowledge and experience in traditional food practices from the interview to gain a deeper understanding of traditional food practices, food culture, and their importance in the community.

4.1.4 Focus group discussions: Organized focus group discussions with indigenous community members including youths to gain insights into the social, cultural, and economic aspects as well as the generational skill transformation of traditional food practices.

4.1.5 Participant Observations: Observed traditional food preparation and consumption practices in the communities. Took pictures/videos and wrote up the process of the cooking methods, ingredients, and traditional foods that are consumed.

4.1.6 Data Analysis: The data collected from the in-depth key informant interviews, focus group discussions and participant observations were analyzed using a qualitative data

analysis technique. The income generation activities will be analyzed to identify the most feasible/commercially viable and sustainable options.

4.1.7 Report Preparation: A comprehensive report detailing the findings of the study, including traditional food practices, health benefits, and suggested recommendations for the launch of indigenous food-related income generation activities was prepared. These recommendations will take into account the health benefits and sources of nutrition of the traditional foods, as well as the cultural and environmental context of the communities. The draft report was submitted to the Project team for feedback. After incorporating the feedback and suggestions, the report was finalized and submitted to the project.

4.2 Activity-wise methodologies

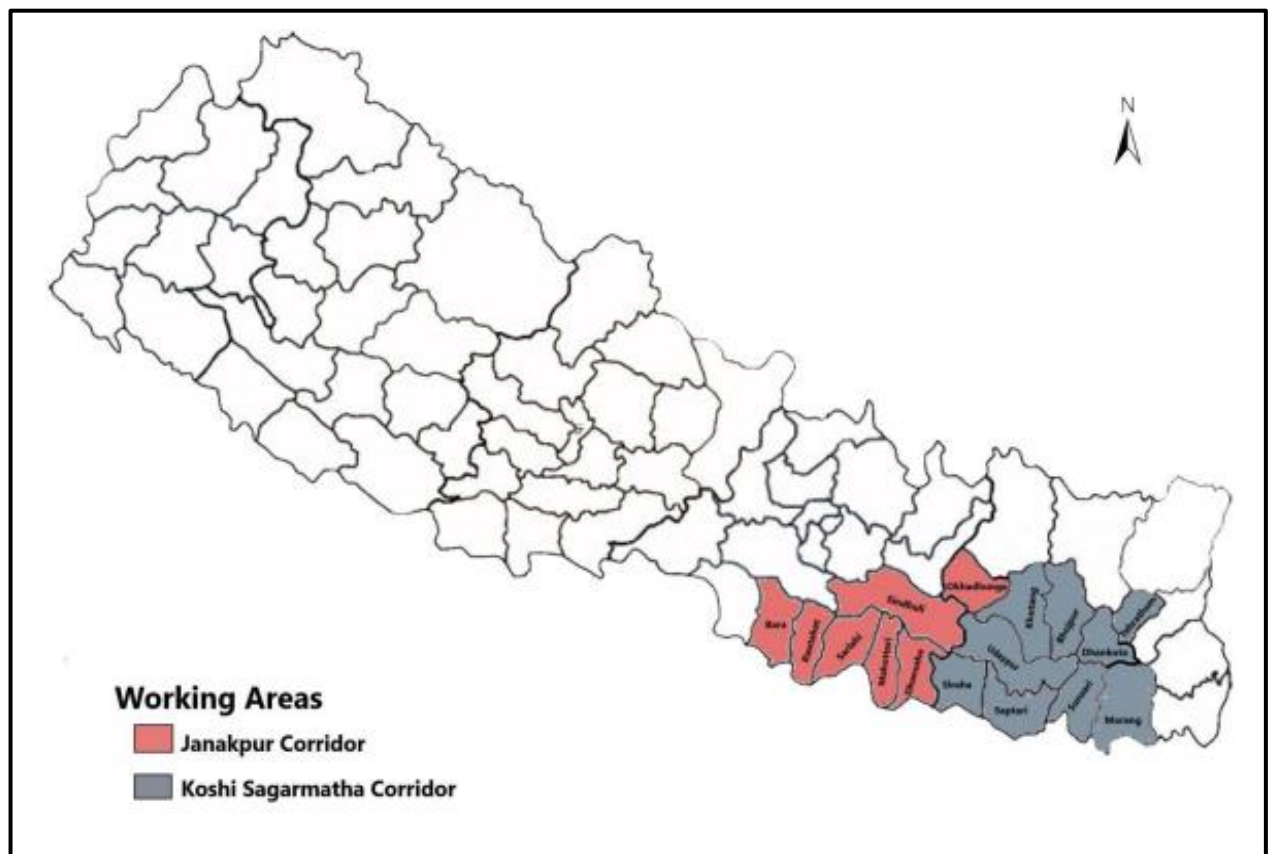
The activities wise methodologies and outputs are explained in the following table:

Activities	Methodology	Outputs
Preparatory Works	Comprehensive literature Review Interaction with the RERP Officials	Inception Report with the detailed methodology of the assignment, checklist/ form/ formats for KII/ FGD and the identification of three indigenous communities for the study in the RERP area.
Conduction of field work	Interaction with project staff Conducted in-depth KII and FGDs; Participant observation	Participants for field work (FDG/KII) from the selected indigenous groups was identified; Collected the required data/information;
Data analysis and final report preparation	Data tabulation/analysis Report write-up Presentation/Sharing findings and feedback collection	Final Report with recommendations after incorporating RERP's feedback.

5. About the RERP and its working area

The Rural Enterprises and Remittances Project (RERP) "SAMRIDDHI" is a seven-year project jointly initiated by Government of Nepal and the International Fund for Agricultural Development (IFAD) that implemented from December 2015 to December 2022 with a total funding of approximately USD 23.23 million. However, the project is being extended until the end of 2023 by the effect of COVID-19. The Project is executed by the Ministry of Industry, Commerce and Supplies with implementing partners of Argo Enterprise Centre (AEC) of Federation of Nepalese Chamber of Commerce and Industries (FNCCI), HELVETAS and

selected financial institutions working within the project area. The project aims to reduce poverty with employment-focused and inclusive economic development by providing sustainable sources of income to poor households, migrant families, and returnees through creation of micro, small, and rural medium-sized enterprises as a means of developing local businesses and creating jobs. The project target is a total of 420000 people from 87500 households where 57500 households will be benefitted from Rural Micro, Small and medium Enterprises (RMSEs) and Jobs Promotion; and 30000 households will be benefitted from Technical and vocational skills and job placement (TVET & apprenticeships). The Project covers 16 districts namely— Morang, Sunsari, Saptari, Siraha, Bhojpur, Dhankuta, Khotang, Terhathum, Udayapur, Bara, Dhanusha, Mahottari, Rautahat, Sarlahi, Okhaldhunga and Sindhuli. The geographic area follows a road corridor approach linking districts along the main roads running south to north to facilitate the connection of hill districts to larger markets in Terai. Following map shows the RERP working areas:



Source: Annual Progress Report 2016/17, RERP-SAMRIDDHI

6. Indigenous peoples and Indigenous food practices in Nepal

In Nepal, indigenous peoples are formally defined as Indigenous Nationalities (Adivasi Janajati). According to the National Population and Housing Census 2021, there are 142 castes/ethnicities and 124 mother tongues in Nepal (NSO, 2023). Indigenous people represent for 35.81 per cent of the country's total population (CBS, 2011). However, some of the indigenous nationalities listed in NPHC 2011 is changed in terms of name in NPHC 2021. Altogether 59 Indigenous Nationalities have been legally recognized by the Nepal government under the National Foundation for Development of Indigenous Nationalities (NFDIN) Act-2002. The NFDIN Act-2002 defines “Adivasi/Janajati” (indigenous nationalities) means a tribe or community as mentioned in the Schedule having their own mother tongues, traditional rites and customs, distinct cultural identity, distinct social structure and written or unwritten history. During the establishment of NFDIN which was approved by the parliament in 2002, the government of Nepal identified and listed a total 59 different indigenous nationalities as Adibasi/Janjatis of Nepal. Further, the NFDIN classified those listed 59 indigenous nationalities into 5 categories as follows:

Classification	Janjati groups
Endangered	1) Kusunda, 2) Bankariya, 3) Raute, 4) Sural, 5) Hayu, 6) Raji and 7) Kisan 8) Kusbadiya, 9) Lepcha, 10) Meche (Bodo)
Highly Marginalized	1) Majhi, 2) Siyar, 3) Lhomi, 4) Thudam 5) Dhanuk, 6) Chepang, 7) Satar/Santhal, 8) Thami, 9) Jhangad, 10) Bote, 11) Danuwar, and 12) Baramu
Marginalized	1) Sunuwar, 2) Tharu, 3) Tamang, 4) Bhujel, 5) Kumal, 6) Rajbanshi, 7) Gangai, 8) Dhimal, 9) Bhote, 10) Darai, 11) Pahari, 12) Topke Gola, 13) Tajpuriya, 14) Dolpo, 15) Frin, 16) Larke, 17) Mugali, 18) Lhopa, 19) Dura, and 20) Walung
Disadvantaged	1) Gurung, 2) Magar, 3) Rai, 4) Limbu, 5) Chhaintan, 6) Tangbe, 7) Tingaunle, 8) Baragaunle, 9) Marphali, 10) Sherpa, 11) Yakha, 12) Chhantyal, 13) Jirel, 14) Byansi, and 15) Hyolmo
Advanced	1) Thakali, and 2) Newar

Source: National Foundation for Development of Indigenous Nationalities (NFDIN)

Furthermore, the Ministry of Home Affairs of Nepal was listed 98 Jantati groups (indigenous nationalities) as minority caste groups for the local election purpose (who have less than 0.5% population) by giving the notice in Nepal Rajpatra (Khand 67, Sankhya 2, Nepal Rajpatra Bhag

5, 2074/1/11) where these selected three ethnic groups (Athpahariya, Danuwar and Santhal) for study are also recorded as minority caste groups.

Indigenous food practices in Nepal are imbedded in the traditional knowledge, cultural practices, and biodiversity of various indigenous communities living in the country. In terms of the food consumption, generally, all Nepalese people take Dal, Bhat, Tarkai (Rice, pulses and green vegetables) and Roti in their regular food. However, as distinct cultures, languages, beliefs and food systems, indigenous communities have developed sustainable farming practices, seed-saving traditions, and diverse crop varieties adapted to local agro-ecological conditions. Indigenous Peoples lives with the close relationship between indigenous food systems and biodiversity conservation.

The indigenous people in Nepal live across the country of the total 77 districts – the mountains, hills and the Terai (plains) regions. Majority of them live in remote and rural areas with a subsistence farming system. They are very rich in terms of language, culture, religion, biodiversity, socio-cultural diversity and indigenous knowledge. Their food habit and rituals from birth to death also differ widely from each other even in same caste group in different geographical areas. The cultural and geographic diversity based on ethnicity, soil and climate of Nepal there are the varieties of foods consumed by the people as natural availability on their geographical areas. Indigenous foods are those that are native to each locality, so they vary depending on the locations of their settlement. However there distinguish some similarities as per the different ethnic communities and their cultures.

Nepalese indigenous communities possess deep knowledge of local plants, traditional agricultural practices, seasonal calendars, and food preparation techniques. Their significance in knowledge of food preservation methods, such as sun-drying, fermentation, and smoking, in enhancing food security and extending the shelf life of perishable foods are the crucial to respect and value the traditional food practices of indigenous communities. As they hold valuable knowledge about sustainable and healthy ways of living in harmony with the environment seems essential to transfer new generations for sustainable way of life.

7. Indigenous people and Indigenous food practices in Project area

In the Project area of RERP (Koshi and Madhesh Province), there are several indigenous communities with unique food practices that reflect their cultural heritage and close relationship with the local environment. These communities have developed sustainable food systems over generations, incorporating traditional knowledge, farming techniques, and the use of local resources.

Mainly Rai (10.21%), Yakthung/Limbu (7.81%), Tamang (4.61%), Tharu (4.22%), Magar (3.96%, Rajbanshi 2.58%), Newa/Newar (1.48%), Sherpa (1.42%), and Santhal (1.14%) caste ethnic groups of Koshi Province and Tharu (4.92%), Dhanuk (3.55%), Tamang (2.00%) and Magar (1.07%) caste ethnic groups of Madhesh Province are the prominent indigenous communities that represents more than 1% populations of their province respectively. Other indigenous peoples in the project area are Gurung, Gangai, Dhanuk, Majhi, Dhimal, Sunuwar, Tajpuriya, Danuwar, Yakha, Kumal, Meche, Bote, Thami, Kudukh, Kisan, Kushwadiya, Athpahariya and others as listed indigenous nationalities of Nepal. All ethnic groups separately represent less than one percent population of their province but they all have a rich food culture that revolves around agriculture, animal husbandry, and collecting/gathering of natural foods.

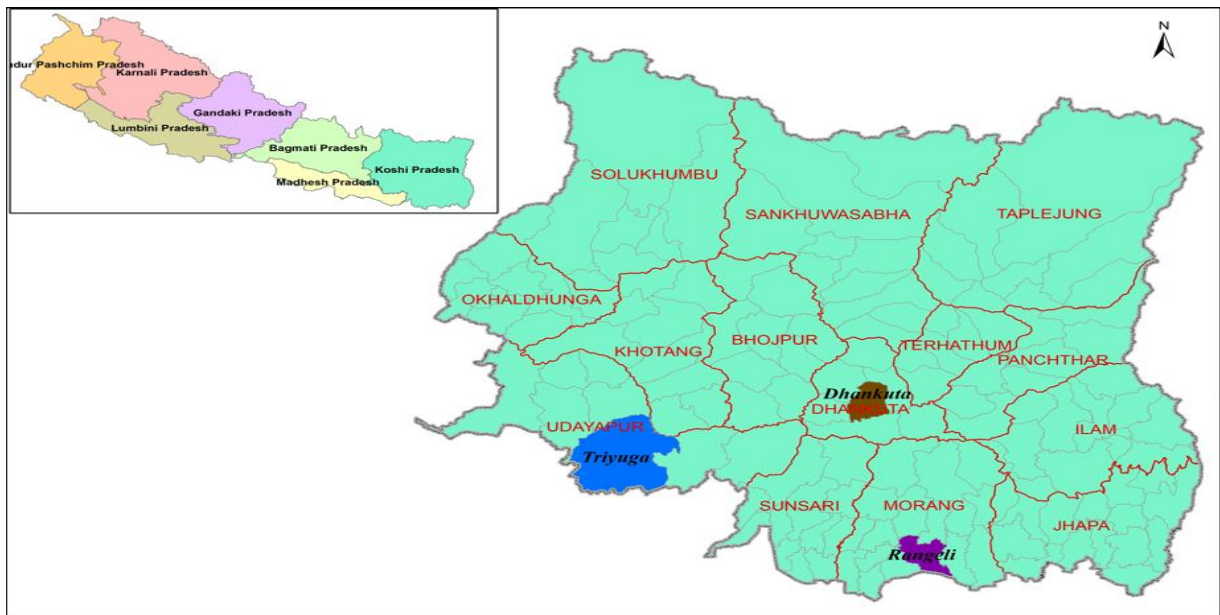
Indigenous communities of the area including Athpahariya, Danuwar and Santhal they rely on crops like rice, maize, millets, pulses, vegetables and tubers, along with hunting, fishing, and foraging for a diverse range of foods. Traditional nutritious dishes, cultural festivals, and food-sharing practices are important aspects of their communities, fostering social cohesion, and preserving their cultural identity. They are not only significant for food production, food security and nutrition but also serve as a vital part of these communities' cultural heritage and way of life

Some of the traditional food practices in indigenous communities in the project areas includes: 1) Paddy Rice and Pulses, Dhido, Rotis (made from finger millet/foxtail millet, buckwheat, wheat, maize), 2) Alcoholic beverages i.e. Jand/chhyang, Nigar, Raksi and Tongba, these beverages play a significant role in their social and cultural gatherings. 3) Fermentation of food and preservation like kinema (fermented soybean), gundruk (fermented leafy greens), and sinki (fermented radish taproot and leaf) are popular and provide essential nutrients. 4) Meat and dairy products: the indigenous communities practices animal husbandry and rears livestock such as cows, buffalos, goats, and chickens. Meat dishes, and dairy products like milk, yogurts, and ghee are integral parts

of their diet. 5) Wild food gathering is also another food source of indigenous people of the project area. They have a deep knowledge of the local forests, shrubs and medicinal plants of their localities which allows them to gather various wild foods. This includes edible mushrooms, bamboo shoots, medicinal herbs, and wild fruits that are used in their food.

8. The study area and selected indigenous communities for the study

Among the 59 indigenous nationalities listed in national level, these three communities were selected as sample site for the study simply due to limited time and resources. Also the some prominent reasons for selecting these sites and communities were: 1) the working areas of RERP/SAMRIDDHI project, 2) still maintains their unique traditional food practices, and 3) at least one community from one geographical region i.e. Hills, Inner-Terai and Terai region were selected and studied on their indigenous food practices. Based upon the discussion with the officials of RERP/SAMRIDDHI project, the three indigenous communities from 3 geographical locations were covered for the study i.e. Santhal/Satar community from Terai- Rangeli Municipality of Morang district; Athpahariya Community from hills- Dhankuta Municipality of Dhankuta district and Danuwar Community from Inner-Terai- Triyuga Municipality of Udaypur district. Following map gives the location of the study areas:



9. Findings

9.1 Aathapahariya community

9.1.1 Introduction of the Athpahariya community

Rai is one amongst the 59 indigenous nationalities of Nepal which is categorized as disadvantaged group. The Athpahariya community has been claimed as distinct ethnic group but national database couldn't recognize previously and listed this ethnic group among those Rai Communities but now, the National Population and Housing Census (NPHC, 2021), recognized this Athpahariya community in a separate group among the 142 caste/ethnic groups of Nepal. The Athpahariya community has their own distinct tradition, culture, linguistic, social system and food practice. The population of Athpahariya is 5,878 (0.02% of the total population of Nepal, NPHC, 2021) in their entire settlement area. They are found mainly in Dhankuta Municipality of Koshi province where RERP/SAMRIDDHI is working with this area and selected this ethnic group for the study of indigenous food practices.

9.1.2 Indigenous and current food practices of Athpahariya community

Athpahariya community mostly eats Dal, Bhat Tarkari (rice along with locally and naturally available vegetables and meat (mostly pig and chicken) in their community as other indigenous peoples of Nepal. According to the discussion conducted with the community, it was found that in present as well as the past days, generally they take meal in four times a day by children (2 times lunch and 2 times snacks) and two times in a day by adults. First meal is around 7-8 am, second meal is around 11-12 pm, third meal is around 2-3 pm, and 4th meal is about 7-8 pm). Adult people generally take Jand/Tongba (locally fermented liquors) with a pickles or varieties of meat for snacks.

In present days, Athpahariya community generally eats Bhat (rice), Dal (Pulses), Tarkari (vegetables)/Meat, and Roti in lunch, and tea, biscuits, noodles, dried corn and soybeans (makai Bhatmas), Jand/Tongba in snacks and most of the time they eat same food as lunch or dinner. But then again, they have distinct food practices as their cultural tradition, and social system. They mostly use local chicken, pig, bores, goat, buffalos etc. for the varieties of meat.

In past days, mainly they ate corn, Suthuni (sweet potatoes), Tarul (Yam), Roti made by Kodo (Millet), Faper (Buckwheat) and Maize, and Jand/Tongba. They usually collected vegetables and

tubers/roots that were found in forest unlike today's generation there was no paddy's rice and it was cooked only during festivals.

9.1.3 Food biodiversity of Athpahariya community

Indigenous peoples are the major groups of the biodiversity protection in the world, including Nepal's indigenous people. As other indigenous peoples of Nepal, Athpahariya communities also have a very rich in their indigenous tacit knowledge, skills, technology on their traditional food practices, land use and agricultural production, food preparation including livestock rearing practices and local resource mobilization. Although in recent years, generally they used rice, lentil, seasonal vegetables/fruits and meat (Dal Bhat Tarkari and Masu Bhat) in daily food consumption but they have varieties of unique food practices as per their rituals and festivals that they preserved from years to years.

According to the in-depth focus group discussions and the key informants' interview in the Athpahariya community, it found the following major festivals/rituals and the foods that they used in those festivals and rituals:

Table-1: Major festivals/rituals and the unique foods used for those rituals

S/N	Major Festivals & rituals	Foods used in those festivals/ rituals	Major crops and ingredients
Major Festivals			
1.	Mangsire	Sipsa Tangpechha Jad and raks Fruits Sel roti Suthuni (sweet potato) Kandamul Ukkhu	Pig meat Buffalo meat Kodo Seasonal fruits Paddy Sweet potato Yam Sugarcane
2.	Baishakhe	Sipsa Jand and raks	Pig meat Kodo
3.	Bhadaure	Sipsa	Pig meat
Major Rituals			
1.	Nwaran (name giving ceremony)	<ul style="list-style-type: none"> Rice and local chicken Chaulani Maad (a type of soup fried in oil that made from rice washed water, jwano and ginger) 	Paddy Paddy, ginger, jwano
2.	Pasni (Rice feeding at 1 st time)	<ul style="list-style-type: none"> Rice and local chicken to mother and guest 	Paddy

		<ul style="list-style-type: none"> Also jand and raksi to guest Feed wet-rice and lentils or only salt and wet-rice to child 	Millet Paddy, lentils, Salt
3.	Hark Badhai (Birth celebration of 1 st baby boy not for girls)	<ul style="list-style-type: none"> Tite, rice and chicken meat Rice and Buff meat Jand/Raksi 	Paddy and Chicken Paddy and bufflos Kodo (Millet)
4.	Chhewar (1 st time (hair cutting of baby))	<ul style="list-style-type: none"> Sel roti Tite, rice and chicken meat Jand/Raksi 	Paddy Paddy and chicken
5.	Marriage ceremony	<ul style="list-style-type: none"> Rice and meat (pork, buff, mutton, chicken) Pickle of Filinge and Gundruk Jand/Raksi Now also adopted Pulow (Casserole) 	Paddy and domestic animals Raddish and Filinge Millet Paddy
6.	Death rituals	<ul style="list-style-type: none"> Previously they used Suthuni, Tarul, puff corn, uncooked wet-rice with raw sugar to offer to the guest who came for the death ritual in the 1st day but now it uses biscuits, chyura (beaten rice), juice (fruti) and coca cola. Chaulani Maad without salt 	White roots, sweet potatos, Maize, Paddy, sugar cane Paddy and ginger
7	Dukha Baune (a death ritual that passing people worshiped in Mangsire festival)	<ul style="list-style-type: none"> Jand raksi, pickles Rice and meat, Vegetables, fruits, 	Millet, Paddy, domestic animals, Seasonal vegetables and fruits

Source: Group discussion and KII with Athpahariya community at Dhankuta

During the group discussions focusing on 1) their indigenous and current practices of daily meal consumption, 2) major festivals, and unique foods for those festivals and 3) the sustainable management of the major crops that they used for preparing foods are mentioned below:

Table-2: Food Bio diversity of Athpahariya community

Food group	Local name	Common name	Management Source	Food security ranking (1-3)	Test ranking (1-3)
Grins and white roots	Chama	Paddy-rice	Farming/buying	2	3
	Chalepcha	Wheat- Roti	Farming/buying	3	3
	Makai	Corn/Maize	Farming	3	2
	Kodo	Millet	Farming	3	3
	Fapar	Buckwheat	Farming	1	2
	Tarul (simal, ghar, patale, ban tarul	Yam	Farming/forest	2	3
	Kusume)				

	Suthuni	Sweet potato	Farming	2	3
	Aalu	Potato	Farming/Buying	2	3
	Jand		Farming	2	3
Pulses (beans, peas, lentils)	Mas dal		Farming	3	3
	Masuro		Buying	1	3
	Bodi /Simi	Beans	Farming	3	3
	Bhatmas	Soybeans	Farming	3	3
Nuts and seeds	Badam	Peanuts	Buying	2	3
	Tori/Sarsyu	Mustard	Buying	1	3
Dairy and milk production	Dudh	Milk	Farming/buying	2	2
	Dahi	Curd	Farming/buying	2	2
	Ghiu	Ghee	Farming/buying	2	2
Meat, Poultry and Fish	Kukhura	Chicken	Farming	3	3
	Parewa	Pigeon	„	2	3
	Sungur	Pig	„	3	3
	Khasi boka	Goat	„	3	3
	Ranga	Buffalo	„	3	3
	Kalij	Pheasant	Hunting	2	3
	Kharayo	Rabbit	„	2	3
	Mirga	Deer	„	1	3
Eggs	Kukhura	Chicken	Farming	2	3
Dark green leafy Vegetables	Rayo		Farming	3	3
	Tori	Mustard	Farming	3	3
	Palung				
	Farsi/Eskus Munta		Farming	3	3
	Latte				
	Bethe				
	Niuro		River & Forest	3	3
Vitamin A rich Fruits and vegetables	Suntala	Orange	Farming/buying	3	3
	Junar		Farming/buying	3	3
	Aap	Mango	Buying	1	3
	Kakra	Cucumber	Farming	3	3
	Gajar	Carrot	Farming	2	3
	Farsi	Pumpkin	Farming	3	3
	Kera	Banana	Farming/buying	2	3
Other vegetables	Tamater	Tomato	Farming/buying	2	3
	Mula	Radish	Farming	3	3
	Simi/Bodi Ghiraula		Farming	3	3
	Lauka		Farming	3	3
	Karela		Farming	3	2
	Eskus		Farming	3	2
	Gatta		Farming	3	3
	Gande		Farming	3	3
	Gundruk		Farming/river	2	3
	Kinima		Home made	3	3
			Homemade	3	3
Other Fruits	Naspati		Farming/buying	2	3
	Katar	Jackfruit	Farming/buying	2	3

	Amba	Guava	Farming/buying	2	3
	Litchi		Farming/buying	2	3

Source: Group discussion and KII with Athpahariya community at Dhankuta.

Note: Marking 1 is represents the lowest rank and 3 represents highest rank.

Athpahariya community was found very rich in terms of food varieties as per their consumption of food items around the year. However, they generally they use about four to five food items in a day, meat consumption twice a week and they take very less consumption of eggs and fish as well as the milk and dairy products whereas adults take Jand every day and Rakshi frequently. The cultivation practice from the sustainable management perspectives of food biodiversity, local/indigenous species are getting lost and replaced by hybrids except culturally valued some species like Ghaiya paddy is conserving now at least in a very small scale, and Kodo (figure millet), local chicken and pig farming also have to do from the cultural perspective.

9.1.4 Knowledge and interest on indigenous foods, production and preparation to youths (new generations)

Young generations of Athpahariya communities have interest and knowledge about the indigenous foods to some extent, and majority of them who involved in the discussions were know the name of major foods, name of crops for making those foods, suitable land for cultivation, and cultivation and harvesting months but they lack knowledge about food preparation and preservation process, name of crop species, weeding times, medicinal uses of crops/foods, and the nutritional and cultural values of those crops/foods. It was found that the food Dal Bhat Tarkari (Rice, Pulses and vegetables) preparation process is generally known by all but the knowledge of indigenous unique food preparation process of Athpahariya community was found some lacks in young generations. Indigenous foods are interlinked with the sustainable management of crops and agricultural works, mostly the young generation is getting influenced by surrounding environment and their exposure influenced towards junk foods, they do not have leisure time for agricultural work due to their study. According to the Athpahariya communities of age above 30 thinks that new generation has less interest in knowing their indigenous food production, and its preparation because of the young and educated people prefer to do some other types of job (i.e. foreign employment, British army, government job etc.) rather than indigenous variety related agricultural production work and gives last priority to indigenous agricultural work.

9.1.5 Knowledge acquisition trend about indigenous foods production and preparation by Gender

Food preparation, washing and cleaning, take care of children and elders, take care of domestic animals at home are mostly known as women's task in Nepali society. As the other Nepali societies, Athpahariya Indigenous people also have these informal norms that these roles have to do by women. Indigenous women, especially Athpahariya women are also performing these roles and responsibilities for long in their very early ages with these mindsets. Simply they gain the experience about who does what, hence Athpahariya women have the knowledge acquisition trend about indigenous food production and preparation was found higher than men. Athpahariya women are very interested and rich in indigenous tacit knowledge, skills, technology and practices in their food preparation, land use and food production including livestock rearing and local resource mobilization.

Although mostly both the boys and girls of young generations have getting influenced by surrounding environment and less interested in indigenous food production and preparation but it is raising awareness about the preservation of indigenous culture and traditions in recent years, and girls are seems more seriously acquiring traditional knowledge than boys. According to Bhairav Athpahariya, his granddaughter is more interested in knowing, eating and cooking local foods of their community than his grandson. At present she lives in Kathmandu but request them to send some indigenous/local food from home at Dhankuta. He also adds that to preserve this culture and local foods parents must teach about these food traditions to their children (both boys and girls) so that culture can be passed on to new generation.

9.1.6 Major indigenous foods and preparation processes of Athpahariya community

Sipsa (pork), Chama (Rice), Tangpechha (Buff), Lunggancha, Chaleppa (Kodo ko roti), Dindo (Kodo, makai, Fapar), Satu, Jand/Raksi, Sel roti, Fekla, Fyakulik, Ghaiya rice, Kinama, Gundruk, Pulses (Kalo mas, Musuro, Simi), Junelo, local fruits (Katahar/mango/Lichi), local vegetables (Koiralo flower, Tanki leaves, Sajiwan, Mushroom, Sisno, Allo, Niguro, Gande, Tama), Crabs, Kiya (Kaguno), Suthuni (sweet potato), Kandamul/Tarul (Yam), Ukkhu (sugar cane), Local chicken, Tite, Maad etc. are the major indigenous foods of Athpahariya community. The preparation processes of some indigenous foods of them are presented in annex-1.

9.2 Danuwar community

9.2.1 Introduction of the Danuwar community

The Danuwar community also is an indigenous nationality of Nepal that has a separate cultural, tradition, linguistic, and social system. Among the 59 listed Adivasi/Janajatis by the Government of Nepal, Danuwar, is belongs to the group of the most marginalized Adivasi / Janajati. The population of Danuwar is 82,784 (0.17% of the total population of Nepal, (NPHC, 2021) . They found in about 35 districts of Nepal including Terai, Inner-Terai and Hills. Although majority of them intermingled with Nepali language and cultures with other ethnic groups around territorial area but the Danuwar community have still remains some distinct cultural, tradition, linguistic, and social system which we studied in Udayapur district in RERP working area. According to the National Population and Housing Census 2021, there is recognized another caste ethnic group i.e. Done which is previously called Rai Dauwar. The total population of Done is 2125, and they also have separate Done language but culture and food prtices are as similar as danuwar community.

9.2.2 Indigenous and current food practices of Danuwar community

Danuwar community mostly eats rice, pulses, vegetables and meat/fish in their community as regular daily foods as other peoples of Nepal. According to the discussion conducted with the community and the KII, it was found that in past days as well as in the present, generally they had taken meal in three times a day. The time of the meal is slightly different in present and past days. In the past they used to take first meal at around 7/8 am that called *Kalau* which is now taken at around 9/10 am. The second meal was taken at around 11 am which is now taken at around 2 pm as snacks, third meal was around 8/9 pm which is also the same time now). In the Danuwar community they have very special practice to take varieties of pickles made from natural local wild vegetable species i.e. Barmi, Totela, Banana, Bunga, Gundruk, Pina, Marangi, Sokla, Tama, Kakra, Kapra, and aquatic species like Sidra and Gangata which are generally consumed in first and third (Lunch and dinner) meal and sometimes in second meal too.

Besides the Dal (Pulses), Bhat (rice), Tarkari (vegetables) and meat/fish in lunch and dinner, they eat roti, tea, biscuits, noodles, boild/dried/puff corn and soybeans (usineko, poleko, bhuteko Makai and Bhatmas), Jand, pickles, gundruk, fried rice (residual from morning meal) in snacks. They used local chicken, pig, goat, buffalo, specially hunting wildlife/birds and aquatic animals (fish, crabs, snails) etc. for the meat.

9.2.3 Food biodiversity of Danuwar community

Danuwar communities have a very diversified food consumption pattern. Although in recent years, generally they used rice, lentil, seasonal vegetables/fruits and meat (Dal Bhat Tarkari and Masu Bhat) in daily food consumption, they have a very diverse food practices as per their rituals and festivals. According to in depth focus group discussions and the key informants' interview in the Danuwar community, it was found that they are very rich in the varieties of unique foods that they preserved from years to years. The information given in the following table 3 is about the major festivals/rituals and the foods that they used in those festivals and rituals that describes their indigenous /traditional food practices, food production, food preparation including livestock management practices that they are preserving:

Table-3: Major festivals/rituals of Danuwar community and the unique foods used for those rituals

S/N	Major Festivals/ rituals	Foods used in those festivals/ rituals	Major crops and ingredients
Major Festivals			
1.	Dashain	Rice and Buff meat Buff sukuti (dried buff meat) Chicken meat, Pork, Fish Chiura (flatten rice) Andi jand (locally fermented liquors) Pickle & vegetables	Paddy Paddy Paddy (Andi) Barmi
2.	Tihar	Selroti Patre Mithai Anarasa, Arsa Meat (Buff, Pork, chicken) Seeds and beans Anda (egg) Pickles (Sokno, Kakra etc.) Meat mixed Kubhindo vegetable	Paddy Wheat, Mastard oil/ghee Paddy Chana, Matar Kubhindo
3.	Nwagi	Chicken meat and rice Nwagi (uncooked wet-rice, sakhar, kapur (camphor), 12-spices, flatten rice), Kheer (rice-pudding)	Newly harvested paddy rice
4.	Maghe sangrati	Bagiya Chichauri Tarul, Simal tarul (yam) Sakharkhanda (sweet potato) Til ko laddu Jerry (sweet)	Paddy Paddy- Andi Yam Sweet potato Til

		Meat (Duck, Pigeon, Goat)	
5.	Chaite Dashain	Meat and rice	
6.	Ashar 15	Curd, flatten rice, katar, mango	Paddy, Katahar, Mango
7.	Shrawan Sangrati	Rice pudding (Porridge), meat, rice, pickles and vegetables	Paddy, milk, seasonal vegetables
Major Rituals			
1.	Nwaran (Name giving ceremony) For mother	For guest: Local chicken, Fado rice Andi ko jand (locally fermented liquors) Local chicken, Ghee, Fado rice, mustard oil, Andi jand	Paddy flour and meat mix Paddy (Andi)
2.	Pasni (rice feeding)	Local chicken meat and rice (for all guest and family members) Cooked wet-rice and kalejo to child	Paddy Paddy
3.	Chhewar	Meat (Buff, mutton, chicken, pork) Selroti, Chiura (flatten rice), Rice Nigar, Raksi Bhutan, Achar	Paddy Paddy
4.	Bihe (Marrage)	Selroti, Chiura, Meat and Rice Nigar, Raksi Vegetables and Pickles	Paddy Paddy Seasonal and wild vegetables
5.	Larbare (at 1 st year of married daughter comes with varieties of food items as a gift on the paddy cultivation day)	Bagiya Pickles (at least 20 types of Achar) Andi jand Farsi ko munta Gedagudi (seeds) Chichinda Meat (Chicken, Pork, mutton, fish)	Paddy Sokna, Totela, Barmi, Tutumi etc. Paddy Pumpkin Chana, Matar etc. Chichinda
6.	Aitabare (worship for the crops and lands)	Mixed Rice (Rice and Chicken mixed)	Paddy
7.	Sansare (Worship for family members)	Mixed Rice (Rice and Chicken mixed)	Paddy
8.	Bhagauti (Worship for animals and birds)	Goat meat and rice (restricted women to participate in this worship place)	Paddy
9.	Death rituals	Haandi roti, Jand, Nigar, Achar Latte, spinach and ghee	Paddy, green vegetables

Source: group discussion and KII with Danuwar community at Rajabas, Udayapur.

Based on their daily meal consumption, festival- wise unique foods preparation practice and the management of the major crops, they used for preparing foods are mentioned below that shows the food biodiversity of Danuwar community:

Table-4: Food Bio diversity of Danuwar community

Food group	Local name	Common name	Management source	Food security ranking (1-3)	Taste ranking (1-3)
Grains and white roots	Chicauri	Anadi rice	Farming	2	3
	Bhat	Rice	Farming and Buying	2	3
	Roti	Roti	Farming	3	2
	Satu	Satu (Made by mixed grains)	Farming	3	2
	Tarul	Yam	Farming and Buying	2	2
	Sakharkhand	Sweet potato	Farming and Buying	2	3
	Jand	Jand (Made by Paddy)	Farming and Buying	2	3
	Makai	Maize	Farming	3	2
Pulses	Chana	Lentils	Farming and Buying	2	3
	Musuri		Farming	3	3
	Matar		Farming and Buying	2	3
	Rahar		Farming and Buying	2	3
	Gahat		Farming	3	3
	Mas dal		Farming	3	3
Nuts and seeds	Tori	Mustard	Farming and Buying	2	3
	Badam	Peanuts	Buying	1	3
	Aalas		Farming	3	3
Dairy and milk production	Dudh	Milk	Mainly buying	1	2
	Dahi	Yogurt		1	2
	Ghyu	Ghee		1	2
Meat, poultry and fish	Local Kukhura	Local Chicken	Domestication and buying	3	3
	Sungur/Bangur	Pig		3	3
	Khasi	Goat	„	3	3
	Hans	Duck	„	3	3
	Fish	Fish	River and Paddy field	2	3
	Sidra	Dried Fish	„	2	3
	Gangato	Crab	„	2	3
	Ghonggi	Snails	„	2	3
Eggs	Hans	Duck's eggs	Domestication and buying	2	3
	Kukhura	Chicken's eggs		2	3
Dark green leafy vegetables	Mula	Radish	Farming	3	3
	Tori	Mustard		3	3
	Rayo			3	3
	Latte			3	3
Vitamin A rich fruits and vegetables	Farsi	Pumpkin	Farming	3	3
	Mewa	Papaya	Farming	3	3
	Gajar	Carrot	Farming and Buying	2	3
	Aanp	Mango	Farming	3	3
	Kera	Banana	Farming and Buying	2	3
	Tamatar	Tomato	Farming and Buying	2	3
Other vegetables	Karela	Bitter-gourd	Farming and buying	2	2
	Simi/bodi	Beans	Farming and buying	2	3
	Lauka,	Gourd	Farming	3	3
	Ghiraula		Farming	3	3
	Bungga		Farming	2	3

	Sokna		farming	3	3
	Barmi,		forest and Farming	2	3
	Totela,Tutumi		forest	2	3
	Amile, Maijalu		Forest/Agri-field	2	3
	Fokandi chyaw	Wild mushroom	Forest/Agri-field	2	3
	Pina, Gundruk	Mustard	Farming	3	3
Other fruits	Suntala	Orange	Buying	1	3
	Angur	Grapes	„	1	3
	Naspati	Naspati	„	1	2
	Syau	Apple	„	1	3
	Anar	Pomegranate	„	1	3
	Kakra	Cucumber	Farming and buying	3	3
	Katahar	Jackfruit	„	3	3

Source: Group discussion and KII with Danuwar community at Rajabas, Udayapur.

Note: Marking 1 is represents the lowest rank and 3 represents highest rank.

Dnuwar community was found very rich in terms of food varieties as per their consumption of food items around the year. However, they generally use about four to five food items in a day, meat consumes once a week and they consume fish and crab (Gangata) even daily in rainy season. The practice of consuming eggs, milk and dairy products is very less whereas adults take Jand every day and Nigar/Raksi also frequently consumed. The cultivation practice from the sustainable management perspectives of food biodiversity, they realized that local/indigenous species are getting lost. So, they are conserving Andi (a local species of paddy) in collaboration with Triyuga Municipality and Nepal Danuwar Samaj by distributing Andi seeds and cultivation support to farmer groups, small sized Handi (clay pot) distribution to local entrepreneurs for Nigar preparation and preparing a short cultural song as documentary of Danuwar community with includes food practices. They also individually started the cultivation practice of Barmi, Totela, Tutumi, Maijal and other indigenous wild plants nearby houses. There is also functioning a Danuwar Samaj Sudhar Mahila Sangh central committee and the committee sometimes shows the traditional food of Danuwar during exhibitions.

9.2.4 Knowledge and interest on indigenous foods, production and preparation to youths (new generations)

The young generation of Danuwar community shows the interest in knowing and cooking indigenous foods. However, young generation have less knowledge about indigenous food production and preparation processes because of majority of young people have engaged in school/college and other outside employments, they have limited time for produce and learn indigenous food as well as the educated people have the options to choice various jobs rather

than agricultural production, the exposure of new tastes are found in market so, sometimes for new taste wants to eat outside food, and also local foods are not available in market to buy and eat as their requirement.

9.2.5 Knowledge acquisition trend about indigenous foods, production and preparation by Gender

Although, both men and women have the knowledge of their indigenous food practices and food preparation techniques in Danuwar community. However, women have more knowledge and knowledge acquisition trend about indigenous food preparation because of women in Danuwar community have the major responsibilities of food preparation and household chores as other Nepalese people. These works are mostly done by women from their early ages either for helping to mother or tasks solely given to them as informal norms by the family, they gain the knowledge of food preparation and production with learning by doing. It is also found that daughters are more into learning attitudes about local foods as they are very responsible to nature. Danuwar women have not only the higher knowledge and higher knowledge acquisition trend of indigenous food preparation than men but they also have the more knowledge on land use, food production, livestock rearing and management including other local resource mobilization and management.

The existing social norms demand boys are mostly to doing income related tasks outside the home and the food preparation, washing, cleaning types of domestic chores at home are mostly are known as women's task. As socially constructed norms of labor division, men are hesitating to prepare food and other household chores which they restricted to learn more about indigenous food preparation work too.

9.2.6 Major indigenous foods of Danuwar community and its preparation processes

Bagiya, Chichauri, Dal Bhat Tarkari (Rice, Pulses and vegetables), Andi Jand and Nigar (locally fermented liquors), Pickles (Sokno, Kakra, Barmi, Tutumi, Totela, Sidra, Gangata, Gundruk, Banana, Bungga, Marangi, Pina, Tama, Kapra, Tanki), Selroti Patre Mithai, Anarasa, Arsa, Fish's Pusan, Fando, Handi roti, Fried Corn and Soybean, Tarul, Simal tarul (yam) Sakh, arkhandra (sweet potato), Jerry (sweet), Meat (Buff, Pork, Chicken, Duck, Pigeon, Goat), Fish, crabs, snails, meat mixed Kubhindo vegetable etc. are the major indigenous foods of Danuwar community. The preparation processes of some indigenous foods of Danuwar community are described in annex-2.

9.3 Santhal Community

9.3.1 Introduction of the Santhal Community

The Santhal community is one of those 59 indigenous nationalities and the 98 minority caste groups of Nepal that have a unique cultural, traditional, linguistic, and social system. This community is classified as a Highly Marginalized indigenous nationality in Nepal from NFDIN's classification. According to the National Population and Housing Census (NPHC) of 2021, the population of Santhal is 57,310 (0.2% of the total population of Nepal) in Nepal. Santhal communities are especially found in Jhapa, Morang and Sunsari districts. In Morang, they live in Urlabari, Rangeli and other adjoined areas with Jhapa district. In Sunsari, they are found in Inaruwa and Itahari. The major language spoken by them is Santhali. The focus group discussions and KII was conducted in Rangeli of Morang district within the RERP/SAMRIDDHI working area for this study of indigenous food practices.

9.3.2 Indigenous and current food practices of Santhal/Satar Community

Santhal/Satar communities mostly eat rice along with locally available vegetables and meat/fish in their community. According to the discussion conducted with the community, it was found that in past days, generally they had taken meal in a three times a day by children and two times a day by adults (first meal: around 7-8 am, second meal: around 12-1 pm, and third meal: around 7-8 pm). During the first meal, they have the practice to take Dal (lentil), Bhat (rice), Tarkari (vegetables) in addition with meat as per the availability. They used local chicken, pig, goat, duck, pigeon, mouse, rabbit, bore, sheep, birds (ban kukhura, jhilla, dhukur), and fish, crabs, snails (ghongi) etc. for the meat. Of the course of second meal, they had taken sometimes Dal/Bhat (rice & lentil) or sometimes roti/chapatis, puri, bhuja (puffed rice), chiura (bitten rice) etc., for the period of third meal, they had had the practice to consume the same types of meal as first meal.

In the current days also generally, they had taken meal in three times a day by children and two times a day by adults with the rice and pulses of major food. However, the local varieties of cereal crops and vegetables were produced in previous days but now it is replaced by hybrid varieties and food item of the second meal is also substituted with tea and market available cuisine (like noodles, biscuits, sweets etc.). Previously they had the high practice of wildlife hunting for the meat that also remains a bit in current practice but due to the forest degradation,

unavailability of wildlife and the legal boundary of wildlife hunting it are collapsing. However small animals like, rabbit, mouse, squirrel, birds hunting is practicing now as well.

In the past as well as in the present time the rich people eat more varieties and three times a day whereas poor Santhals eat just two times a day with less variety and also by reheating the remaining foods. Poor Santhals also eat rice just with salt and chili when they have nothing to eat in their house. Young generation in both current and the past days eat three times a day.

9.3.3 Food biodiversity of Santhal/Satar Community

Indigenous Santhal peoples, especially Santhal women, are very prosperous in indigenous tacit knowledge, skills, technology and practices in their land use, food production, and food preparation including livestock rearing and local resource mobilization as other indigenous peoples of Nepal and the world as well. Although generally they used rice, pulses, seasonal vegetables/fruits and meat (Dal Bhat Tarkari and Masu Bhat) in daily food consumption but they have varieties and unique food practices as per their rituals and festivals that they preserved from years to years. According to the in-depth focus group discussions and the key informants' interview in the community, it found the following major festivals/rituals and the foods that they used in those festivals and rituals:

Table-5: Major festivals/rituals of Santal community and the unique foods used for those rituals

S/N	Major Festivals & rituals	Foods used in those festivals/ rituals	Major crops and ingredients for making those foods
Major Festivals			
1.	Sorahi (New Year festival of Santhal community)	1. Suda dhaka 2. Jil daka 3. Handi/Paura (Jand/Raksi) 4. Sunam pitha 5. Jil utu dhaka 6. Dumbuk 7. Bagiya 8. Sindra Jil (Sikari masu)	Paddy, (rice, meat, oil, spices) Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha Paddy and wheat All eatable aquatics (fish, crabs etc.) Paddy Sugar (rice flour, sakhar/sugar) Paddy (rice flour) Hunting animals (Rabbit, mouse, fox, bore)
2.	Baha (celebrates in the day of Holi)	1. Suda dhaka 2. Kachauri 3. Sunam pitha 4. Jil dhaka 5. Handi/Paura	Paddy, (rice, meat, oil, spices), Gram flour and food color Paddy and wheat Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha
3.	Adra (Celebrates in the month of	1. Suda dhaka 2. Sunum pitha	Paddy, (rice, meat, oil, spices) Paddy sugar cane

	Asadh, before the paddy cultivation)	3. Jil dhaka 4. Hndi/pauro	Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha
6.	Chhata Pata (celebrates in the months of Bhadra and Baisakh)	1. Available foods in local market (Hatiya) 2. Sweets 3. Handi pauro (jand/raksi)	Samosa, Jeri, Bhuja, Maccha/Masu, Pakauda, Sweets etc. Wheat and rice flour, sugar, ghee or oil Paddy, wheat, Maize and Marcha
7.	Karam (celebrates in Mansir and Poush on 3-4 years duration & join all villagers)	1. Puffed rice (bhuja) 2. Fruits 3. Sweets 4. Kheer (Rice-Pudding) 5. Handi pauro	Paddy Seasonal fruits Wheat and rice flour, sugar, ghee or oil Paddy and milk Paddy, wheat, Maize and Marcha
8.	Hariyad parav (Celebrates in the month of Bhadra)	1. Sudha dhaka 2. Jil dhaka 3. Handi pauro	Paddy, (rice, meat, oil, spices) Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha
9.	Magh puja (Celebrates in the month of Magh)	1. Sudha dhaka 2. Jil dhaka 3. Handi pauro	Paddy, (rice, meat, oil, spices) Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha
10.	Nawai parav (Celebrates in the month of Asoj/ Kartik- worship of harvested 1 st new crops of that year)	1. Sudha dhaka 2. Jil dhaka 3. Handi pauro	Paddy, (rice, meat, oil, spices) Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha

Major Rituals

1.	Nimdaumandi (Nwaran- name giving)	1. Nimdaumandi 2. Handi/Pauro 3. Dal/rice, green vegetables 4. Plain foods with the vegetables of green Saijan leaves) for mother	Paddy and Neem leaves Paddy, wheat, Maize and Marcha Paddy, lentils, seasonal green vegetables Paddy, lentils, Green vegetables of Saijan
2.	Chhewar (after 12 years of birth)	1. Dahi (yogurt) 2. Handi / Pauro 3. Jil dhaka 4. Bitten rice	Cow/ buffalo (Dairy product) Paddy, wheat, Maize and Marcha Paddy (rice, meat- pig, chicken, goat) Paddy
3.	Bapla (Marriage Ceremony)	1. Jil dhaka 2. Handi pauro 3. Bibaha bhoj (pulau, buniya , pudi)	Paddy (rice, meat- pig, chicken, goat) Paddy, wheat, Maize and Marcha Paddy, wheat, sugar (adapted from others of modernization culture)
4.	Gujuk buruwa	1. Plain foods and vegetables 2. Suda dhaka 3. Handi pauro 4. Sweets and yogurt	Paddy, seasonal vegetables, Paddy, (rice, meat, oil, spices) Paddy, wheat, Maize and Marcha Chana/lentils, sugar, oil/ghee, milk, yogurt

Source: group discussion and KII with Santhal community at Rangeli-2 Laxmipur, Morang.

During the group discussions focusing on their indigenous and current practices for the daily meal consumption, festivals and unique foods for those festivals and the sustainable management of the major crops that they used for preparing foods are mentioned below which shows the food biodiversity of Santhal community:

Table-6: Food Bio diversity of Santhal community

Food group	Local name	Common name	Management source	Food security ranking (1-3)	Taste ranking (1-3)
Grains and white roots	Dhaka	Rice	Farming and Buying	2.5	3
	Gahum/Pitha	Roti		2	2
	(Halung)			2	2
	Tarul/Simal Tarul	Yam		1	1
	Sakharkhanda	Sweet potato		1	2
	Githa	Wild yam		1	1
	Makai Dhaka	Maize rice?		3	2
Pulses	Musuri	Lentils	Farming and Buying	2	3
	Khesari			2	3
	Rahar			2	3
	Mung			2	3
	Chana			2	3
	Kalai	Mas dal		2	3
Nuts and seeds	Tudi/Sarsyu	Tori (Mustard)	Farming	3	3
	Badam	Peanuts	Buying	1	2
	Teel		Buying	1	2
Dairy and milk production	Tuwa	Milk/Dudh	Mainly buying	1	2
	Gatam	Ghee		1	2
	Dahi	Yogurt/Dahi		1	2
	Paneer	Paneer		1	2
Meat, poultry and fish	Kukhura	Chicken	Domestication and buying	3	3
	Sungur	Pig		3	3
	Khasi	Goat	„	3	3
	Hans	Duck	„	3	3
	Musa	Mouse	Hunting in	2	3
	Kharayo	Rabbit	agricultural land	1	3
	Bandhadhe/Syal	Jackle	and forest /jungle	1	3
	Bandel	Wild boar	area	1	3
	Jhilla, Dhukur,	Birds	„	1	3
	Ban kukhura	Birds	„	1	3
	Rakai	Birds	„	1	3
	Gangato	Crab	River and Paddy	2	3
	Sipi/ghongi	Snails/Mussels	field	2	3
Eggs	Hans	Duck's eggs	Domestication	2	3
	Kukhura	Chicken's eggs	and buying	3	3
	Ban Chara	Birds' eggs	Collection from forest	1	3

Dark green leafy vegetables	Sajjivan Mula Tori Rayo Khesari Latte Radish Mustard	Farming	3 3 3 3 2 3	3 3 3 3 3 3
Vitamin A rich fruits and vegetables	Farsi Mewa Gajar Aanp Kera	Pumpkin Papaya Carrot Mango Banana	Farming	3 3 2 3 2	2 3 3 3 3
Other vegetables	Karela Simi/bodi Lauka/Ghiraula Praber Nuniya	Bitter-gourd Beans Gourd	Farming	2 2 3 2 1	2 3 3 3 2
Other fruits	Suntala Angur Naspati Syau Anar Kakra Katahar	Orange Grapes Naspati Apple Pomegranate Cucumber Jackfruit	Buying ,, ,, ,, ,, Farming and buying	1 1 1 1 1 3 3	3 3 2 3 3 3 3

Source: Group discussion and KII with Santhal community at Rangeli-2, Laxmipur, Morang.

Note: Marking 1 is represents the lowest rank and 3 represents highest rank.

According to the discussions with the communities, they have plenty of food varieties around the year. However, they generally consume about four types of food in a day, consuming meat once a week, and fish/crabs two to three times or more in a week during the rainy season. It is found that they take very less consumption of eggs and milk and dairy products, although from the recent years, majority of them are practicing to manage milk for infants even buying from neighbors or market place if they have infants in the family. The consumption of mouse, wild life and birds are also decreasing and irregular because of scarcity of availability, forest degradation in Chure Region and the legal restriction to hunting wild life. From the sustainable management perspectives and cultivation practice of food biodiversity, local/indigenous species are getting lost and replaced by hybrids. There seems no any initiation made for the preservation of local species.

9.3.4 Knowledge and interest on indigenous foods, production and preparation to youths (young generations)

Although young generations of Santhal communities have the interest and knowledge about the indigenous foods to some extent, majority of them who involved in the discussions were know the name of major foods, name of crops for making those foods, suitable land for cultivation, and cultivation and harvesting months but they lack of the knowledge about food preparation process, name of crop species, weeding times, medicinal uses of crops/foods, and the nutritional and cultural values of those crops/foods. It was found that the food Dal Bhat Tarkari (Rice, Pulses and vegetables) preparation process is generally known by all but the knowledge of indigenous unique food preparation process of Santhal community was found some lacks in young generations. Indigenous foods are interlinked with the sustainable management of crops and agricultural works, mostly the young generation is getting influenced by surrounding environment for the preference to choose their jobs and consuming foods as their interest. According to the Santhal communities of age above 30 thinks that new generation has less interest in knowing their indigenous food production, and its preparation because of the following reasons:

- The young generation go to school and they have very less time to involve in agricultural works and household chores.
- The young generation get more influence from the surrounding environment by their exposure and inclined towards junk foods.
- Over the time a negative perception has been emerged in the rural areas that the agricultural work is for uneducated people. So, the young and educated people prefer to do something other rather than agricultural work and gives last priority to agricultural work.

9.3.5 Knowledge acquisition trend about indigenous foods, production and preparation by Gender

Mostly Food preparation and household chores are known as women's work in Nepali society that is also found as Santhal communities where women are more responsible on reproductive roles i.e. take care of children and elders, take care of domestic animals, management of kitchen garden, food preparation, washing and cleaning etc. As their major involvement in the household food preparation work, Santhal women have more tacit knowledge about indigenous food

preparation than men. Although in the worshipping rituals where gathering large numbers of community people, men do prepare Sudo Dhaka and other food items but in the households generally prepared by women. Boys and men shy or hesitate to work of food preparation and household chores even they have the knowledge because it has rooted by the informal social norms that the household chores and food preparation is only of women's work. From the group discussion and KII, it was found that Daughters are more into knowing and preparing of foods than that of son because daughters have more helping nature, take responsibilities and bounded by informal social norms that they have to help mothers and elders in household at early age of their life whereas son are more focused in work outside of the house and comparatively less responsible in household chores.

9.3.6 Major indigenous foods and preparation processes

Suda Dhaka, Jil daka, Handi/Paura (Jand/Raksi), Sunam pitha, Jil utu Dhaka, Dumbuk, Bagiya, Sindra Jil (Sikari masu), Nimdaumandi, Kachauri, Sweets, Puffed rice (bhuja), Kheer (Rice-Pudding), Fruits, green vegetables, Saijan leaves, Dahi (yogurt), Bitten rice etc. are the major indigenous foods of Santhal community except rice and lentils. The preparation processes of some indigenous foods of them are presented in annex-3.

10. Knowledge about medicinal and nutritional value of indigenous foods

Overall, the knowledge of the youths as well as that of the adults, about the health benefits, medicinal and nutritional values of indigenous foods, was found very low in all three communities. According to the information obtained from the community groups, as told by their ancestors about the health and cultural benefits of indigenous foods are as follows:

- Fox and Rabbit meat: Good for people to prevent Tuberculosis (TB), control blood pressure and sugar.
- Vegetable of Nuniya (Nuniya leaf): Increase blood in body, good for low pressure people.
- Snails (Ghongi): Good to relief the muscle and orthopedic pain.
- Tite (a dish prepared by chicken fur and rice): Good to relief the body pain.
- Pickle of Barmi: Good to relief the body pain, recover food taste and keep juicy mouth, and control the pressure.
- Pickle of Tutumi: Good to control the blood pressure.

- Pickle of Totela: Good to control the jaundice.
- Pickle of Amile: Good to recover food taste and control the pressure.

Commonly, they know that the foods work as a power booster to body and to eliminates the hunger as well as improve the mental and physical health. Further they give the impression of cultural values of certain crop that needs for their festivals and rituals but mostly these communities seem lacking on the knowledge of health benefit and the nutritional values. So, it has been explored the nutritional value and health benefits through literature review that the studied indigenous communities used. The finding of the literature review on the nutritional value and health benefits of common crops is mentioned in annex-4.

11. Status of commercialization of indigenous foods

All three indigenous communities where the study was conducted were found to be very rich in terms of food biodiversity and their unique food practices. However, they were found to be ignorant about commercialization perspectives of those indigenous foods. According to the discussions with those communities no any cooked indigenous food finds in the market to buy and eat except some local Jand/Nigar and Raksi available in the villages are occasionally sold in a small scale. In all three communities have established Ethnic/Caste based organizations for their rights, rising awareness to remove traditionally harmful practices, and the preservation of their indigenous culture, traditions and good practices. Although, through these ethnic organizations, they are trying to revitalize some indigenous practices like wearing cultural dresses, perform cultural dance/songs and instruments in their special functions but they never made the discussions for the commercialization of indigenous foods in the Athpahariya and Santhal communities. However, Danuwar community has started some discussions and seeking support to preserve the Andi rice from the conservation perspective and formed a homestay group with some training and exposure of homestay management and food preparation in collaboration with Triyuga Municipality, Nepal Tourism board and Provincial Ministry but the homestay is not functional now. During the study, all community participants were realized to have good potentiality for commercialization of their indigenous food as an income generation activities.

12. Indigenous foods that potential for commercialization as an income generation activity

According to the focus group discussions and KII in the study area, found so many indigenous foods which can be selling in the market. The table-7 below shows the indigenous foods that potential for commercialization:

Table-7: Indigenous foods that potential for commercialization

Athpahariya Community	Danuwar Community	Santhal Community
1. Dhido (Millet dhido)	1. Chichauri	1. Dumbuk
2. Kodo (millet flour)	2. Andi ko Nigar	2. Jilpitha
3. Makai (corn flour)	3. Bagiya roti	3. Kachaudi
4. Local chicken items	4. Pickle of Gangata (crabs)	4. Sunam pitho
5. Tite (Made by chicken)	5. Sidra ko achar	5. Sipi (mussels)
6. Pig sekuwa	6. Barmi ko achar	6. Ghongi (snails)
7. Buff sukuti	7. Machha ko pusun	7. Gangato (crabs)
8. Chalepa (Millet Roti)	8. Sokna ko achar	8. Crabs flour
9. Lungapcha	9. Pina ko achar	9. Mouse and rabbit meat
10. Sajiban, Koiralo flower	10. Bunga ko achar	10. Neem sudo
11. Jackfruit	11. Pickles of Totela and Tutumi	11. Tadi
12. Kalo-Mas (Dal)		
13. Fyakulik Chama		

13. Issues for the commercialization of indigenous foods

The major problems of all three studied communities found similar that the indigenous species are getting lost and appear problems in sustainable production and management of indigenous species, lacking on knowledge transfer to young generations about indigenous food preparation, and no any initiation made from commercialization perspective of indigenous foods. The reasons behind the problems in sustainable production of indigenous varieties are: 1) Less production in indigenous/local varieties rather than new variety crops; 2) Imitating others: if any new variety's crop sowing anyone that immediately take by other; 3) Less value/ priority given to local crop varieties in the villages; 4) No any initiation, discussions and support made from government tiers for rising awareness and thinking of sustainable production and management of indigenous varieties (specially Santhal and Athpahariya).

The reasons of the lacking on knowledge transfer to young generations are: 1) Today a lot of options and new taste are found in market that diverting new generations to leave indigenous

foods; 2) Less awareness to youths about the health and cultural benefits of indigenous foods so that they can't motivate and prefer to prepare and eat the indigenous local foods; 3) Time constraint to learn about indigenous foods because of widening their engagement in outside the home/village.

Regarding the reasons of no any initiations made in commercialization of indigenous foods are:

1) They think that they have no any business idea/knowledge and people of the community is not interested in staying market area as well as the selling local foods; 2) There has never been any discussions and thinking out of box regarding the selling of local foods in the market; 3) The understanding of them is, there is a lots of risk for investment and market promotion of indigenous foods whereas they are not that much capable for the investment; 4) Some of the indigenous products needs more investment like Andi jand/nigar of Danuwar community has preservation problem as it cannot be used again if opened once; 5) As losing day by day of indigenous species, there is problems in sustainable supply of indigenous food products as demanded by market; 5) Lack of idea, initiation and knowledge generation for new food preparation and marketing from indigenous species as well as rising awareness and knowledge transformation.

14. Recommendations

- Promote and initiate the dialogs/discussions among indigenous people and stakeholders on the conservation and sustainable management of indigenous/local crop varieties with facilitating the nutritional, medicinal and cultural values including cost benefit analysis of indigenous foods.
- Promote knowledge-sharing events with indigenous peoples, particularly indigenous women and youth, in focusing on the inter-generational indigenous knowledge transfers, and facilitate to address indigenous food consumption practices, food production knowledge, and sustainable management of those indigenous crop varieties.
- Design the projects and small grant support to implement the projects for promoting indigenous food varieties by raising the awareness, and capacity building to indigenous communities and organizations with special focus on youth and women about sustainable production and management of indigenous varieties, and indigenous food preparation processes through government tiers as well as development partners.

- Promote more research programs on indigenous peoples' knowledge related to indigenous food practices, production techniques and preparation processes and documentation of those initiatives for wider sharing and inter-generational transfer.
- Capacity building on business management knowledge, cookery, hospitality and marketing idea as well as operating homestay to indigenous communities and support their business plan as indigenous food related income generation activities.
- Promote the sharing culture within communities and household members, and older generation should teach and motivate the younger ones to make, eat and documentation of the tacit knowledge on indigenous food preparation.
- Review and make discussions on the policy provisions i.e. “The Right to Food and Food Sovereignty Act, 2075 (2018)” and its implementation status at the National, Provincial and Local levels amongst indigenous community, indigenous people’s organizations, governments officials and development projects for addressing and ensuring the rights on the indigenous foods of indigenous peoples.

15. Annexes

Annex-1: Major indigenous foods of Athpahariya Community and the preparation processes

1. Omoyu (Tite):

- Prepare required material- Chicken, firewood, fry pan (Karai), oil, onion, garlic, spices, rice and water as per need.
- Firstly cut the chicken and gather furs in a pot then burn furs up to change in black color's residue but not to change in powder/ash form.
- Remove the intestine, the wheel, head, wings, and legs from the chicken, and clean and wash it properly and cut it in small pieces.
- Heat oil in a fry pan and fry the residue of furs, and add the cuts of intestine, wheel, head, wings, and the legs including some rice and water.
- Then mix them properly and cook it. Tite is ready for eat.

2. Dhindo:

- Make prepare the required materials- firewood, pot (karahi), millet flour, and water.
- Boil water in karahi and add millet flour in boiled water, cook it with steering regularly by flat spoon for a while (about 10 minutes).
- Dhindo is ready for eat.

3. Bhatmas ko achar (pickles of soybean):

- Prepare require materials- Soybean, fry pan, firewood, pots, salt, chili, tomatoes.
- Fri the soybean in a fry pan and remove their rind by husking and clean it.
- Grind salt, chili and tomato in a stone slab and mix cleaned soybean properly.
- Then soybean pickle is ready.
- You can also add garlic, onion and ginger as your taste.

4. Chaleppa (Kodo ko Roti):

- Grinding millet and make millet flour
- Mix millet flour with water, knead and make smooth batter.

- Make flat and thin from kneaded batter, put it in a heated pan, turn back once then cook in a fire heat.

Or

- Mix water and millet flour and make smooth runny batter.
- Heat a pan and put it in the heated pan, turn back again and again in two-three minutes gap then take out from the pan when it cooked.

5. Pickles of Gundruk

- Soak some Gundruk in water for a while.
- Grind salt and chili in a stone slab as your taste.
- Cut garlic, onion and ginger in small pieces and mix it properly with soaked Gundruk and grinded salt/chili.
- Then Gundruk pickle is ready.

6. Gande ko Achar (Gande Pickle):

- Collect the required materials- Gande, oil, turmeric, salt, chili, onion, potato, Silam or Teel,
- Clean and wash Gande properly
- Boil the potato and Gande in a pot.
- Clean bark of potato, and cut small pieces.
- Fry the Silam or Teel in a fry pan.
- Grind salt, chili, fried silam or teel and in a stone slab, then mix boiled gande, potato pieces, turmeric and onion in a pot with heated oil.
- The Gande pickle is ready.

7. Kinama (Fermented Soybean):

- Clean and wash soybean properly and soak for a night (or at least 6 hours).
- Wash it again and cook properly.
- Then take out and wash it once in a cool water.
- Prepare a pot or bamboo basket for fermentation.

- Put a clean cotton cloth in the bamboo basket/pot for rapping.
- Then put cooked soybean within the cotton cloth and rapping it properly inside the pot/basket.
- Then cover the pot/basket with a warm cloth and put it in a warm place for 3-5 days (fermentation time depends on the temperature of the place).
- After 3-5 days, look it and measure it is prepared properly or not. If it looks with visible white fibers like wire during stirring it then kinema is prepared.
- Then you can cook it as a gravy or soupy vegetable or you can use it with the vegetable of gundruk/sinki.
- Prepared Kinema can be stored for 5-6 months, if it dried 3-4 days in sun properly.

8. Fekla:

- Grind Maize in a grainy feature that looks like rice grain.
- Remove their bark by husking and clean it properly.
- Wash it properly and soak for a while.
- Put it on a pot, add water and cook it properly by stirring time to time and cover it for a while as cooking rice.
- Fekla is prepared for eat.
- You can eat Fekla with pulses and any vegetables, meat or milk and yogurt.

9. Fyakulik Chama:

- Prepare required materials- Gahat, rice, pots, firewood, water
- Wash gahat properly and cook in a pot, then wash rice and boil it in another pot.
- After some time (when almost cooked the rice) mix the already cooked seed of gahat and cook cover it for few minutes then Fyakulik Chama is ready.
- You can eat the remaining soup of gahat as lentils during eating the Fyakulik Chama.

Annex-2: Major indigenous foods of Danuwar Community and the preparation processes

1. Chichauri:

- Prepare required materials- firewood or stove, small bamboo sticks, 2 pots (Paini- a clay pot with small holes in bottom and another any hard pot for boiling water that matches Paini's bottom in its top), and Andi rice as required.
- Wash Andi rice properly and wet it about 3-4 hours.
- Arrange the Paini with laying the bamboo sticks in its inside bottom and put the soaked Andi rice.
- Boil the water in another pot and put that Paini over there for steaming the Andi rice. Cover the Paini so that the steam can't go out and steaming properly.
- Leave it for 1-2 hours as per the quantity of rice with a low flame of fire.
- Then Chichauri is ready to eat.

2. Handi Roti:

- Take rice as per the need,
- Wash rice properly and soak it 2-3 hours,
- Grind soaked rice and make flour,
- Add some oil or ghee and water, and mix it up to make a smooth runny liquid form,
- Heat the fry pan (Tawa), put little oil and runny liquid flour, cook for a while without returning another part.
- The Handi Roti is ready to eat.

3. Pickles of Barmi:

- Collect Barmi from its tree, and wash it properly,
- Then fry in a pan or boil it and grind in a stone slab,
- Add salt, turmeric and chili as per the taste,
- Then add some dust of Alas, heat oil and add methi and jwano in heated oil then and mix it properly with Barmi,
- Then the pickles of Barmi is ready to eat.

4. Pickles of Pina (Residue of mustard oil):

- Soak Pina in a pot for 12 hours.
- Then put it in a bamboo basket with rapping properly from leaves of banana, and cover the basket with heavy stone.
- Then put the covered basket in a warm place for 4-5 days.
- After 4-5 days, take out in a pot from the basket knead it well, and make small round lump in the bamboo mat, and dry it properly in sun for 2-3 days.
- The dried Pina can be stored and used for 3-4 months as per the need.
- During the preparing Pina Pickles: Take some dried Pina and cook it in fire coal and prepare dust by grinding in a stone slab, and put it in a bowl.
- Add salt, chili, turmeric, garlic, onion, ginger and mix it well.
- The Pina pickle is ready to eat.

5. Pickles of Crabs (Gangata ko Achar):

- Clean crabs properly and cook it in fire coal.
- Clean cooked crabs with removing the cover and unwanted parts, and wash it well.
- Prepare dust of it by grinding in a stone slab and mix the crab dust with grinded salt, chili and garlic.
- It can be mix with onion or Pina (residue of mustard oil) or sour green mango as your taste and differentiate taste varieties of pickles.

6. Vegetable of Crabs:

- Clean crabs properly with removing the cover and unwanted parts.
- Wash it well and cut in small pieces.
- Prepare onion, garlic, chili by cutting in small pieces.
- Heat oil in a pan, add onion, garlic and chili and fry it up to make brown color.
- Then add turmeric and crabs' meat and fry it for a while. Add some salt as per the taste then add some water and cook it properly.

- After cooked properly, add water as your wish (if you want gravy then you can add very little water, and if you want the soupy one then you can add more). It depends up on your choice.
- You can eat this gravy or soup with Rice, Dhido and Roti.

7. Pickles of Sokna (*Colocasia antiquorum*, Pindalu in Nepali)

- Collect Dudhe Pindalu, remove leaves and cut small pieces of stem and dry in sun for a day.
- Then mix it properly with mustard and turmeric dust, and put it in a Jar.
- Keep it for 7-10 days, then take out some pieces (as per the requirement) and mix it with salt and chili.
- The Sokna pickle is ready to eat.

8. Pickles of Totela:

- Collect Totela flower, clean it and wash properly.
- Boil it for a while and wash again by cold water.
- Drain water properly from boiled Totela flower.
- Add salt and chili as per the taste, and add some dust of Alas/Teel.
- Heat some oil and add methi and jwano, turmeric in the heated oil and mix it well with boiled Totela flower.
- Then Totela pickle is ready to eat.

9. Sidra ko Achar (pickle of dried fish):

- Collect fish from the river, clean and wash them properly.
- Dry properly of washed fishes in sun heat.
- Store in a box/jar and use it as needed.
- During the preparation of pickles, take some dried fish from the jar and mix it properly with salt, chili and garlic as per the taste.
- Then Sidra ko Achar (pickle of dried fish) is ready to eat (it doesn't need oil & other spices).

10. Pickles of Tutumi:

- Collect Tutumi fruits from the plant.
- Wash properly, cut in two pieces of each fruit and take out the bean.
- Then cook it in fire coal, and grind in a stone slab with salt, chili and spices as per the taste.
- Tutumi can be used for vegetable also. If you want to make vegetable then you cook it in a fry pan as cooking other vegetables or you can mix fishes too.

11. Pickles of Maijal:

- Go to forest and collect Maizal fruits from the tree.
- Wash it and cut in two flacks of each Maizal, and wash again properly.
- Put it in a pot, add water and boil it for a while.
- After cooked take out from the pot and make it cool.
- Add some dust of Alas/Teel, salt, turmeric, chili, heated oil with fried Methi, jwano and mix it properly.
- The pickle of Maizal is prepared.

12. Bagya Roti:

- Prepare a fine flour with soaked rice (soak rice at least 2 hours).
- Knead flour with lukewarm water or fry flour and knead with cold water and make smooth batter.
- Then make it in small round lump (Bagya roti) from all kneaded batter and press each lump for an image of three fingers.
- Arrange the Painsi (a clay pot with some whole in the bottom) with laying the bamboo sticks or put a thin and clean cotton cloth in its inside bottom and put the all prepared Bagya roti in the Painsi.
- Boil the water in another pot and put that Painsi over there for steaming the Bagya roti. Cover the Painsi so that the steam can't go out and steaming properly.
- Leave it for an hour with a low flame of fire for cooking (time depends on the quantity of Bagya roti, if there are less amount of rotis in the Painsi then it cooked within 30 minutes too). Then Bagya roti is ready to eat.

13. Machha ko Pusan (a type of pickle made by fresh fish):

- Collect fishes from the river or pound, clean them properly and wash it 2-3 times.
- Then mix it well with oil, turmeric, salt, chili and spices, then put it in a pan, cover them, and cook 20-30 minutes with low flamed fire.

Or

- Put them in green leaves with proper covering and cook them in fire coal.
- Machha ko pusan is ready to eat.

14. Vegetable of Tanki

- Collect soft leaves and face from the Tanki's tree,
- Wash it properly, then boil it in a warm water,
- Then heat oil in a fry pan, add Methi/Jeera then add the boiled Tanki, salt, chili and mix it properly and cook it for 5-6 minutes,
- The vegetable of Tanki is ready for eat.

15. Andi ko Jand/Nigar

- Boil water in a pot and add Andi Rice, then cook it with steer time to time as normal rice cooking.
- After cooked leave it up to somewhat cool (lukewarm).
- Then evict it from pot and in a bamboo mat or plastic and mix Marcha (local fermentation material made by medicinal plants and rice flour) gather them and pile it in a pack (Bora) by pressing with a heavy weight.
- After 3-4 days it makes a pleasant scent then put it in a clay pot (or a drum) then tight the pot mouth, and leave it about one year.
- Then Andi Jand is ready. There makes some liquid form which is called Nihar and other is in wet solid form which is used for Jand.

Annex-3: Major indigenous foods of Santhal Community and the preparation processes

1. Suda/Sudo Dhaka:

- Prepare required materials- firewood, pots, oil, onion, garlic, spices, meat, rice and water as per need.
- Heat a pot in fire stove, fry onion, garlic and spices on heat oil up to look as brown color then add meat, cook them on slow heat.
- After cooked the meat add washed rice and mix them, fry some times and add water and mix them time to time, and cover 10 minutes until cooked the rice.
- Then Suda Dhaka is ready to eat. (It looks like a less spicy Biryani)

2. Dumbuk:

- Make prepare the required materials- firewood, pots, handi (clay pot has small holes on bottom), rice flour, water.
- Put some sugar in water and boil till the water is lukewarm knead rice flour.
- Then put the rice flour in lukewarm sugar water and mix/knead them well.
- Make round or different attractive shapes of kneaded rice flour (it also can make different shapes like animals, fish, game tools etc. for the children's motivation to eat) and keep them in a handi.
- Boil water in another any harden pot that need to match the handi's bottom side with its top and put that handi in top of the pot.
- Keep it covered and leaves it 20-30 minutes for steam.
- Then Dumbuk is ready to eat.

3. Dau Mandi:

- Cook rice.
- Keep it covered for 25 mins,
- Do not take its water out from the rice.
- And dau mandi is ready

4. Neem Sudo or Neem dau mandi

- Bring Neem leaves from the tree and wash it properly.

- Let them dry for a while or heat them in a fry pan with small flame and crush it into small pieces
- After than wash rice in another pot and put the rice on cooking pot, keep the Neem pieces in rice mix it and boil it together.
- After 10 minutes Neem Sudo is ready.
Or
- You can also fry garlic in oil and keep it in cooked Neem Sudo before the serve.

5. Gudu (Meat of mouse)

- Burn all furs of mouse at first then washes it properly.
- Remove the intestine and wash it again.
- Cut it in small pieces as other meat.
- Heat oil and fry onion, garlic, chili, spices and up to come it in a brown color.
- Then add turmeric and the meat and cook it by steering time to time with covering a while, then add some salt as your taste. It is ready if you want to fry Gudu.
- Add little water if you make it gravy or add more water as per the need if you make it a soupy meat.
- After boiled it properly the Gudu is ready.

Annex-4: Nutritional value and health benefits of major crops use by indigenous peoples of study area

1) Rice nutritional value and health benefits:

Rice is such an important and staple food in most of the countries in the world. Generally, rice is of two types brown and white. Both brown and white rice are of same grain but it's just milled differently. Brown rice consists of bran layer which make it healthier and as well as takes more time to cook as compared to white. Brown rice helps in control of diabetes. Brown rice consists of antioxidant name phenolics which decreases the risk to cancer. Insoluble fiber in brown rice helps to improve bowel and digestive system. (contributors 2022). A 100 gm serving of white, short-grain, cooked rice contains the following nutrients:

Nutrient	Amount	% Daily Value (DV)
Calories	130	
Carbohydrate	28.7 grams (g)	10%
Protein	2.36 g	5%
Fat	0.19 g	0%
Fiber	2g	

(Kathy.W.Warwick 2022)

The following table looks at the amounts of different nutrients in 100 g of brown rice, white rice and enriched white rice.

	Brown rice	White rice	Enriched white rice
Manganese	42% DV	16% DV	16% DV
Niacin	16% DV	3% DV	9% DV
Thiamin	15% DV	2% DV	14% DV
Selenium	11% DV	—	14% DV
Magnesium	9% DV	2% DV	2% DV

(Kathy.W.Warwick 2022)

Manganese in rice helps in metabolism, growth and development and in body's antioxidant system. Thiamin helps in the function of heart, muscles and nervous system. Selenium helps in vital function of DNA and hormones. Magnesium is essential for protein and energy synthesis.

(Kathy.W.Warwick 2022)

2) Corn nutritional value and its health benefits

Corn is the staple food containing a lot of health benefits. It is eaten and grown around the world. Fiber in corn is good for health which helps bowel movement and facilitates digestive track. High amount of vit B in corn helps in cognitive function and as well as for dementia and dermatitis. Due to its high value of folic acid, it is also considered good for pregnant women. Corn consists of various minerals that your body needs in functioning day to day work in which magnesium maintains heart beat and phosphorus regulates kidney function. Corn consists of potassium which regulates circulatory system and maintains heartbeat. Its antioxidant property helps in reducing the risk of cancer (The Indian Med n.d.). One large ear of corn is roughly equal to about 1 cup of individual kernels. A large 1-ear serving of corn has:

- Calories: 123
- Protein: 4.6 grams
- Fat: 1.9 grams
- Carbohydrates: 26.7 grams
- Fiber: 2.9 grams
- Sugar: 9 grams

(contributors, Health benefits of corn 2022)

3) Wheat nutritional value and health benefits

Wheat has become a principal cereal and is considered a good source of protein, minerals, vitamin B and dietary fiber. Wheat contains gluten and starch which provides heat and energy. Wheat helps in easy movement of bowels. Vitamin B, E and protein helps build and repair muscles tissue. Refined wheat flour has lack of vitamins and minerals which led to constipation, nutritional disorders and digestive disturbances. Whole wheat containing bran and wheat germ gives protection against constipation, ischemic, heart disease, appendicitis, obesity and diabetes. (Yadav 2011)

Nutritional Value (/100 g raw)	Unit	White wheat flour, unenriched ¹	Whole grain wheat flour ¹	Brown rice ²	Oats ¹	Buckwheat ³	Whole grain barley ³	Wild rice ¹	White rice, unenriched ¹
Energy	kcal	364	340	357	389	335	334	357	365
Protein	G	10.3	13.2	8.3	16.9	11.1	10.6	14.7	7.1
Total fat	G	1	2.5	2.6	6.9	2	2.1	1.1	0.66
Carbohydrates	G	73.6 ^a	61.3 ^a	73.5	55.7 ^a	65.3	60.8	68.7 ^a	78.7 ^a
Fibre	G	2.7	10.7	3	10.6	5.8	14.8	6.2	1.3
Calcium	mg	15	34	12	54	18	50	21	28
Iron	mg	1.2	3.6	1.3	4.7	3.8	6	2	0.8

Magnesium	mg	22	137	157	177	180	91	177	25
Phosphorus	mg	108	357	300	523	320	380	433	115
Potassium	mg	107	363	250	429	460	4	427	115
Sodium	mg	2	2	4.5	2	1	0.5	7	5
Zinc	mg	0.7	2.6	0.8	4	2.5	3.3	6	1.1
Thiamin (B1)	mg	0.1	0.5	0.3	0.8	0.4	0.3	0.1	0.07
Riboflavin (B2)	mg	0.04	0.2	0.03	0.1	0.1	0.1	0.3	0.05
Niacin (B3)	mg	1.3	5	0.3	1	3.5	n/a	6.7	1.6
Vit. B6	mg	0.04	0.4	0.3	0.1	0.4	0.6	0.4	0.2
Folate	DFE	26	44	49	56	40	50	95	8

(European Commission 2021)

Composition of wheat products per 100g edible portion

Wheat Products	Protein	Fat	Carbohydrate	starch	Total sugar	Vitamin E
Wheat germ	26.7 g	9.2 g	44.7 g*	28.7 g*	16*	22 mg
Wheat bran	14.1 g	5.5 g	26.8 g	2 g	3.8	2.6 mg
Wheat flour	12.6 g	2 g	68.5 g	66.8 g	1.7	0.6 mg
Whole meal flour	12.7 g	2.2 g	63.9 g	61.8 g	2.1	1.4 mg
White flour (plain)	9.4 g	1.3 g	77.7 g	76.2 g	1.5	0.3 mg
White flour(self-raising)	8.9 g	1.2 g	75.6 g	74.3 g	1.3	0.3 mg*
White flour (bread-making)	11.5 g	1.4 g	75.3 g	73.9 g	1.4	0.3 mg *

Notes: *values are estimates (Yadav 2011)

4) Millet nutritional value and health benefits:

Millet is the sixth most valued cereal grains in the world as it grows and matures very quickly in comparable to rice and wheat. Millet is also drought resistance and is low maintenance cereal which makes them more preferable.

Nutritional value: each 100 gm of cooked millet contains:

Protein	3.51 g
Carbohydrate	23.7 g
Dietary fiber	1.3 g
Magnesium	44 mg
Copper	0.161 mg
Phosphorus	100 mg
Manganese	0.272 mg

(Chin 2022)

Health benefits:

Millet is rich in fiber which helps in bowel regulation and movement. As millet is gluten free it is very good for the people with celiac disease. Magnesium of wheat helps in heart rhythm.

Millet contains amino acid which helps in the reduction of anxiety and depression. Study of 2021 suggests that millet helps in reducing type 2 diabetes as it helps in managing blood glucose level. Another study conducted in 2021 concluded that millet diet helps in reducing BMI and manages cholesterol. Millet is the good source of antioxidant and reduces the risk of chronic diseases. Millet decreases the risk of cancer cell growth. It promotes wound healing and maintains healthy bones (Chin 2022). Millet helps women of post menopause fight with heart ailments. (Sharma n.d.).

5) Buckwheat health benefits and nutritional values:

Buckwheat is a superfood containing high protein. It is highly nutritious and is a good source of protein, energy and fiber. One cup i.e. 168 gm of roasted buckwheat seed contains

Protein	5.68 g
Fat	1.04 g
Carbohydrate	33.5 g
Fiber	4.5 g
Potassium	148 mg
Phosphorus	118 mg
Magnesium	86 gm
Calcium	12 mg
Iron	1.34 mg

(Kondala 2019)

Vitamins in buckwheat: Thiamin, Riboflavin, Niacin, Folate, Vitamin K, Vitamin B-6

According to American Heart Association, buckwheat is a good source of fiber which helps to control cholesterol, reduce risk for heart disease, diabetes, stroke and obesity. Buckwheat being good source of fiber and niacin will help in digestive health. Buckwheat has high protein which helps in weight management (Kondala 2019). Buckwheat contains variety of antioxidants which helps in reducing risk to cancers (Contributors 2019).

6) Health benefit and nutritional value of local chicken:

Serving size: 112gm

Calories	110
Fat	1 g
Cholesterol	70 mg
Sodium	75 mg
Protein	24 g
Vitamin C	1 mg
Iron	0.4 mg
Potassium	410 mg

(Mynetdiary n.d.)

Proximate composition of the meats in percentage (%)

Moisture content	7.50
Ash content	2.00
Fat content	11.76
Fiber content	1.96
Protein content	50.95
Carbohydrate content	25.83

(Ogunmola 2013)

Mineral elements in the local chicken meat samples in mg/100g

Potassium	704
Sodium	351
Calcium	428
Magnesium	377
Phosphorus	29.50
Iron	465
Manganese	245
Copper	26
Zinc	594

(Ogunmola 2013)

Health benefits:

Local chicken has fewer toxins present in their body as they are organically grown in natural environment. Local chicken has more amount of Vit D as compared to normal chicken. They have less fat hence perfect for weight loss (nkataa club n.d.).

Research found out that local chicken may contain healthy omega 3 fatty acid which helps heart functioning and prevents from antibiotic resistant *Salmonella* (Team 2023).

7) Health benefits and nutritional value of pork

Pork is rich in protein and helps in normal growth and development of the body and children's bone. Pork is a rich source of zinc, selenium, vit B12 and B6 which helps in normal work of immune system. Due to rich in vit B12 and B6, niacin and riboflavin it helps in reduction of tiredness and fatigue (Healthy facts about pork you probably dont know n.d.). Particularly beneficial for bodybuilders, recovering athletes, people post-surgery and people who need to build up or repair muscles (Arnarson 2019). Half-lean - half-fat pork contains:

Protein	16.5 g
Fat	21.5 g
Calcium	9 mg
Phosphorus	178 mg
Iron	1.5 mg
Zinc	1.91 mg
Potassium	285 mg
Sodium	55 mg
Vitamin A	10 µg

(Nutritional Value of Pork n.d.)

Lean pork contains: high and rich in protein vitamins and minerals

Protein	19 g
Fat	7 g
Calcium	7 mg
Phosphorus	190 mg
Iron	1.5 mg
Zinc	2.5 mg
Potassium	341 mg
Sodium	76 mg
Vitamin A	2 µg

(Nutritional Value of Pork n.d.)

Fatty pork contains:

Protein	14.5 g
Fat	37.3 g
Calcium	8 mg
Phosphorus	156 mg
Iron	0.4 mg
Zinc	1.59 mg
Potassium	318 mg
Sodium	42 mg
Vitamin A	2 µg

(Nutritional Value of Pork n.d.)

8) Health benefits and nutritional value of mutton:

Mutton is seen as the nutritional powerhouse containing high amount of protein, vitamins and minerals. It has less fat than beef but has still high in protein and packed with minerals like Iron, zinc and selenium. Vit B12 is also higher in mutton compared to other meats. Goat meat being rich is protein and other essential nutrition which increases the feeling of fullness. Goat meats contain omega 3 fatty acids which increases the metabolic rates of the body. Mutton is high in zinc iron and fatty acids which helps in cognitive development. Mutton also produce energy as it is high in vitamin B. Provides vitamin and minerals to promote strong and healthy hair. It helps to improve digestion and boost immunity (5 amazing health benefits of mutton 2023). Iron in mutton helps in body temperature regulation, immune support and energy production. Vitamin B12 helps in DNA synthesis, nerve cell function and RBC formation. Potassium helps in regulating blood pressure and muscle cells. (Hallal 2022)

A 3-ounce (85-gram) portion of cooked goat meat provides:

Calories	122
Protein	23 g
Fat	2.6 g
Saturated Fat	0.8 g
Riboflavin	30% of daily value
Iron	18% of daily value
Vitamin B12	17% of the daily value
Zinc	30% of the daily value
Potassium	10% of the daily value

(Hallal 2022)

9) Health benefits and nutrition value of buff meat:

Per 100 grams of cooked meat

Fat	2.42 g
Calories	143
Cholesterol	82 mg
Protein	28.44 g
Iron	3.42 g
Vitamin B12	2.86 mcg
Saturated fat	2.5 g
Vitamin B6	19% of daily value

(Yankees Farmers Market n.d.)

Buffalo has good fat to protein ratio and has lower fat and higher protein. Rich in iron and vit B it helps in boosting energy levels, memory, and mood (Kay 2021). Vitamin B12 helps in brain development and anemia. Lipids in buffalo help in internal organ protection, maintenance of body temperature, and appetite stimulation (Andrea Tamburrano 2019). Vitamin B of buffalo helps in many cellular processes throughout your body, including energy and neurochemical production, as well as red blood cell formation. Iron helps in RBC formation and proper transport of oxygen. Selenium acts as an antioxidant. Zinc increase body immune system and helps fight various illness. (Rreiato 2020).

Annex-5: Participants of FGDs and KII

1) Participants on 2080/3/3-4 of FGD and KII in Athpahariya Community, Malbase, Dhankuta

S/N	Name of Participants	Address	Gender	Age (Yrs)	Contract Number
1	Baansmaya Rai	Dhankuta-3 Malbanse	F	49	-
2	Nigam Athpahariya	Dhankuta-3 Malbanse	F	24	9811665505
3	Bhim Bahadur Rai	Dhankuta-3 Malbanse	M	55	9808056785
4	Bhairab Athpahariya	Dhankuta-3 Malbanse	M	79	9804041795
5	Tek Bahadur Rai	Dhankuta-3 Malbanse	M	78	-
6	Kamal Bahadur Rai	Dhankuta-3 Malbanse	M	57	9842218835
7	Hasta Bahadur Rai	Dhankuta-3 Malbanse	M	83	-
8	Pokchi Maya Chhara	Dhankuta-3 Malbanse	F	64	-
9	Narmaya Jimi	Dhankuta-3 Malbanse	F	62	-
10	Bipana Rai	Dhankuta-3 Malbanse	F	35	-
11	Dibya Rai	Dhankuta-3 Malbanse	F	12	9810437357
12	Karina Rai	Dhankuta-3 Malbanse	F	13	-
13	Aayusha Rai	Dhankuta-3 Malbanse	F	12	-
14	Nirmala Rai	Dhankuta-3 Malbanse	F	13	9817307308
15	Ganga Bdr Rai	Dhankuta-3 Malbanse	M	59	9825374289
16	Indra Bdr Lingsa	Dhankuta-3 Malbanse	M	57	9883355601
17	Nanda Bdr Chhara	Dhankuta-3 Malbanse	M	57	9842156306
18	Dipesh Rai	Dhankuta-3 Malbanse	M	33	9810578672
19	Purna Lal Rai	Dhankuta-3 Malbanse	M	39	9818417027
20	Subas Chhara Rai	Dhankuta-3 Malbanse	M	25	9823367233
21	Subish Rai	Dhankuta-3 Malbanse	M	35	9817337393
22	Sudip Rai	Dhankuta-3 Malbanse	M	18	9828278402
23	Rajan Rai	Dhankuta-3 Malbanse	M	24	980066413
24	Sapana Rai	Dhankuta-3 Malbanse	F	29	9805377566
25	Bhim Rai	Dhankuta-3 Malbanse	M	33	9808157318
26	Basi Maya Rai	Dhankuta-3 Malbanse	F	45	
27	Surya Bdr Athpahariya	Kinrat Athpahariya Samaj Dhankuta	M	52	9842433683
28	Sacheta Athpahariya	Kinrat Athpahariya Samaj Dhankuta	F	38	9842385107

29	Komal Athpahariya	Kinrat Athpahariya Samaj Dhankuta	M	48	9842441967
30	Kisan Shrestha	Dhankuta,	M		9842070145
31	Dipak Basnet	RERP/ SAMRIDDHI	M	28	9806040365
32	Laxmi Ghimire	RERP/ SAMRIDDHI	F	45	9802303616
33	Bimala Neupane	RERP/ SAMRIDDHI	F	36	9802303615
34	Sita Bhattarai	RERP/ SAMRIDDHI	F	49	9801564927
35	Saleena Shrestha	Kathmandu	F	24	9863872069
36	Draupadi Subedi	Kathmandu	F	52	9851125312

2) Participants on 2080/3/1-2 of FGD and KII in Santhal Community, Rangeli 2, Morang:

S/N	Name of Participants	Address	Gender	Age (Yrs)	Contract Number
1	Bachi Hembrom	Rangeli 2, Lxmipur	F	42	-
2	Manju Soren	Rangeli 2, Lxmipur	F	33	-
3	Meri Mardi	Rangeli 2, Lxmipur	F	38	-
4	Dhulad Tudu	Rangeli 2, Lxmipur	F	33	9817777178
5	Soni Mardi	Rangeli 2, Lxmipur	F	40	9836337304
6	Channi Mardi	Rangeli 2, Lxmipur	F	35	9827329938
7	Sushila Murmu	Rangeli 2, Jaliya	F	46	9824366310
8	Baha Mardi	Rangeli 2, Lxmipur	F	35	-
9	Gopal Soren	Kathpokhari 1	M	45	9807034709
10	Karan Besara	Rangeli 2, Lxmipur	M	32	9815971787
11	Mahendra Hasda	Rangeli 2, Lxmipur	M	42	-
12	Joyal Soren	Rangeli 2, Lxmipur	M	45	9815366644
13	Jiban Mardi	Rangeli 2, Lxmipur	M	44	9805392839
14	Sujan Hasda	Rangeli 2, Lxmipur	M	19	-
15	Dinesh Besara	Rangeli 2, Lxmipur	M	19	9824359070
16	Jyotim Tudu	Rangeli 2, Bhajang	M	45	-
17	Dhena Mardi	Rangeli 2, Bhajang	M	68	-
18	Mangal Hasda	Rangeli 2, Bhajang	M	70	-
19	Jugal Tudu	Rangeli 2, Bhajang	M		-
20	Jyotin Kisku	Rangeli 2, Bhajang	M	65	-
21	Sukal Mardi	Rangeli 2, Bhajang	M	48	-
22	Bhagwan Murmu	Rangeli 2, Bhajang	M	78	-
23	Sonamani Kisku	Rangeli 2, Bhajang	F	58	-
24	Munni Kisku	Rangeli 2, Bhajang	F	70	-
25	Suraji Murmu	Rangeli 2, Bhajang	F	65	-
26	Dhular Mardi	Rangeli 2, Bhajang	F	72	-

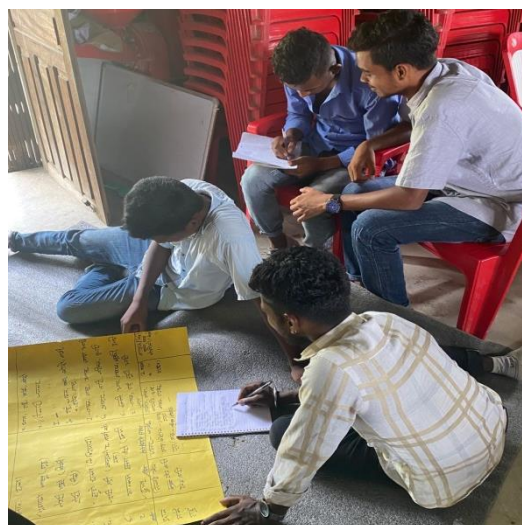
27	Chudaka Mardi	Rangeli 2, Bhajang	M	76	-
28	Sona Murmu	Rangeli 2, Bhajang	F	73	-
29	Maramaee Mardi	Rangeli 2, Bhajang	F	55	-
30	Namita Murmu	Rangeli 2, Bhajang	F	55	-
31	Anita Maradi	Rangeli 2	F	30	-
32	Raju Karmakar	Rangeli 2	M	35	-
33	Dipak Hembrom	Rangeli 2	M	17	9826086005
34	Rabi Tudu	Rangeli 2	M	17	9828343163
35	Renuka Tudu	Rangeli 2	F	13	-
36	Sushila Murmu	Rangeli 2	F	20	9827071592
37	Urmila Mardi	Rangeli 2	F	19	9811047398
38	Sanam Hasda	Rangeli 2	F	17	9827329938
39	Supriya Karmakar	Rangeli 2	F	15	9806356579
40	Susma Tudu	Rangeli 2	F	14	-
41	Susmita Hasda	Rangeli 2	F	16	-
42	Nishi Hembrom	Rangeli 2	F	16	-
43	Balesi Mardi	Rangeli 2	F	14	-
44	Charlesh Tudu	Rangeli 2	M	18	9817927217
45	Amit Mardi	Rangeli 2	M	16	-
46	Markush Mardi	Rangeli 2	M	31	9807003318
47	RamKumar Tudu	Rangeli 2	M	23	-
48	Bhola thakur	RERP/SAMRIDDHI	M	34	9802309946
49	Saleena Shrestha	Kathmandu	F	24	9863472069
50	Draupadi Subedi	Kthmandu	F	52	9851125312

3) Participants on 2080/3/5-6 of FGD and KII in Triyuga Municipality, Rajabas, Udayapur:

S/N	Name of Participants	Address	Gender	Age	Contract number
1	Punam Danuwar	Triyuga- 9	F	42	9817746359
2	Nirmala Danuwar	Triyuga- 9	F	58	-
3	Parbati Danuwar	Triyuga- 9	F	45	-
4	Sita Danuwar	Triyuga- 9	F	51	-
5	Madhu Arati Danuwar	Triyuga- 9	F	53	-
6	Manamaya Danuwar	Triyuga- 9	F	51	-
7	Shanti Danuwar	Triyuga- 9	F	51	9842827770
8	Laxmi Danuwar	Triyuga- 9	F	45	-
9	Nirmala Danuwar	Triyuga- 9	F	49	9824776174
10	Anju Danuwar	Triyuga- 9	F	21	9816746402
11	Sujata Danuwar	Triyuga- 9	F	26	9807788358
12	Shova Danuwar	Triyuga- 9	F	35	9810198485

13	Archana Danuwar	Triyuga- 9	F	40	9819975422
14	Kedar Kumar Danuwar	Triyuga- 9	M	47	9862266965
15	Raj Kumar Danuwar	Triyuga- 9	M	51	9842851230
16	Alisha Danuwar	Triyuga- 9	F	18	2828767233
17	Roshika Danuwar	Triyuga- 9	F	18	9813134843
18	Salina Danuwar	Triyuga- 9	F	17	9819574162
19	Pramila Danuwar	Triyuga- 9	F	17	9862987775
20	Bijaya Danuwar	Triyuga- 9	M	20	9807797749
21	Ranjan Danuwar	Triyuga- 9	M	10	9810198485
22	Labesh Danuwar	Triyuga- 9	M	17	9823416502
23	Nirmala Kumari Danuwar	Triyuga- 9	F	49	9824776174
24	Buddhimaya Danuwar	Triyuga- 8	F	55	9818018946
25	Mandira Danuwar	Triyuga- 8	F	44	9842872064
26	Bikendra Danuwar	Triyuga- 8	M	50	9842837320
27	Ramisha Danuwar	Triyuga- 8	F	33	9804742440
28	Anant Kumar Danuwar	Triyuga- 13	M	68	9816971695
29	Raj Kumar Danuwar	Chairperson, Ward No. 9, Triyuga M.	M	51	9842851230
30	Bishnu Kumar Danuwar	Mem.Ward No. 9	M		
31	Bhupendra Budhathoki	Mem.Ward No. 9	M		
32	Mira Bishwokarma	Mem.Ward No. 9	F		
33	Archana Danuwar	Danuwar Mahila Samajsudhar Sangh	F		9819975422
34	Kedar Kumar Danuwar	Nepal Danuwar Samaj	M	47	9862266965
35	Rajani Danuwar		F	25	9807706002
36	Dipak Basnet	RERP/ SAMRIDDHI	M	28	9806040365
37	Sita Bhattarai	RERP/ SAMRIDDHI	F	49	9801564927
38	Salina Shrestha	Kathmandu	F	24	9863872069
39	Draupadi Subedi	Kathmandu	F	52	9851125312

Annex-6: Some Photographs





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