

# BASELINE SURVEY: PHASE VII

## KHORDHA DISTRICT

Special Program for Promotion of Millets in Odisha  
(Shree Anna Abhiyan)



*Submitted to*  
Directorate of Agriculture and Food Production,  
Government Of Odisha  
**2025**



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Nabakrushna Choudhury Centre for Development Studies  
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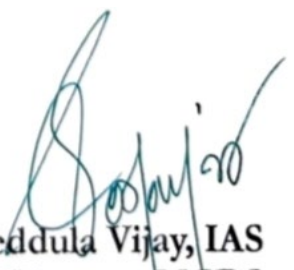
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## FOREWORD

Sustainable Development Goal 2 seeks to end hunger, achieve food security, improve nutrition, and promote sustainable agriculture. Millets offer a promising solution to help accomplish these objectives. The Shree Anna Abhiyan (SAA) is a great initiative of Odisha government that shows the state's commitment to reviving the cultivation of millets that are not only climate-resilient but has significant implications on health and nutrition of people. The programme has brought different stakeholders to work together to reinstate the significance of millets in Odisha's agricultural landscape. I am delighted to have the opportunity to write this foreword for the 'Special Programme for Promotion of Millets in Odisha.'

The SAA programme has emerged from a consultation with diverse array of stakeholders including NCDS. A memorandum of understanding (MoU) was signed on February 27, 2017, bringing together key stakeholders including the Directorate of Agriculture and Food Production (DAFP), NCDS, and the Watershed Support Services and Activities Network (WASSAN). This MoU delineated the framework for concerted efforts towards implementing the SAA, with NCDS assuming the pivotal role of anchoring the research secretariat. NCDS embarked on a comprehensive survey initiative encompassing Baseline, Midterm, and End-line assessments in the designated blocks of the SAA. These surveys, designed to provide a situational analysis of the status of millet production, marketing, consumption, represent a critical step towards informed intervention and strategic decision-making. The findings of the baseline survey presented in the report would provide a situational analysis of the current status of the millet at the time of survey and a reference point to analyse the impact of intervention.

As the Director, I commend all the dedicated team members of NCDS for their unwavering commitment and tireless efforts in achieving the objectives of the SAA. Your hard work and perseverance have played a crucial role in turning our shared vision into reality. I also extend my heartfelt gratitude to our partners, stakeholders, and collaborators for their invaluable support and steadfast dedication in this direction.



**Dr. Yeddula Vijay, IAS**  
**Director, NCDS**

## ACKNOWLEDGEMENT

It gives me immense pleasure to extend my heartfelt gratitude to all those who contributed to the successful completion of the 'Baseline Survey Report of Phase VII, 2023'. This endeavour was truly a collaborative effort, and I am deeply grateful for the unwavering support and dedication demonstrated by each individual and organization involved. First and foremost, I would like to express my sincere appreciation to the research team of Nabakrushna Choudhury Centre for Development Studies (NCDS), Bhubaneswar, for spearheading the preparation of this report. Your commitments to excellence and tireless efforts have been instrumental in ensuring the quality and accuracy of the findings presented.

I extend my heartfelt thanks to the related government departments, organizations, and stakeholders, including farmers' associations, whose invaluable support and cooperation played a pivotal role in the successful completion of this study. Special mention goes to Dr. Arabinda Kumar Padhee, Principal Secretary to the Government, Department of Agriculture & Farmers' Empowerment (DA&FE), Mr. Prem Chandra Choudhury, Director of Agriculture DA&FE, and the Joint Director of Agriculture for their invaluable contributions.

I would like to extend my sincere appreciation to our esteemed Director, Dr. Yeddula Vijay, IAS; Additional Secretary to the Government, Planning and Convergence Department, Government of Odisha, and Director of Nabakrushna Choudhury Centre for Development Studies (NCDS). Your guidance, wisdom, and valuable suggestions have been invaluable in shaping the direction of this study. Many thanks to NCDS administration for their continuous support for smooth functioning of the research work. I want to acknowledge the contributions of Research team (Research Associates, Project Associates, Research Assistants) for their valuable insights and assistance.

I would also like to express my appreciation to the members of the Programme Secretariat (Watershed Support Services and Activities Network, WASSAN), particularly Mr. Dinesh Balam, Programme Secretariat, and the facilitating agencies and staff of the concerned areas under study for their support and cooperation. I am particularly grateful to Mr. Sushil Kumar Senapati, Ms. Kalpana Pradhan and Mr. Bikash Pradhan, along with the dedicated staffs of the State Project Monitoring Unit (SPMU), for their unwavering support and assistance throughout the duration of this project.

My sincere gratitude goes out to the Chief District Agricultural Officer (CDAO) of Khordha district, the Scheme Officer, District Programme Coordinator, Block Coordinators, and other block-level officials for their invaluable support in providing crucial information. Once again, thank you all for your invaluable contributions, dedication, and support. It has been a privilege to work alongside each of you, and I look forward to continued collaboration in our future endeavours. I extend my best wishes for the success of the publication.

Dr. Sandhya R. Mahapatro  
Project Director, SAA

## EXECUTIVE SUMMARY

Khordha district is one of the 17 districts where the 'Special Programme for the Promotion of Millets in Odisha or (hereafter) Shree Anna Abhiyan (SAA)' Phase VII has begun in the Kharif 2022 in two blocks of the district covering 480 target/programme households. Under the Baseline Survey, 2023 out of these programmes HHs, only 160 households (80 HHs from Banapur and Tangi Block) were selected by adopting the multi-stage sampling method. The survey data reveals that across the two blocks among the 160 sample households, 60.63 per cent belong to OBC/SEBC community, while the share of ST, SC, and other social categories is 23.75 per cent, 5.63 per cent and 10 per cent, respectively.

As observed in the Baseline Survey, the total population of the sample 160 households is 638, out of which 54.70 per cent are male and 45.30 per cent are female with all sample households belong to Hindu religion. All the sample households in the Banapur block of the district possess Ration Card, while only 87.50 per cent possessed Ration Card in the Tangi block. Majority (29.78 per cent) of the working population are engaged in agriculture, about 5.17 per cent are daily wage labour, 6.43 per cent are private sector employees, only 0.47 per cent are government sector employee, about 2.19 per cent are business owners while about 1.88 per cent of them are engaged in other occupations. Further, a quarter of them, i.e., 24.76 per cent of them, are students, 24.92 per cent are housewives, 3.13 per cent are pensioners, while about 4.86 per cent who are in the working age groups are unemployed.

It is also found that Most of the sample households (63.75 per cent) own between two to five acres of land, 33.13 per cent of them own less than two acres of land, while only per cent of them own between 5-10 acres of land. Another finding is that majority of the sample households (52.50 per cent) are earning between Rs.80001/- to Rs.120000/- rupees annually, 20 per cent of them are earning between Rs.40001/- to Rs.80000/- rupees, and about 11.25 per cent of them are earning between Rs.120001/- to Rs.160000/- rupees. Further, about 3.75 per cent of them are earning between Rs.160001/- to Rs.200000/- rupees while rest of the ten per cent of them are earning more than two lakhs' rupees per year.

As observed, the distribution of households by house structure shows that half of them, (50 per cent) have *Pucca* houses, and 39.38 per cent of them have *Semi-Pucca* houses, while only 10.63 per cent have *Kutcha* houses. None of the sample households are cultivating millets in the sample and Baseline Study Blocks. Majority (40.1 per cent) are not cultivating because they find it not profitable, while 20.1 per cent of them reported non-availability of seed as the major reasons for not cultivating millets in the study area.

As revealed, out of the total sample households across the blocks, only 9.38 per cent of them consume millets; however, only 18.75 per cent of them consume millets in only the Tangi block. Among the millets consuming households, all of them consume it during the summer season. All the millets consuming households consume millets only during breakfast. *Jau/Torani* is the popular recipe among the sample households as all the millets consuming households are consuming it. All the millets consuming sample households purchased the processed millets from the market, so there is no processing involved. As none of them cultivating millets, none of them are found to be selling millets.

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## ABBREVIATIONS

|         |                                                          |
|---------|----------------------------------------------------------|
| AAO     | : Assistant Agriculture Officer                          |
| AL      | : Agricultural Labour                                    |
| ATMA    | : Agricultural Technology Management Agency              |
| AWC     | : Anganwadi Centre                                       |
| CBOs    | : Community Based Organisation                           |
| CCD     | : Centre for Community Development                       |
| CRPs    | : Cluster Resource persons                               |
| CSOs    | : Civil Society Organisations                            |
| DAFP    | : Directorate of Agriculture and Food Production         |
| DDA     | : Deputy Director, Agriculture                           |
| FA      | : Facilitating Agencies                                  |
| FGD     | : Focused Group Discussion                               |
| FPC     | : Farmer Producer Company                                |
| FPO     | : Farmer Producer Organization                           |
| GP      | : Gram Panchayat                                         |
| FAQ     | : Fair Average Quality                                   |
| Ha      | : Hectares                                               |
| H.H. s  | : Households                                             |
| ICDS    | : Integrated Child Development Scheme                    |
| ITI     | : Industrial Training Institute                          |
| LS      | : Line Sowing                                            |
| LT      | : Line Transplantation                                   |
| MDM     | : Mid-Day Meal                                           |
| MFP     | : Minor Forest Produce                                   |
| MGNREGA | : Mahatma Gandhi National Rural Employment Guarantee Act |
| MSP     | : Minimum Support Price                                  |
| NCDS    | : Nabakrushna Choudhury Centre for Development Studies   |
| OBC     | : Other Backward Class                                   |
| SAA     | : Shree Anna Abhiyan                                     |
| PDS     | : Public Distribution System                             |
| SC      | : Scheduled Castes                                       |
| SMI     | : System of Millet Intensification                       |
| ST      | : Schedule Tribes                                        |
| WASSAN  | : Watershed Support Service and Activities Network       |

## Chapter I

### INTRODUCTION

#### 1.1 Background

Millets have been a staple food for millions of people in India for centuries, especially in the central tribal belts. They are drought-resistant, highly nutritious, and can be cultivated in a wide range of soil and climatic conditions. Millets are also low in Glycaemic index and gluten-free, making them an ideal choice for people with various health conditions. In recent times, there has been a renewed interest in millets cultivation due to its numerous health benefits and its potential to address food security challenges in the country. The Government of India has been promoting the cultivation of millets as part of its efforts to increase farmers' incomes, reduce dependence on water-intensive crops like rice, and promote sustainable agriculture. In this context, it is essential to understand the significance of millets cultivation and its associated challenges and opportunities.

Millets are cereal grain belongs to the Poaceae family, commonly known as the grass family. Millets are small, round whole grain grown in India, Nigeria, and other Asian and African countries. It is considered an ancient grain, used both for human consumption and livestock and bird feed. Millets have multiple advantages over other crops, including drought and pest resistance. It's also able to survive in harsh environments and less fertile soil. These benefits stem from its genetic composition and physical structure — for example, its small size and hardness. This crop is also divided into two categories — major and minor millets, with major millets being the most popular or commonly cultivated varieties. Major millets include Pearl, Foxtail, Proso (or White), Finger (or Ragi); Minor millets include Kodo, Barnyard, little, Guinea, Brown top, Fonio, Adlay (or Job's tears). Like most cereals, millet is a starchy grain — meaning that it's rich in Carbs. Notably, it also packs several vitamins and minerals. Therefore, it may offer multiple health benefits.

The United Nations designated Year 2023, as the International Year of Millets; it gets further attentions of public including the farmers. In the Indian state of Odisha, millets have always been an integral part of the traditional diet and have been cultivated for centuries, primarily among the tribal population. However, during last couple of decades, the popularity of millets has declined due to the increasing adoption of modern food habits and the promotion of high-yielding crops like rice and wheat. This shift has led to a decline in soil fertility and an increased vulnerability to climate change. To address these challenges, the Government of Odisha has launched several initiatives to promote the cultivation of millets, including 'The Special Programme for Promotion of Millets in Odisha (also known as Shree Anna Abhiyan, SAA) with a novel organisational structure was initiated by the Government of Odisha in 2017-2018 emphasising production, consumption, processing, and marketing of millets. The program aims to increase production, consumption, processing, and marketing of millets in tribal areas, where they have been a staple food for generations. In this context, it is crucial to understand the significance of millets cultivation in Odisha and its potential to promote sustainable agriculture and improve food

security. In Odisha *Mandia* Ragi, i.e., Finger Millets constitutes a significant share (about 95 per cent) of total millets cultivation and production in the state.

The Millet Mission program tried to revive these nutrient-rich millets in the agricultural landscape, which were fading away after its launch in 2017-18 by the Government of Odisha. It aimed to promote the production, consumption, processing, and marketing of millets, with a particular focus on tribal areas. The program had a unique structure that emphasized cultivating traditional millets such as Ragi, Gurji, Kosla (Small Millet), Kodo, Kangu (Foxtail Millet), and Jowars, which were forest dwellers' age-old foods. This initiative gave millet crops the much-needed attention they deserved and revived their growth across the state. In 2022, the implementation of SAA Phase VII began in 17 districts, including Khordha district and this baseline study aims to provide information on the program's dimensions in the district. The profile of the Khordha district is presented below.

## **1.2 District Profile**

Khordha District, established on April 1, 1993, emerged through the partition of the former Puri district. The district underwent reorganization when Puri was divided into three distinct entities: Puri, Khordha, and Nayagarh. Later, in the year 2000, the district's nomenclature was modified to 'Khordha.' Historically, Khordha holds significance as the last kingdom to be conquered by the British in 1803.

Khordha is positioned between 19 degrees 55 minutes to 20 degrees 25 minutes North Latitude and 84 degrees 55 minutes to 86 degrees 5 minutes East Longitude. The district headquarters, Khordha town, is located on N.H. 5. The local name of the area is Jajarsing, originally a small village. Formerly known as Kurada, meaning "foul-mouthed," the old milestones in the region displayed the word "KURADA," now replaced with "Khordha."

The district's historical narrative intertwines with Puri district, from which Khordha was separated. In the 10th century A.D., the rule of the Bhoumakars transitioned to the Somavanshis. The Somavansi Kings, including Yayati-2 and Udyot Mahabhava Gupta, were renowned temple builders credited with the creation of the Lingaraj temple at Bhubaneswar. The last king of this Dynasty, Karnadeva, was defeated by Chodaganga Deva around 1110 A.D. Khordha gained prominence when Raja Ramachandra Deva of the Khordha dynasty established it as the capital in the late 16th century A.D. The rulers resided near Barunei hill, strategically protected by natural features. The fort is now in ruins, with only traces remaining. In 1568 A.D., Ramachandra Deva-1 declared himself Raja of Khordha, and his successors were recognized as Gajapati kings.

During the Maratha occupation in 1751 A.D., Birakishore Deva faced challenges but ultimately triumphed. In 1803 A.D., the British seized Odisha, and Raja Mukunda Deva-2 initially assisted them but later revolted. The Paik Rebellion in 1817 A.D., led by Bakshi Jagabandhu Bidyadhar, a Commander of the Khordha Raja's forces, challenged British rule. Although formidable, the rebellion was suppressed, leading to the end of the Khordha kingdom. The capital of Odisha transitioned from Cuttack to Bhubaneswar due to spatial constraints, with formal inauguration on April 13, 1948, and the final shift in 1959.

### **1.2.1 Geography**

Khordha is a town and a municipal area in the Khordha district in the Indian state of Odisha. Bhubaneswar, the capital of Odisha, is situated within the Khordha district and is only 25 km from Khordha town. Odisha State Highway 1 and National Highway 16 pass through this town. Khordha district shares borders with several neighbouring districts, contributing to its geographical context. The adjoining districts include Cuttack, Puri, Nayagarh, and Ganjam.

The Geography of Khordha district is characterized by diverse natural features. The region is traversed by major rivers, contributing to its ecological richness. Some of the prominent rivers in the district include [list the major rivers]. The landscape of Khordha encompasses hills, creating picturesque vistas and enhancing the topographical diversity of the area. [Specify names and details of significant hills]. Apart from rivers and hills, Khordha district boasts various other geographical features that contribute to its unique charm. The district is known for [mention any unique geographical features, landmarks, or notable locations]. These features play a crucial role in shaping the environmental and cultural identity of the district.

In terms of coordinates, Khordha is situated at 20.18°N latitude and 85.62°E Longitude, with an average elevation of 75 m (246 ft). The district spans an area of 2,888 Square Kms (1115 Square miles). From a climatological perspective, Khordha experiences an average annual precipitation of 1200–1400mm. The district witnesses moderate temperatures throughout the year, except during the summer season (March–June), when maximum temperatures can exceed 45°C. The average minimum temperature in the district is 9.6°C, contributing to the overall climatic diversity of Khordha.

### **1.2.2 Economy**

Khordha District stands out as the most urbanized among all the districts in Odisha. The district's significant human and natural resources, coupled with its extensive knowledge base, play a pivotal role in its current economic growth, and will continue to do so in the future. The capital city, Bhubaneswar, holds paramount importance not only within the district but also at the state level. It serves as the epicentre of economic development, prominently reflected in various sectors such as infrastructure, industry, education, health, and IT. Key landmarks like Fortune Towers and IDCO Towers, alongside numerous residential complexes, cater to the burgeoning population and industries, crucial factors influencing the region's economic landscape.

Several industrial estates, including Mancheswar Industrial Estate and Khordha Industrial Estate, contribute significantly to economic activities. The district boasts world-class educational institutions such as Utkal University, IIT, KIIT, XIMB, and IIIT, attracting students from diverse academic levels. These institutions become a vital source of skilled professionals who later contribute to the district's economy. Bhubaneswar has emerged as the IT Hub of the State, hosting offices of numerous national and international IT Firms. This positioning creates ample employment opportunities for the district's graduates, fostering economic growth. The Information Technology sector, in particular, serves as a lucrative source of revenue for the district.

The district's rich cultural heritage, evident in its numerous temples, significantly bolsters the tourism industry, becoming a cornerstone of economic development. Bhubaneswar's ascent as the primary industrial hub in the state, surpassing Cuttack, underscores the dynamic economic shifts within the region.

Khordha District also plays a crucial role in the Handloom Industry producing Lungis, Napkins, and Saris with a market extending beyond Odisha's Borders. The government's strategic planning involving long-term investments in land, labour, and capital aims to elevate the district to the level of other vibrant regional economies in the country. Private investments further bolster these efforts, promising sustained and unfaltering development in the foreseeable future.

### **1.2.3 People and its Culture**

As per the 2011 Census, Khordha district boasts a population of 2251673, roughly equivalent to the nation of Latvia or the U.S. state of New Mexico. This positions it as the 201st most populous district in India out of a total of 640. The district exhibits a population density of 799 inhabitants per square kilometre (2,070/sq. mi), and it experienced a population growth rate of 19.65 over the decade spanning 2001-2011. The sex ratio in Khordha is 925 females for every 1000 males, accompanied by a commendable literacy rate of 87.51 per cent. Nearly 48.16 per cent of the populace resides in urban areas, while Scheduled Caste and Scheduled Tribe constitute 13.21 per cent and 5.11 per cent of the total population, respectively.

In terms of language distribution in Khordha district as of 2011, Odia dominates as the primary language, spoken by 92.13 per cent of the population. Other languages spoken include Urdu (1.98 per cent), Telugu (1.69 per cent), Hindi (1.55 per cent), Bengali (1.38 per cent), and Santali (0.43 per cent). This linguistic diversity reflects the rich cultural fabric of the district, with Odia being the predominant language shaping the communicative landscape. Khordha District, characterized by a diverse population, predominantly comprises Oriya and Telugu-speaking communities. Additionally, Muslims, Marwari's, Gujaratis, and Bengalis contribute to the vibrant cultural tapestry. The district hosts a myriad of Temples, Masjids, and Churches, making it a melting pot of religious diversity. Notably, it holds the highest number of Anglo-Indian residents in Odisha.

Khordha is renowned for its spirited celebrations, including the Ganesh Chaturthi festival in Jatni, Khordha Mohotsav in Khordha Town, and Laxmi Puja. The district also embraces cultural harmony through the exuberant observance of Eid ul Fitr, Christmas, Diwali, and Holi. Jatani's firecracker shops attract visitors from Puri, Cuttack, and beyond during Diwali, adding to the festive fervour. An intrinsic part of Khordha's cultural identity is the Paika Nrutya dance, a form of battle dance performed with zeal during Dusshera. Derived from the Sanskrit word 'Padatika', meaning infantry, this dance serves as a rallying call, symbolizing readiness for a spirited battle. Accompanied by musical instruments like Dholak, Nagara, Shehnai, and Dhak drums, the Paika Nrutya dance embodies the district's cultural richness.

| <b>Table 1.1: Socio-economic and Demographic Features - Khordha District</b> |              |
|------------------------------------------------------------------------------|--------------|
| <b>Indicators</b>                                                            | <b>Value</b> |
| Population (in Lakh.) (As per Census 2011)                                   | 22.51        |
| Male (in Lakh.)                                                              | 11.67        |
| Female (in Lakh.)                                                            | 10.84        |
| Scheduled Castes (in Lakh.)                                                  | 2.97         |
| Scheduled Tribes (in Lakh.)                                                  | 1.15         |
| Total HHs (in Lakh.)                                                         | 4.94         |
| Average HH Size (in Nos.)                                                    | 4.36         |
| Sex Ratio (in Nos.)                                                          | 929          |
| Total Worker (in Lakh)                                                       | 7.92         |
| Main (in Lakh)                                                               | 6.32         |
| Marginal (in Lakh)                                                           | 1.59         |
| Non-Worker (in Lakh)                                                         | 14.59        |
| Work Participation Rate (WPR in%)                                            | 64.82        |
| Literacy Rate (in %)                                                         | 86.88        |
| <b>Land Use Pattern 2018-19 (Area in '000 Hectares)</b>                      |              |
| Total Geographical Area                                                      | 281          |
| Forest                                                                       | 62           |
| Land Put to Non-Agricultural Use                                             | 46           |
| Barren & Non-Cultivable Land                                                 | 15           |
| Permanent Pasture & Other Agricultural Land                                  | 5            |
| Net Area Sown                                                                | 104          |
| Cultivable Waste Land                                                        | 8            |
| Other Fallow                                                                 | 6            |
| Current Fallows                                                              | 25           |
| Misc. Trees and Groves                                                       | 4            |
| <b>Agriculture 2018-2019*</b>                                                |              |
| Average Fertilizer Consumption per ha (in kg/ha)                             | 67.43        |
| Total Production of Major Crops (In '000 MT)                                 | 192.47       |
| Total Ragi Production (in '000 MT)                                           | 0            |
| <b>Irrigation Potential Created in 2017-2018* (Area in '000 Hectares)</b>    |              |

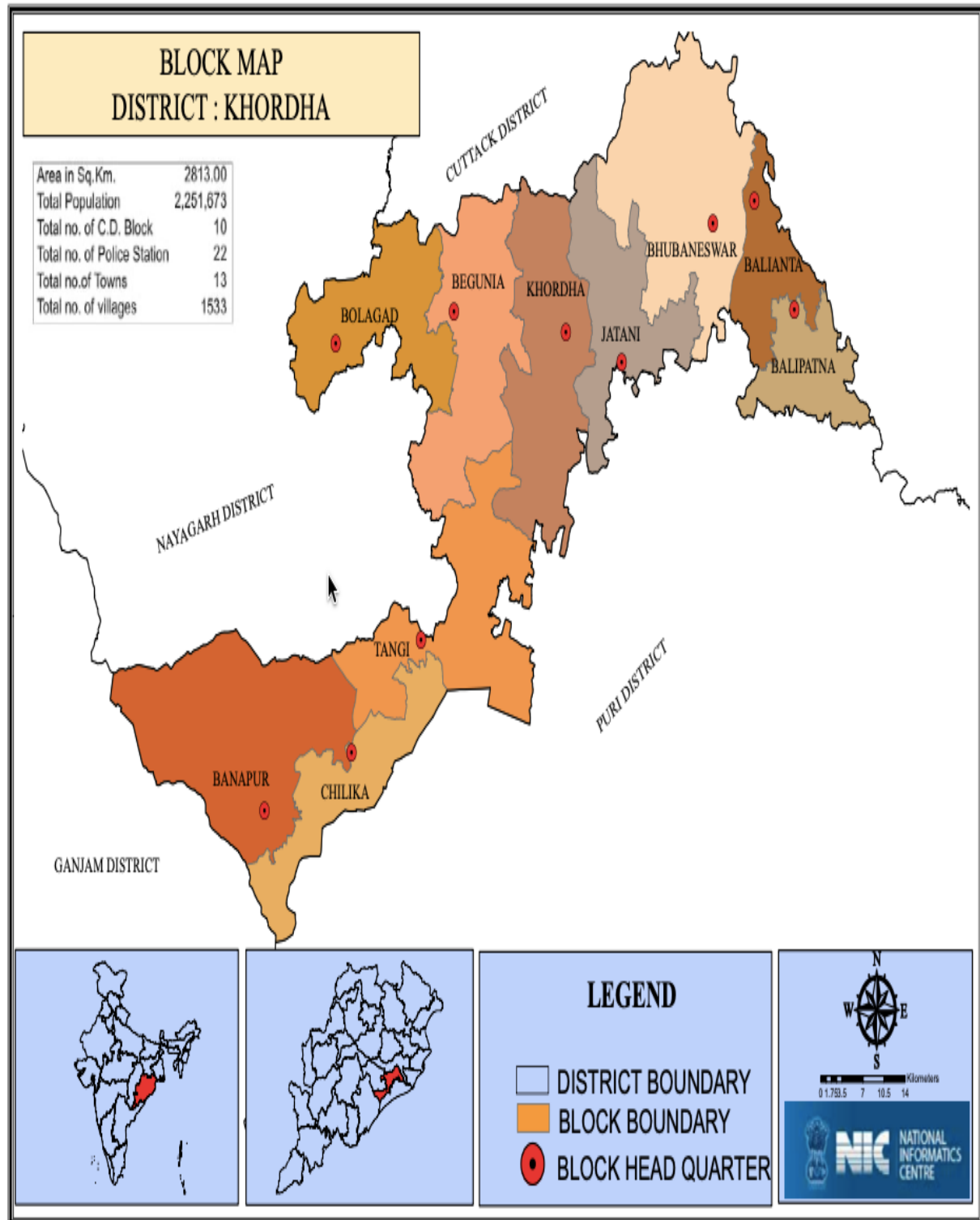
|                                                                                                                                                                                                                                                                                       |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Kharif                                                                                                                                                                                                                                                                                | 110.281 |
| Rabi                                                                                                                                                                                                                                                                                  | 53.556  |
| <b>Other Information</b>                                                                                                                                                                                                                                                              |         |
| No. of Village Electrified (as on 31.03.21)                                                                                                                                                                                                                                           |         |
| No. of Banks (as on 31.03.21)                                                                                                                                                                                                                                                         | 50      |
| No. of AWC                                                                                                                                                                                                                                                                            |         |
| No. of PDS Centres (2011)                                                                                                                                                                                                                                                             | 557     |
| No. of Job Card Issued (since inception in Lakh)                                                                                                                                                                                                                                      | 1.19    |
| Person days provided employment through MGNREGA 2019- 2020 (in Lakh)                                                                                                                                                                                                                  | 10.29   |
| <i>Sources:</i><br><br>1. <i>District Statistical Handbook, Khordha 2018 and Odisha Agricultural Statistics 2018-2019</i><br><br>2. <a href="https://nfsa.gov.in/public/nfsadashboard/PublicFPSDDashboard.aspx">https://nfsa.gov.in/public/nfsadashboard/PublicFPSDDashboard.aspx</a> |         |

Bhubaneswar, the capital city, was once home to over a thousand temples, earning it the moniker “Temple City.” While urban development has transformed the landscape, numerous temples still grace the city, including the iconic Lingaraj Temple, Lakshmanesvara group, Parasuramesvara Temple, and many others. The Lingaraj Temple, towering above the city, is a symbol of architectural magnificence. Contemporary temples like Ram Mandir and ISKON complement the ancient ones. Initiatives such as Ekamra Haat and SRIJAN, the Odissi Dance Academy founded by Guru Kelucharan Mohapatra, contribute to preserving and promoting Odisha’s Cultural Heritage.

Stone carving stands out as a prominent handicraft in Odisha, reflecting centuries of disciplined craftsmanship. The artisans, adept at working with various materials, create intricate sculptures and replicas of temple art. The art of stone carving has produced masterpieces like the temples of Parsurameswar, Mukteswar, Lingaraja, Jagannatha, and the iconic Sun Temple at Konark. The craftsmen skilfully use materials ranging from soft white soapstone to hard granite, employing simple tools like hammers and chisels. Motifs from temple sculptures inspire their creations, ensuring continuity in the rich sculptural traditions of Odisha. Odisha’s craftsmen exhibit their skills in diverse forms, from decorative votive articles to stoneware utensils. The Handicrafts Museum in Bhubaneswar showcases the artistry, including the Konark horse and wheel replicas. Notable examples are the colossal Buddha images and friezes at the Shanti Stupa in Dhuli. The handicraft tradition is carried on in Puri, Bhubaneswar, Lalitgiri, and Khiching.

The enduring traditions, passed down through generations, find expression not only in ornamental and votive articles but also in stoneware utensils crafted for daily use. From polished plates to deep containers, the artisans in Baulagadia and Nilgiri continue to contribute to this living heritage.

**Fig.1.1: Map of Khordha District**



source: <https://gisodisha.nic.in/Block/KHORDA.pdf>

### **1.2.4 Administration**

Khordha town functions as the administrative hub of the district, encompassing two sub-divisions: Bhubaneswar and Khordha. The district is organized into 10 Tahsils and 10 blocks, including Bhubaneswar, Baliana, Balipatna, Jatni, Khordha, Begunia, Bolagarh, Banapur, Tangi, and Chilika. Within Khordha district, there are 1,455 villages distributed among 190 Gram Panchayats, alongside a Municipal Corporation (Bhubaneswar), two Municipalities (Khordha), and Jatni. Additionally, two Notified Area Councils (NACs), namely, Balugaon and Banapur, and 25 Police Stations contribute to the administrative structure. The political landscape of Khordha includes eight Assembly Constituencies (Vidhan Sabha): Jayadev (S.C.), Bhubaneswar (Madhya), Bhubaneswar (Uttar), Ekamra-Bhubaneswar, Jatani, Begunia, Khordha, and Chilika. Moreover, the district features one Parliamentary constituency (Lok Sabha) centered in Bhubaneswar, while the Chilika block falls under the jurisdiction of the Puri Parliamentary constituency. This administrative framework delineates the governance and representation structures within Khordha district.

### **1.3 Objectives**

The Baseline Survey 2023 intended to collect primary data from the millets farming households at the village level on the current practices on cultivation, including production, consumption, processing, and marketing. The collected information would provide background information for planning and implementing the programme as well as it will be useful for evaluation of the programme in the future. The objectives of the Baseline Survey are:

- a. To assess the socio-economic condition of the HHs.
- b. To outline millet production, productivity, and package of practices.
- c. To examine the consumption pattern of millets and
- d. To elucidate the method of processing and mode of marketing.

### **1.4 Methodology**

#### **1.4.1 Sample Design**

The SAA programme has been implemented in phased manner. It started with 8 Districts of the State in Phase I, during 2017-2018 however, later it has expanded to all 30 districts in different phases. Under Phase VII of the implementation of the programme, the Government of Odisha's Department of Agriculture and Farmers Empowerment introduced the "Special Programme for Promotion of Millets in Tribal Areas of Odisha" included an additional 58 blocks across 17 districts of the state including Banapur and Tangi Block of Khordha district.

From the list provided by the SAA Programme Secretariat, there were 480 beneficiary/programme households in 47 villages under 21 Gram Panchayats (GPs) in both Banapur and Tangi Block of Khordha district. For conducting the Baseline Survey 2023, Phase VII, multi-stage sampling methods has been followed. In the first stage, two blocks, namely, Banapur and Tangi have been purposively selected for the study as SAA is going to be implemented in the district during Phase VII.

The programme is going to be implemented in six GPs of Banapur and Tangi block. In the second stage, two GPs from each Banapur, and Tangi block have been selected for the study in consultation with the respective facilitating agencies (F.A.s) and district-level officials of the agriculture department, viz. Damia barbara and Niladri Prasad GPs from the Banapur blocks and Rameswar and Tankolo GPs from Tangi Block have been selected for the study.

| <b>Table 1.2: Sample Households under the Baseline Survey in Khordha District</b> |                                   |                                |                                                                 |
|-----------------------------------------------------------------------------------|-----------------------------------|--------------------------------|-----------------------------------------------------------------|
| <b>Blocks</b>                                                                     | <i>Programme Households (No.)</i> | <i>Sample Households (No.)</i> | <i>% Of HHs Covered under the Survey to Programme Household</i> |
| <b>Banapur</b>                                                                    | 182                               | 80                             | 43.96                                                           |
| <b>Tangi</b>                                                                      | 298                               | 80                             | 26.85                                                           |
| <b>Total</b>                                                                      | 480                               | 160                            | 33.33                                                           |

*Sources: Facilitating Agency and Field Survey 2023*

In the third stage, again two villages from each (four) GPs have been randomly selected for the study and in the final stage 20 households from each village have been randomly selected for the study. Therefore, a total of 160 households from eight villages, covering four GPs under the two Blocks are selected for the study (Table 1.2).

#### **1.4.2 Data Collection, Compilation, and Analysis**

This comprehensive baseline survey report is based on both secondary and primary data. Primary data was collected by using a structured Household Interview Schedule (Annexure II) from the concerned villages of the districts. Additionally, secondary data on geographical information, population, agriculture, education, irrigation, forest, and institutions were collected from various published and unpublished sources, including the 2011 Census reports, Odisha Agricultural Statistics, and so on.

To supplement and compliment the findings of the Baseline Survey, informal discussions were held with key respondents, officials of both facilitating agencies including others village level officials in each sample village as well as block level officials to gather more information and insights about the villages, especially, the status, problems, and opportunities of millets cultivation. This qualitative data helped in providing a more holistic understanding of the local context, which was further used to triangulate and validate the findings of the quantitative data collected through the survey.

The Baseline Survey, 2023 aimed to collect data on various socio-economic indicators such as household demographics, income, livelihoods, education, health, and access to basic amenities like water and sanitation facilities. The findings of the survey are analysed by using appropriate statistical tools and techniques to generate a comprehensive Baseline Study Report.

## **1.5 Limitations of the Study**

The present Baseline Survey (Phase VII) focuses solely on Banapur and Tangi block of the district to assess the situation of millets production, consumption, processing, and marketing. However, due to the onset of the ongoing agricultural activities during the survey, coupled with both in and out-migration, some household heads and female respondents were found to be absent during the data

collection process. Despite these challenges, necessary steps were taken to overcome such challenges without compromising the quality of during data. However, it is important to acknowledge the limitations of the present study.

Firstly, due to logistical reasons and other difficulties, such as the non-availability of respondents, the study was limited to a random sample of 80 households. Secondly, there is the possibility of recall error, especially in cases involving the actual quantity of consumption and marketing, among others. Lastly, in some instances, sample households, particularly non-participant farmer households, consumed millets without producing them. This was made possible by past stock and acquiring of millets through exchange and barter. Unfortunately, these details were not captured during the survey. It is essential to consider these limitations while interpreting the findings of the survey. Future studies can address these gaps and improve the accuracy of the data collection process. Despite these limitations, the present survey provides valuable insights into the socio-economic conditions of the selected households and serves as a baseline to measure the progress made in the future.

## **1.6 Chapters**

The 'Baseline Survey Report 2023, Phase VII' has been divided into six Chapters, including the current Introductory Chapter I, which provided the District Profile, Objectives, Methodology and Limitations. Chapter II provides the Social and Economic Profile. Chapter III provides details on the Production and Productivity of Millets. Chapter IV discusses the Consumption Pattern of Millets. Chapter V elucidates the Processing and Marketing of Millets.

## Chapter II

### SOCIO AND ECONOMIC PROFILE

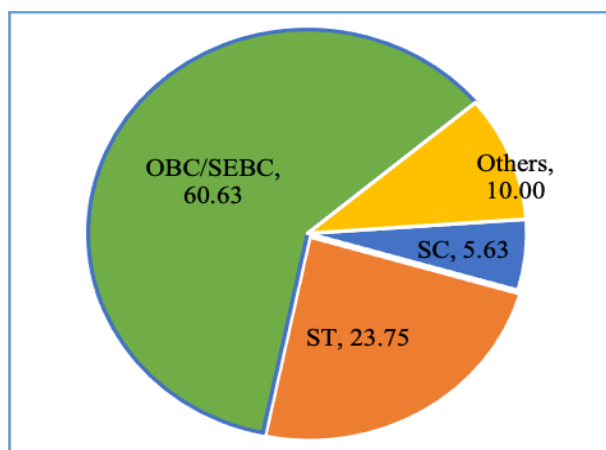
#### 2.1 Introduction

This chapter investigates the social and demographic profile of households surveyed under the Baseline Survey 2023 Phase VII, which includes the distribution of sample households by their social categories, and the distribution of the population by gender as well the distribution of population by their education status in Banapur and Tangi Block of Khordha district. Further it provides information about the religious distribution of sample households across the blocks of the district. It also provides information regarding occupational distribution of population in the sample households. Additionally, it provides information about possession of ration card by the sample households and distribution households by their house structure. Under the Baseline Survey 2023, Phase VII four selected GPs were surveyed in Banapur and Tangi blocks of Khordha district (for the Methodology, see Section 1.4.1). This section discussed the social composition of the sample households, their economic activities, poverty status and housing structures.

#### 2.2 Social and Demographic Profile

The analysis of social composition of sample households under the Baseline Survey 2023, Phase VII in Khordha district is presented in the Fig 2.1 and Table 2.1. It shows that out of total of 160 sample households, a significant majority of households, i.e., about 60.63 per cent belongs to Other Backward Class (OBC)/ Socially and Educationally Backward Class (SEBC), about 23.75 per cent of them belong to Scheduled Tribe (STs), and about 5.63 per cent of them belongs to Schedule Caste (SC) while rest of the 10 per cent of sample households belong to the Other Social Groups.

Fig.2.1: Social composition



The block-wise distribution of sample households reveals the numerical preponderance (75 per cent) of OBS/SEBCs in the Tangi block, while it is about 46.25 per cent in Banapur block. Further, households belong to STs communities in Banapur consist of about 47.50 per cent, while none of the sample households in Tangi block belong to it. On the contrary, the share of S.C.s households in the sample is about 11.25 per cent in Tangi block while none of the sample households in Banapur belong to it. The share of other social groups in Tangi block is higher than Banapur block which consist of 13.75 per cent and 6.25 per cent of sample households, respectively.

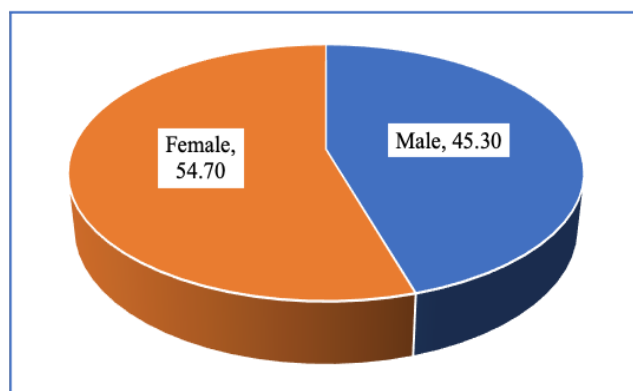
| Table 2.1: Social Composition of the Sample HHs |    |       |    |       |          |       |        |       |       |     |
|-------------------------------------------------|----|-------|----|-------|----------|-------|--------|-------|-------|-----|
| Blocks                                          | SC |       | ST |       | OBC/SEBC |       | Others |       | Total |     |
|                                                 | N  | %     | N  | %     | N        | %     | N      | %     | N     | %   |
| Banapur                                         | 0  | 0.00  | 38 | 47.50 | 37       | 46.25 | 5      | 6.25  | 80    | 100 |
| Tangi                                           | 9  | 11.25 | 0  | 0.00  | 60       | 75.00 | 11     | 13.75 | 80    | 100 |
| Total                                           | 9  | 5.63  | 38 | 23.75 | 97       | 60.63 | 16     | 10.00 | 160   | 100 |

Source: Baseline Field Survey 2023

### 2.3 Distribution of Sample Population by their Sex

Fig.2.2 and Table 2.2 present the distribution of sample population by their sex across the sample households in the Banapur and Tangi Blocks of the district. It shows that the female population among the sample households is higher (54.70 per cent) than male population which is about 45.30 per cent of the total population of sample households.

Fig. 2.2: Sample Population by their Sex



| Table 2.2: Distribution of Sample Population by their Sex |      |       |        |       |       |       |
|-----------------------------------------------------------|------|-------|--------|-------|-------|-------|
| Blocks                                                    | Male |       | Female |       | Total |       |
|                                                           | N    | %     | N      | %     | N     | %     |
| Banapur                                                   | 146  | 45.48 | 175    | 54.52 | 321   | 50.31 |
| Tangi                                                     | 143  | 45.11 | 174    | 54.89 | 317   | 49.69 |
| Total                                                     | 289  | 45.30 | 349    | 54.70 | 638   | 100   |

Source: Baseline Survey, 2023

Likewise, the block-wise distribution of population among the sample households shows similar picture in both blocks. The share of female population in Banapur block is about 54.52 per cent while it is 54.89 per cent in Tangi block. Similarly, the share of male population in Banapur block is 45.48 per cent while it is 45.11 per cent in Tangi block.

## 2.4 Marital Status

Table 2.3 shows that the distribution of population among the sample households under SAA phase VII blocks of Khordha district. It shows that majority (57.68 per cent) of the population are married and about 38.56 per cent of them are unmarried which also includes younger population like children and students, while the share of population belonging to widow, widower and divorced categories constitute about 2.35 per cent, 1.10 per cent and 0.31 per cent, respectively.

The block-wise distribution of population among sample households also shows that the share of married population in both districts is higher than other categories as it constitutes about 63.09 per cent in Tangi block and 52.34 per cent in Banapur block. While the share of unmarried population in Banapur block is higher than the Tangi block with 43.61 per cent and 33.44 per cent, respectively. Further, the share of widow in Tangi block is about 2.84 per cent while it is 1.87 per cent in Banapur block. Similarly, the share of widower population in Banapur is higher (1.56 per cent) than Tangi block which is 0.63 per cent of the total population among the sample households. There are only 0.63 per cent divorced population in Banapur block.

| Table 2.3: Distribution of Sample Population by their Marital Status |           |       |         |       |       |      |         |      |          |      |       |        |
|----------------------------------------------------------------------|-----------|-------|---------|-------|-------|------|---------|------|----------|------|-------|--------|
| Blocks                                                               | Unmarried |       | Married |       | Widow |      | Widower |      | Divorced |      | Total |        |
|                                                                      | N         | %     | N       | %     | N     | %    | N       | %    | N        | %    | N     | %      |
| Banapur                                                              | 140       | 43.61 | 168     | 52.34 | 6     | 1.87 | 5       | 1.56 | 2        | 0.62 | 321   | 50.31  |
| Tangi                                                                | 106       | 33.44 | 200     | 63.09 | 9     | 2.84 | 2       | 0.63 | 0        | 0.00 | 317   | 49.69  |
| Total                                                                | 246       | 38.56 | 368     | 57.68 | 15    | 2.35 | 7       | 1.10 | 2        | 0.31 | 638   | 100.00 |

Source: Baseline Survey, 2023

## 2.5 Distribution of Sample Population by their Age Group

In table 2.4 the age group wise distribution of population among the sample households across the two blocks of Khordha district. It reveals that a significant majority of them (43.26 per cent) are adult population between the age-group of 19-44 which is also the working age-group while about 29.78 per cent of the population belong to sample households are middle-aged (45-59 years of age).

Further, about 9.87 per cent of them are Adolescent (13-18 years), about 5.96 per cent of them are children belong to the age group of 6-12 years of age, and about 2.35 per cent of them are pre-school children (3-5 years of age). While about 7.74 per cent of them are old (above 60 years) and only 0.94 per cent of them are Infants (0-2 years).

The block-wise distribution of population among the sample households presented in the Fig.2.4. It shows that in Tangi block population between the age-group of 19-44 years of age is higher than Banapur block, which constitute about 45.43 per cent of them in former and 41.12 per cent of them are in the later. While, the middle-aged (45-59 years) population in Banapur block is found to be higher than Tangi block i.e., 34.89 per cent and 24.61 per cent, respectively. Similarly, in Banapur block the

share of Adolescent (13-18 years) is higher than Tangi block which constitute about 11.84 per cent and 7.89 per cent, respectively. Likewise, the share of Children between the age group of 6-12 years in the total population among the sample households in Banapur block is again found to be higher than Tangi block, which constitute about 6.54 per cent and 5.36 per cent, respectively. While the share of population belonging to old-age group (above 60 years) in Tangi block is higher than the Banapur block with 11.99 per cent in the former and about 3.74 per cent in the later. Similarly, the share of Pre-school children among the total population is about 2.84 per cent in Banapur block which is higher than their share in Tangi block with 1.87 per cent. Further, the Infant population (0-2 years) constitute about 1.89 per cent of them in Tangi block.

**Table 2.4: Distribution of Sample Population by their Age Group**

| Age Group                     | Blocks  |        |       |        | Total |       |
|-------------------------------|---------|--------|-------|--------|-------|-------|
|                               | Banapur |        | Tangi |        |       |       |
|                               | N       | %      | N     | %      | N     | %     |
| Infant (0-2 Year)             | 0       | 0.00   | 6     | 1.89   | 6     | 0.94  |
| Preschool (3-5 Year)          | 6       | 1.87   | 9     | 2.84   | 15    | 2.35  |
| Children (6-12 Year)          | 21      | 6.54   | 17    | 5.36   | 38    | 5.96  |
| Adolescent (13-18 Year)       | 38      | 11.84  | 25    | 7.89   | 63    | 9.87  |
| Adults (19-44 Year)           | 132     | 41.12  | 144   | 45.43  | 276   | 43.26 |
| Middle Age (45-59 Year)       | 112     | 34.89  | 78    | 24.61  | 190   | 29.78 |
| Old (60 And above)            | 12      | 3.74   | 38    | 11.99  | 50    | 7.84  |
| Total                         | 321     | 100.00 | 317   | 100.00 | 638   | 100   |
| Source: Baseline Survey, 2023 |         |        |       |        |       |       |

## 2.6 Education

Table 2.5 shows the distribution of population among sample households by their educational qualification. It shows that only 8.93 per cent of them are illiterate, while rest of them received some level of education. Among the literate population about 39.18 per cent of them received education between classes 6-10, 23.20 per cent of them received education up to Higher Secondary level, while about 14.11 per cent of them received education up to graduation level. Again, about 10.82 per cent of them received education up to class 5, about 1.57 per cent of them received technical education and only 0.78 per cent of them received post-graduate education while about 1.41 per cent of them received other education.

**Table 2.5: Distribution of Sample Population by their Education**

| <b>Education</b>        | <b>Blocks</b>  |        |              |        | <b>Total</b> |        |
|-------------------------|----------------|--------|--------------|--------|--------------|--------|
|                         | <b>Banapur</b> |        | <b>Tangi</b> |        |              |        |
|                         | <i>N</i>       | %      | <i>N</i>     | %      | <i>N</i>     | %      |
| <b>Illiterate</b>       | 12             | 3.74   | 45           | 14.20  | 57           | 8.93   |
| <b>Up To Class 5</b>    | 31             | 9.66   | 38           | 11.99  | 69           | 10.82  |
| <b>Class 6-10</b>       | 156            | 48.60  | 94           | 29.65  | 250          | 39.18  |
| <b>Higher Secondary</b> | 61             | 19.00  | 87           | 27.44  | 148          | 23.20  |
| <b>Graduation</b>       | 52             | 16.20  | 38           | 11.99  | 90           | 14.11  |
| <b>Post-Graduate</b>    | 4              | 1.25   | 1            | 0.32   | 5            | 0.78   |
| <b>Technical</b>        | 5              | 1.56   | 5            | 1.58   | 10           | 1.57   |
| <b>Professional</b>     | 0              | 0.00   | 0            | 0.00   | 0            | 0.00   |
| <b>Others</b>           | 0              | 0.00   | 9            | 2.84   | 9            | 1.41   |
| <b>Total</b>            | 321            | 100.00 | 317          | 100.00 | 638          | 100.00 |

Source: Baseline Survey, 2023

Distribution of population among the sample households by their educational across the blocks is presented in Table 2.5. It shows that the share of illiterate population in Tangi block is higher than Banapur block which consists of about 14.20 per cent and 3.74 per cent, respectively. Among the literate population majority, 48.60 per cent of them have educational qualification between 6-10 classes in Banapur block, while it is 29.65 per cent in Tangi block. It is also found that the share of population with Higher Secondary level qualification is higher in Tangi block than Banapur block with 27.44 per cent and 19 per cent, respectively. Further, the share of the population with Graduation Degree is higher in Banapur block than Tangi block, which constitute about 16.20 per cent and 11.9 per cent of them, respectively. While, among the population who have up to class five level of education is higher in Tangi block with 11.99 per cent and 9.66 per cent in Banapur block. The share of population with post-Graduation is higher, i.e., 1.25 per cent and them in Banapur block and 0.32 per cent of them in Tangi block. While there are 2.84 per cent of them have other educational qualification.

## 2.7 Religion of the Sample HHs

In the Baseline Survey it is revealed that all the sample households across both blocks reported about their religion as Hindu.

## 2.8 Type of Family

Table 2.6 present the distribution of sample households by their family type. It reveals the out of the total sample households there is an overwhelming presence of nuclear family with 97.50 per cent while only 2.50 per cent of them are joint families.

| Table 2.6: Distribution of Sample HHs by their Type of Family |                |       |       |      |          |   |        |   |       |     |
|---------------------------------------------------------------|----------------|-------|-------|------|----------|---|--------|---|-------|-----|
| Blocks                                                        | Type of Family |       |       |      |          |   |        |   |       |     |
|                                                               | Nuclear        |       | Joint |      | Extended |   | Others |   | Total |     |
|                                                               | No             | %     | No    | %    | No       | % | No     | % | No    | %   |
| Banapur                                                       | 80             | 100   | 0     | 0.00 | 0        | 0 | 0      | 0 | 80    | 100 |
| Tangi                                                         | 76             | 95.00 | 4     | 5.00 | 0        | 0 | 0      | 0 | 80    | 100 |
| Total                                                         | 156            | 97.50 | 4     | 2.50 | 0        | 0 | 0      | 0 | 160   | 100 |

Source: Baseline Survey 2023

## 2.9 Possession of Ration Card by the Sample HHs

As revealed in the Baseline Survey (Table 2.7) the distribution of sample households by their ration card possession stats. It reveals that a very significant majority, 93.75 per cent of households. Possess ration cards. However, block-wise distribution of sample households by their ration card holding status show that all the sample households in Banapur block possess it while about 87.50 per cent of them in Tangi block possesses ration card and rest of 6.25 per cent of them do not possess it.

| Table 2.7: Sample HHs by their possession of Ration Card |              |       |              |       |       |     |
|----------------------------------------------------------|--------------|-------|--------------|-------|-------|-----|
| Blocks                                                   | HHs without  |       | HHs with     |       | Total |     |
|                                                          | Ration Cards |       | Ration Cards |       |       |     |
|                                                          | N            | %     | N            | %     | N     | %   |
| Banapur                                                  | 0            | 0.00  | 80           | 100   | 80    | 100 |
| Tangi                                                    | 10           | 12.50 | 70           | 87.50 | 80    | 100 |
| Total                                                    | 10           | 6.25  | 150          | 93.75 | 160   | 100 |

Source: Baseline Survey, 2023

## 2.10 Pattern of Land Ownership

Table 2.8 shows the distribution of sample households by their landownership status across both, Banapur and Tangi blocks of Khordha district. It reveals that majority of them are small holders, i.e., about 63.75 per cent of them own between 2 to 5 acres of land, followed by 33.13 per cent marginal holders who own land less than two acres, while about 3.13 per cent of them owns land between 5 to 10 acres.

| Table 2.8: Distribution of Sample HHs by their Land Ownership (in Acre) |         |       |       |       |       |       |
|-------------------------------------------------------------------------|---------|-------|-------|-------|-------|-------|
| Land Ownership                                                          | Banapur |       | Tangi |       | Total |       |
|                                                                         | N       | %     | N     | %     | N     | %     |
| No Land                                                                 | 0       | 0.00  | 0     | 0.00  | 0     | 0     |
| Less than 2 Acres                                                       | 24      | 30.00 | 29    | 36.25 | 53    | 33.13 |
| 2 Acres to 5 Acres                                                      | 53      | 66.25 | 49    | 61.25 | 102   | 63.75 |
| 5 Acres to 10 Acres                                                     | 3       | 3.75  | 2     | 2.50  | 5     | 3.13  |
| More than 10 Acres                                                      | 0       | 0.00  | 0     | 0.00  | 0     | 0     |
| Total                                                                   | 80      | 100   | 80    | 100   | 160   | 100   |

Source: Baseline Survey, 2023

It shows that the share of small landowners in Banapur is 66.25 per cent of the total sample households of the block which is higher than Tangi block which is 61.25 per cent. Whereas the share of marginal landowners is higher in Tangi block with 36.25 per cent while it is 30 per cent in Banapur block. Again, the share of middle landowners 3.75 per cent of them in Banapur which is higher than Tangi block which has about 2.50 per cent of middle landowners. None of the households across both districts is landless.

## 2.11 Sample Population by their Occupation

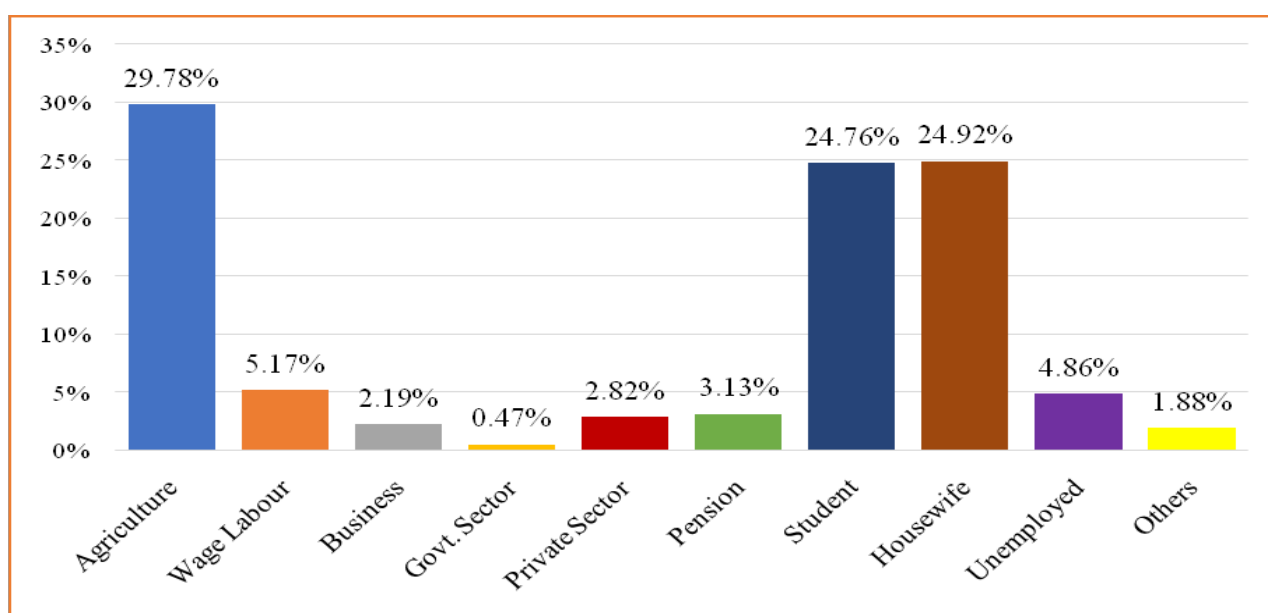
Fig. 2.3 and Table 2.9 describe the distribution of population among the sample households by their main occupation reveals that about 29.78 per cent of them are engaged in agriculture as their main occupation; about 5.17 per cent of them are wage labour while the share of government and private sector employees is 0.47 per cent and 2.82 per cent, respectively. Further, about 2.19 per cent of them are business owners, 3.13 per cent of them are pensioner and another 1.88 per cent of them have other occupations. Again, the share of housewives, student is 24.92 per cent and 24.76 per cent, respectively. While rest of the 4.86 per cent of population in the working age groups are unemployed.

The block-wise distribution of population among the sample households across both the block is presented in table 2.9. It shows that in Banapur block the share student population is highest among occupational groups with 31.78 per cent of the total population of sample households in the block. In both the blocks, among the sample population there is no secondary occupation.

| Table 2.9: Distribution of Sample Population by their Occupation |         |       |       |       |       |       |
|------------------------------------------------------------------|---------|-------|-------|-------|-------|-------|
| Occupations                                                      | Blocks  |       |       |       | Total |       |
|                                                                  | Banapur |       | Tangi |       |       |       |
|                                                                  | N       | %     | N     | %     | N     | %     |
| Agriculture                                                      | 96      | 29.91 | 94    | 29.65 | 190   | 29.78 |
| Wage Labour                                                      | 7       | 2.18  | 26    | 8.20  | 33    | 5.17  |
| Business/<br>Entrepreneurship                                    | 8       | 2.49  | 6     | 1.89  | 14    | 2.19  |
| Govt. Sector                                                     | 1       | 0.31  | 2     | 0.63  | 3     | 0.47  |
| Private Sector                                                   | 5       | 1.56  | 13    | 4.10  | 18    | 2.82  |
| Pension/ Remittances                                             | 8       | 2.49  | 12    | 3.79  | 20    | 3.13  |
| Student                                                          | 102     | 31.78 | 56    | 17.67 | 158   | 24.76 |
| Housewife                                                        | 79      | 24.61 | 80    | 25.24 | 159   | 24.92 |
| Unemployed                                                       | 15      | 4.67  | 16    | 5.05  | 31    | 4.86  |
| Others                                                           | 0       | 0.00  | 12    | 3.79  | 12    | 1.88  |
| Total                                                            | 321     | 100   | 317   | 100   | 638   | 100   |

Source: Baseline Survey, 2023

Fig. 2.3: Distribution of Sample Population by their Occupation



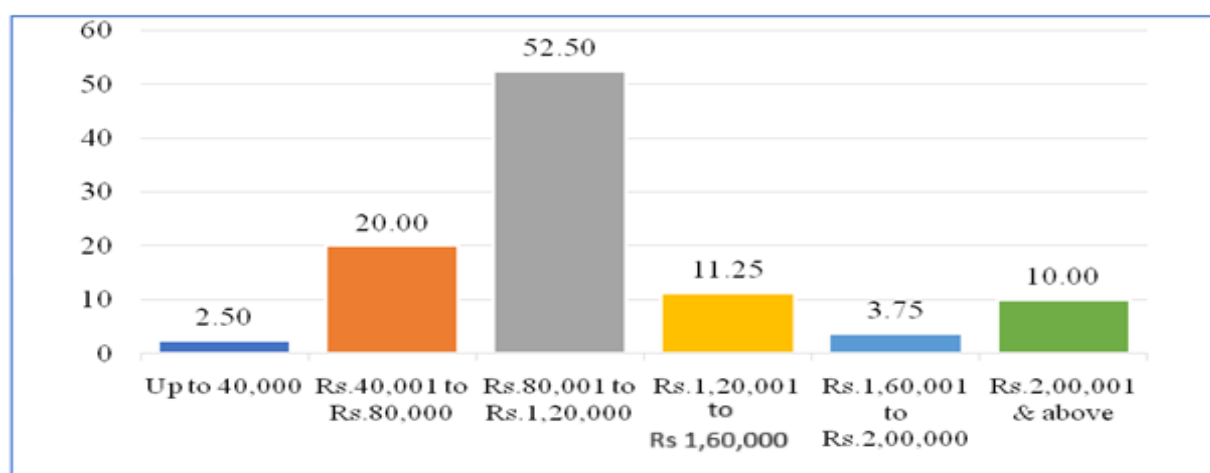
About 29.91 per cent of them are associated with agriculture as their primary occupation, while only 2.18 per cent of them are wage labour. The share of business owners, government, and private sector employee and in Banapur block is 2.49 per cent, 0.31 per cent and 1.56 per cent of them, respectively. Further, about 2.49 per cent of them are pensioner. As observed, the share of number of Students and Housewives to the total population is 31.78 per cent and 24.61 per cent of the total population of the sample households in the block and rest of the 4.67 per cent of them who belong to Working Age Groups are found to be unemployed.

Similarly, in Tangi block out of the total population of sample households about 29.65 per cent of them are associated with agriculture as their main occupation and about 8.20 per cent of them are wage labour which is higher than the Banapur block. The share of business owners, pension holder, government and private employees in the block is 1.89 per cent, 3.79 per cent, 0.63 per cent and 4.10 per cent, respectively. While rest of the 3.79 per cent of the total population of the sample households are associated with others occupation. However, the share of housewives and students is about 25.24 per cent and 17.67 per cent of them (table 2.9).

## 2.12 Sample HHs' Annual Income

Fig. 2.4 and Table 2.10 shows the distribution of sample households by their annual income. It reveals that more than half of the sample households earn between Rs.80001/- to Rs.120000/- rupees annually, 20 per cent of them earns between Rs.40001/- to Rs.80000/- rupees, 11.25 per cent of them earns up to Rs.120001/-to Rs16000/- rupees. Further, about 3.75 per cent of them earn between Rs.160001/-to Rs.200001/- rupees, 2.50 per cent of them earns up toRs.40000/- rupees annually while rest of the 10 per cent of them earn above Rs.200000/- rupees per year.

**Fig 2.4: Distribution of Sample HHs by their Annual Income (%)**



The block-wise distribution of sample households by their annual income is presented in table2.10. It shows that in Banapur block majority of them (58.75 per cent) of them earning between s.80001/- to Rs.120000/-rupees per year, about 22.50 per cent of them are earning between Rs.40001/- to Rs.80000/- rupees per year, about another 6.25 per cent of them are earning between Rs.120001/- to

Rs.160000/-rupees per year, about 2.50 per cent of them are earning about less than Rs.40000/- rupees per year while about 10 per cent of them earning more than Rs.200000/- rupees per year.

Similarly, in Tangi block out of the total sample households, majority (46.25 per cent) of the sample HHs are earning between Rs.80001/- to Rs.120000/- rupees per year, 17.50 per cent of them are earning about Rs.40001/- to Rs.80000/- rupees per year, and 16.25 per cent of them earning between Rs.120001/- to Rs.160000/- rupees per year. Further, about 7.50 per cent of them are earning between Rs.160001/- to Rs.200000/- rupees per year, about 2.50 per cent of them are earning less than Rs.40000/- rupees per year while rest of the 10 per cent of them are earning more than 2lakhs rupees per year.

**Table 2.10: Distribution of Sample Households by their Annual Income**

| <b>Blocks</b>  | <i>Up to<br/>Rs.40000</i> |          | <i>Rs.40001<br/>to<br/>Rs.80000</i> |          | <i>Rs.80001<br/>to<br/>Rs.120000</i> |          | <i>Rs.120001<br/>to<br/>Rs.160000</i> |          | <i>Rs.160001<br/>to<br/>Rs.200000</i> |          | <i>Rs.200001<br/>and above</i> |          | <i>Total</i> |          |
|----------------|---------------------------|----------|-------------------------------------|----------|--------------------------------------|----------|---------------------------------------|----------|---------------------------------------|----------|--------------------------------|----------|--------------|----------|
|                | <i>N</i>                  | <i>%</i> | <i>N</i>                            | <i>%</i> | <i>N</i>                             | <i>%</i> | <i>N</i>                              | <i>%</i> | <i>N</i>                              | <i>%</i> | <i>N</i>                       | <i>%</i> | <i>N</i>     | <i>%</i> |
|                |                           |          |                                     |          |                                      |          |                                       |          |                                       |          |                                |          |              |          |
| <b>Banapur</b> | 2                         | 2.50     | 18                                  | 22.50    | 47                                   | 58.75    | 5                                     | 6.25     | 0                                     | 0.00     | 8                              | 10.00    | 80           | 100      |
| <b>Tangi</b>   | 2                         | 2.50     | 14                                  | 17.50    | 37                                   | 46.25    | 13                                    | 16.25    | 6                                     | 7.50     | 8                              | 10.00    | 80           | 100.     |
| <b>Total</b>   | 4                         | 2.50     | 32                                  | 20.00    | 84                                   | 52.50    | 18                                    | 11.25    | 6                                     | 3.75     | 16                             | 10.00    | 160          | 100      |

Source: Baseline Survey, 2023

### 2.13 Type of House among the Sample HHs

**Table 2.11: Distribution of the Sample HHs by their Type of House**

| <b>Blocks</b>  | <i>House Structure</i> |          |                   |          |              |          |              |          |
|----------------|------------------------|----------|-------------------|----------|--------------|----------|--------------|----------|
|                | <i>Kutcha</i>          |          | <i>Semi-Pucca</i> |          | <i>Pucca</i> |          | <i>Total</i> |          |
|                | <i>No</i>              | <i>%</i> | <i>No</i>         | <i>%</i> | <i>No</i>    | <i>%</i> | <i>No</i>    | <i>%</i> |
| <b>Banapur</b> | 8                      | 10.00    | 32                | 40.00    | 40           | 50.00    | 80           | 100      |
| <b>Tangi</b>   | 9                      | 11.25    | 31                | 38.75    | 40           | 50.00    | 80           | 100      |
| <b>Total</b>   | 17                     | 10.63    | 63                | 39.38    | 80           | 50.00    | 160          | 100      |

Source: Baseline Survey 2023

Table 2.11 represents the distribution of sample households by the structure of their house. It reveals that half of the sample households have *Pucca* houses. While about 39.38 per cent of the have *Semi-Pucca* houses and only 10.63 per cent of them have *Kutcha* houses. Similarly, block-wise distribution of

sample households shows that about half of them in both blocks have Pucca houses. While the share of Semi-Pucca houses in Banapur block is slightly higher than Tangi block with 40 per cent and 38.75 per cent, respectively. However, in Tangi block out of the total sample households about 11.25 per cent are Kutcha houses which are higher than Banapur block which consist of 10 per cent of the sample households.

## **2.14 Conclusion**

The socio-economic background of population and sample households shows that there is numerical preponderance of OBC/SEBCs among social groups. While the share of adult population is comparatively higher than other age-groups and majority of them are working in agriculture sector as their main occupation. Further, majority of population in the sample households are literate, among them majority of the have educational qualification between class 6-10. Again, majority of the households are nuclear family and possesses ration card. Again, about half of the sample households have Pucca houses, which is an indicator of better socio-economic condition of the household

## Chapter III

### PRODUCTION OF MILLETS

#### 3.1 Introduction

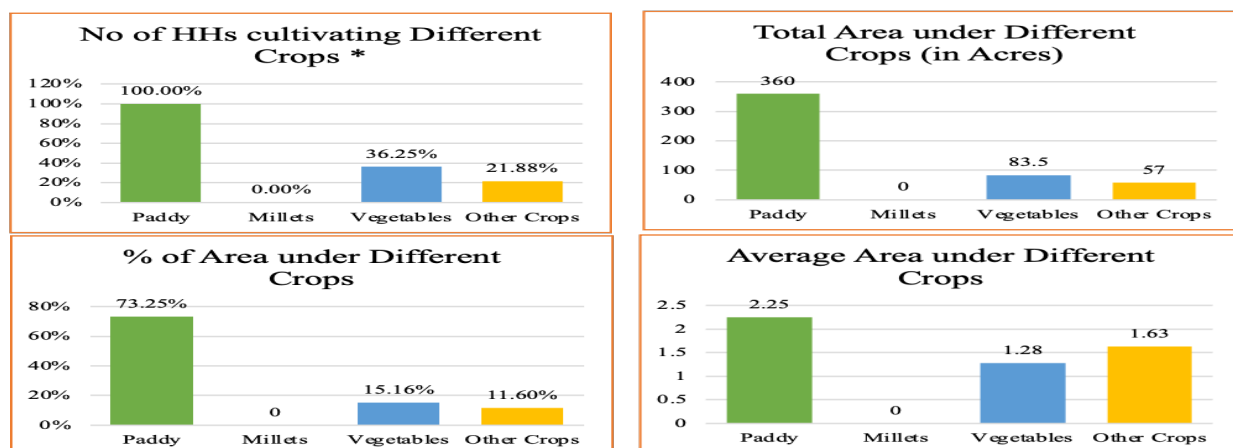
Baseline Survey 2023 was conducted to assess the situation of production, consumption, processing, and marketing of millets in targeted villages before the programme interventions. However, this chapter deals with the millets' production by analysing the data collected from both sample blocks, such as, Banapur and Tangi block of Khordha district. The analysis mainly focuses on the distribution of area under millets and other crops, the usage of seeds and agronomic practices, as well as the production and yield of millets in the sample villages. The Chapter also highlights the challenges and opportunities for promoting millets in the district.

#### 3.2 Area, Production and Yield

Fig 3.1 and Table 3.1 represents the distribution of households cultivating different crops, area under different crops, their percentage as well as average area under different crops. Like other districts of the state, majority of the population in Khordha district earns their livelihoods from agriculture. Figure 3.1 reveals paddy is the dominant crops as it is cultivated by all sample household. In addition to paddy cultivation, about 36.25 per cent of the total sample households are cultivating vegetables, and about 21.88 Percent other crops such as cashew, and lemon including others. It is also observed that none of the sample households are cultivating millets.

The distribution of operational area under various crops shows that a very significant, i.e., 73.25 per cent of total operation area is under paddy cultivation, about 15.16 per cent of total operational land is under vegetables cultivation and about 11.60 per cent of the total operational land is under other crops. Further, distribution of average areas under different crops shows that the average area under paddy is higher than other crops (2.25 acres of land per household), the average area under vegetables is 1.24 per cent and average area under other crops is about 1.63 acres per household.

**Fig.3.1: Operational Area under Different Crops**



As observed in the Baseline Study the block-wise distribution of households by their operational areas under different crops presented in (table3.1). It reflects that paddy is cultivated by all the sample households in both the Banapur and Tangi blocks. While in Banapur block the share of total area under paddy is higher than Tangi and constitutes 75.79 per cent and 70.87 per cent of the total operational land under sample households, respectively. While the average operational area under paddy per households is about 2.25 acres in both blocks.

In Tangi block the share of total area under vegetables is relatively higher than Banapur block which constitute about 14.53 per cent and 15.57 per cent, respectively. Similarly, the average operational area under vegetable per households is about 1.48 acres in Tangi block while it 1.11 acres in Banapur block. Likewise, in Tangi block the share of total area under other crops is higher than Banapur block which constitute about 13.39 per cent and 9.68 per cent, respectively. Further, the average operational area under other crops per households in Tangi and Banapur block constitute about 1.89 acres and 1.35 acres, respectively.

**Table 3.1: Operational Area under Different Crops**

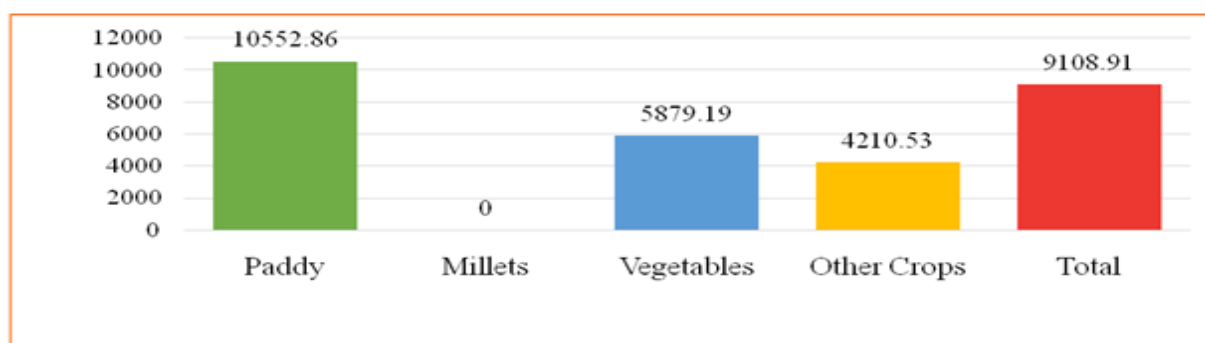
|  | Total | Tangi | Banapur | Blocks | Paddy  |      | Millets |      | Vegetables |      | Other Crops |      | Total Area |
|--|-------|-------|---------|--------|--------|------|---------|------|------------|------|-------------|------|------------|
|  |       |       |         |        | H.H. s | Area | H.H. s  | Area | H.H. s     | Area | H.H. s      | Area |            |
|  |       |       |         |        | N      | %    | N       | %    | N          | %    | N           | %    |            |
|  | 160   | 80    | 80      |        |        |      |         |      |            |      |             |      |            |
|  | 100   | 100   | 100     |        |        |      |         |      |            |      |             |      |            |
|  | 360   | 180   | 180     |        |        |      |         |      |            |      |             |      |            |
|  | 73.25 | 70.87 | 75.79   |        |        |      |         |      |            |      |             |      |            |
|  | 2.25  | 2.25  | 2.25    |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 58    | 27    | 31      |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 74.50 | 40.00 | 34.50   |        |        |      |         |      |            |      |             |      |            |
|  | 15.16 | 15.75 | 14.53   |        |        |      |         |      |            |      |             |      |            |
|  | 1.28  | 1.48  | 1.11    |        |        |      |         |      |            |      |             |      |            |
|  | 35    | 18    | 17      |        |        |      |         |      |            |      |             |      |            |
|  | 0     | 0     | 0       |        |        |      |         |      |            |      |             |      |            |
|  | 57    | 34    | 23      |        |        |      |         |      |            |      |             |      |            |
|  | 11.60 | 13.39 | 9.68    |        |        |      |         |      |            |      |             |      |            |
|  | 1.63  | 1.89  | 1.35    |        |        |      |         |      |            |      |             |      |            |
|  | 491.5 | 254   | 237.5   |        |        |      |         |      |            |      |             |      |            |

Source: Baseline Survey 2023

### 3.3 Expenditure on Different Crops

Fig 3.2 describes the crop-wise distribution of average expenditure per acre among the sample households across both blocks under the study. It reveals that average expenditure in paddy is higher than other crops among the sample households; it is about Rs.10552.86 rupees per acre, while for vegetable it is Rs.5879.19 rupees per acre and Rs.4210.53 per acre for other crops. The average expenditure of all the crops per acre is Rs.9108.91 rupees.

**Fig.3.2: Distribution of Sample HHs by their Expenditure (Average)**



### 3.4 Reasons for not Cultivating Millets by the Sample HHs

Table 3.2 presented the distribution of households by the reasons for which they do not cultivate millets. It shows that most of the sample households in Khordha district are cited not profitability as one of the reasons for which is 40.1 percent. About 20.1 per cent of the sample households are not cultivating millets because of shortage of land. Whereas 39.8 per cent of them in Khordha district are not cultivating it some other reasons. Furthermore, all the sample households who are not cultivating millets reported that they have not been cultivating it since last 10-15 years.

**Table 3.2: Distribution of Sample HHs by their Reason of Not Cultivating Millets**

| Khordha | Total HHs | Not Profitable |      | Shortage of Land |      | Non-Availability of Seed |   | Lack of Irrigation |   | Others |      |
|---------|-----------|----------------|------|------------------|------|--------------------------|---|--------------------|---|--------|------|
|         |           | No             | %    | No               | %    | No                       | % | No                 | % | No     | %    |
|         | 160       | 120            | 40.1 | 60               | 20.1 | 0                        | 0 | 0                  | 0 | 119    | 39.8 |

Source: Baseline Survey, 2023

### 3.5 Conclusion

As revealed in the Baseline Survey, agriculture is the primary occupation for majority of the sample population across the two blocks in the district. While paddy found to be the dominant crop in the district among the sample households. However, it is also found that none of the sample households are not cultivating millets due to a few reasons. Most of them cited non-availability of seeds as well as lack of proper knowledge as the major reasons for not cultivating millets and since many years they are not cultivating the crop.

## Chapter IV

### CONSUMPTION OF MILLETS

#### 4.1 Introduction

The Baseline Survey 2023 was conducted to also assess the patterns of millets consumption in the target villages before implementing the programme in the Banapur and Tangi block of Khordha district. The main objective of this chapter is to analyse patterns of millets consumption among the sample households across the sample GPs of the Banapur and Tangi block of the district. The Chapter also explores the types of millet varieties, recipes and dishes that are consumed by the sample households and how they prepare them. By doing so, the chapter aims to provide a comprehensive picture about the patterns of millets consumption and preferences among the sample households in Khordha district, which is one of the focus areas of SAA.

#### 4.2 Millets Consumption by the Households

The patterns of millets consumption among the sample households of two blocks of Khordha district is presented in the (table 4.1) It shows that, out of the total only about 9.38 per cent of sample households are consuming millets while an overwhelming majority, i.e., about 90.63 per cent of them are not consuming it. However, the average household consumption is 1.14 Kg. per household.

| <b>Table 4.1: Distribution of Sample HHs by their Millets Consumption</b> |                        |                 |                               |                 |                     |                 |
|---------------------------------------------------------------------------|------------------------|-----------------|-------------------------------|-----------------|---------------------|-----------------|
| <i><b>Blocks</b></i>                                                      | <i><b>Consumed</b></i> |                 | <i><b>Did not Consume</b></i> |                 | <i><b>Total</b></i> |                 |
|                                                                           | <i><b>N</b></i>        | <i><b>%</b></i> | <i><b>N</b></i>               | <i><b>%</b></i> | <i><b>N</b></i>     | <i><b>%</b></i> |
| <b>Banapur</b>                                                            | 0                      | 0               | 80                            | 100             | 80                  | 100             |
| <b>Tangi</b>                                                              | 15                     | 18.75           | 65                            | 81.25           | 80                  | 100             |
| <b>Total</b>                                                              | 15                     | 9.38            | 145                           | 90.62           | 160                 | 100             |
| <i><b>Source: Baseline Survey, 2023</b></i>                               |                        |                 |                               |                 |                     |                 |

#### 4.3 Millets Consumption by the Sample HHs across their Age Groups

Table 4.2 present the intergenerational distribution of population among the sample households by their millets consumption. It reveals that, in Banapur block none of them are consuming it. However, the rate of millets consumption is higher among the grown up, i.e., 40.82 per cent for adults (19-44 years) and 26.53 per cent in case of middle aged (45-59 years) population are consuming millets. The rate of millets consumption among preschool children (3-5 years), children (6-12 years), adolescent (13-18 years), and Old (60 & above), is 4.08 per cent, 6.12 per cent, 6.12 per cent and 16.33 per cent, respectively. While none of the infant are consuming millets mainly due to their dietary restrictions.

| Table 4.2: Millets Consumption by Sample Population across Age Groups |         |   |       |       |       |       |
|-----------------------------------------------------------------------|---------|---|-------|-------|-------|-------|
| Age Groups                                                            | Banapur |   | Tangi |       | Total |       |
|                                                                       | N       | % | N     | %     | N     | %     |
| Infant                                                                | 0       | 0 | 0     | 0.00  | 0     | 0.00  |
| Pre-School (3-5 Year)                                                 | 0       | 0 | 2     | 4.08  | 2     | 4.08  |
| Children (6-12 Year)                                                  | 0       | 0 | 3     | 6.12  | 3     | 6.12  |
| Adolescent (13-18 Year)                                               | 0       | 0 | 3     | 6.12  | 3     | 6.12  |
| Adults (19-44 Year)                                                   | 0       | 0 | 20    | 40.82 | 20    | 40.82 |
| Middle Age (45-59 Years)                                              | 0       | 0 | 13    | 26.53 | 13    | 26.53 |
| Old (60 And above)                                                    | 0       | 0 | 8     | 16.33 | 8     | 16.33 |
| Total                                                                 | 0       | 0 | 49    | 100   | 49    | 100   |

Source: Baseline Field Survey, 2023

#### 4.4 Millets Consumption across Seasons

As Table 4.3 reflects that the distribution of sample households by their millets consumption during different seasons in the study area of district. It is also found out that none of the sample households in Banapur block are consuming millets in any seasons. While in Tangi block majority about 18.75 per cent of the sample households are consuming millets. The season wise distribution of millets consumption among the millets consuming households shows that all of them are consuming it during summer seasons only.

| Table 4.3: Sample HHs by their Consumption of Millets across Seasons |                  |                       |       |        |   |        |     |       |   |       |     |
|----------------------------------------------------------------------|------------------|-----------------------|-------|--------|---|--------|-----|-------|---|-------|-----|
| Blocks                                                               | Total Population | Millets Consuming HHs |       | Winter |   | Summer |     | Rainy |   | Total |     |
|                                                                      |                  | No                    | %     | No     | % | No     | %   | No    | % | No    | %   |
| Banapur                                                              | 80               | 0                     | 0     | 0      | 0 | 0      | 0   | 0     | 0 | 0     | 0   |
| Tangi                                                                | 80               | 15                    | 18.75 | 0      | 0 | 15     | 100 | 0     | 0 | 15    | 100 |
| Total                                                                | 160              | 15                    | 9.37  | 0      | 0 | 15     | 100 | 0     | 0 | 15    | 100 |

Source: Baseline Survey 2023

#### 4.5 Consumption of Millets in Different Meals of the Day

Table 4.4 presents the distribution of millets consuming households by millets consumption in different meals of the day. It shows that in Banapur block none of them are consuming it. While in Tangi block all the millets consuming households are consuming it only during the breakfast.

| Table 4.4: Distribution HHs by Millets Consumption in Different Meals of the Day |       |                   |       |                 |     |
|----------------------------------------------------------------------------------|-------|-------------------|-------|-----------------|-----|
| Blocks                                                                           | Total | Millets Consuming |       | Meals in a Day* |     |
|                                                                                  | HHs   | HHs               |       | Breakfast       |     |
|                                                                                  | N     | N                 | %     | N               | %   |
| Banapur                                                                          | 80    | 0                 | 0     | 0               | 0   |
| Tangi                                                                            | 80    | 15                | 18.75 | 15              | 100 |
| Total                                                                            | 160   | 15                | 9.37  | 15              | 100 |
| Source: Baseline Survey 2023                                                     |       |                   |       |                 |     |
| * Percentage drowns from millets consuming households only.                      |       |                   |       |                 |     |

#### 4.6 Millets Consumption by the Sample HHs across Seasons (Average)

Table 4.5 shows the season-wise trend and patterns of total millets consumption by sample households is significant. The Baseline data shows that in Banapur block none of the sample households are consuming it. While the total volume of millets consumption among the millets consuming households is 91 kg during the Summer Season in Tangi block. Which account for an average of 1.14 Kg. / Household per year.

| Table 4.5 Millets Consumption by the Sample HH across Seasons |                      |                 |                |                 |
|---------------------------------------------------------------|----------------------|-----------------|----------------|-----------------|
| Blocks                                                        | Volume<br>(kg) Total | Average<br>(kg) | Summer         |                 |
|                                                               |                      |                 | Volume<br>(kg) | Average<br>(kg) |
| Banapur                                                       | 0                    | 0               | 0              | 0               |
| Tangi                                                         | 91                   | 1.14            | 91             | 1.14            |
| Total                                                         | 91                   | 1.14            | 91             | 1.14            |
| Source: Baseline Field Survey, 2023                           |                      |                 |                |                 |

#### 4.7 Sources of Millets consumed by the Sample HHs across Blocks

Table 4.6 shows the distribution of households by the sources of millets they consume are found to be significant. It is revealed that out of the total sample households only 15 HHs (18.75 per cent) of them are consuming millets. As discussed above none of the sample households are consuming millets and all of them purchased it from the market.

| <b>Table 4.6: Distribution of Sample HHs by their Sources of the Millets Consumed</b> |                         |                              |          |                                   |          |
|---------------------------------------------------------------------------------------|-------------------------|------------------------------|----------|-----------------------------------|----------|
| <b>Blocks</b>                                                                         | <b>Total Sample HHs</b> | <b>Millets Consuming HHs</b> |          | <b>HHs Purchased from Market*</b> |          |
|                                                                                       | <i>N</i>                | <i>N</i>                     | <i>%</i> | <i>N</i>                          | <i>%</i> |
| <b>Banapur</b>                                                                        | 80                      | 0                            | 0        | 0                                 | 0        |
| <b>Tangi</b>                                                                          | 80                      | 15                           | 18.75    | 15                                | 18.75    |
| <b>Total</b>                                                                          | 160                     | 15                           | 18.75    | 15                                | 100      |
| <i>Source: Baseline Survey 2023</i>                                                   |                         |                              |          |                                   |          |
| <i>* Percentage calculated from only millets consuming HHs</i>                        |                         |                              |          |                                   |          |

#### 4.8 Millet Recipes being Consumed by the Sample Population

In Banapur block none of the sample households are consuming millets. However, in Tangi block it is found that among the 15 millets consuming households, all are consuming *Jau/Torani* that are being prepared from millets.

#### 4.9 Conclusion

The patterns of millets consumption among the sample households in both blocks of Khordha district reveals that about 18.75 per cent of them in Tangi block are consuming millets. However, it is also found that millets consumption is higher among the older people i.e., adults and middle aged than the other age groups. Further, season-wise difference in the amount of millets consumption indicates that they consume it mostly during the summer season. Another surprising fact is that all of millets consuming households, though not cultivating rather purchasing millets from the market and consuming on a day-to-day basis mostly in their breakfast. *Jau/Torani* is the most common millet recipe being consumed by the sample households across the blocks.

## **Chapter V**

### **PROCESSING AND MARKETING OF MILLETS**

#### **5.1 Introduction**

Baseline Survey 2023 aimed at recording the processing and marketing practised by the sample households in both Banapur and Tangi block of the Khordha district. This chapter explores the different practices used by the sampled for processing of their millets, such as de-hulling, milling, roasting, and popping. It also examines the availability and accessibility of processing units in the study areas, and the factors that influence the choice of processing methods. Further, this chapter analyses the different modes of selling millets, such as direct sales, selling to the Cooperatives, to the Middlemen, and through the various Online Platforms. It also evaluates the distance to selling points and the transportation costs involved in selling. The other objective of this chapter is to assess the status of processing and marketing of millets with the sample population and to identify the challenges and opportunities for improving the value chain of millets.

#### **5.2 Processing of Millets**

Millets grains have a thin husk and small stone particles that need to be removed before consumption. This is a difficult and tedious task that requires a lot of manual labour. Women are usually responsible for processing millets using a stone grinder to make flour. This process takes a lot of time and energy, which could be used for other productive activities. Therefore, millet processing units are essential for improving the efficiency and quality of millet production. Millet processing units can reduce the drudgery of women and increase the availability of nutritious millet products for food security and income generation. However, all the sample households who consume millets they purchased processed millets (mainly powder) from the market. Hence, they do not need further processing. Therefore, the information about gender aspect family members engaged in processing, methods of millets processing, and accessibility to processing units is not present.

#### **5.3 Marketing of Millets**

Like other crops, millets can provide income and livelihood support for farming households. This section analyses the modes and marketing practices followed by the millet farming households. However, in the surveyed area, none of the sample households are cultivating millets. Therefore, information about marketing of millets in the study area is not present here.

#### **5.4 Conclusion**

Although none of the sample households cultivating millets some of them consuming it. Where all the millets consuming households purchased processed millets from the market. Therefore, there they do not need further process of millets at home. Similarly, as none of sample households are cultivating millets, and do not selling.

### Annexure 1: Mapping of Baseline Survey Data - Khordha District, Phase VII

| SI no |                                                  |      | Indicators |       |       | Baseline Value |  |  |
|-------|--------------------------------------------------|------|------------|-------|-------|----------------|--|--|
| No    |                                                  | Unit | Banapur    | Tangi | Total |                |  |  |
| 1     | % Of Sample Households Cultivating Millets       | %    | 0          | 0     | 0     |                |  |  |
| 2     | Avg. Area under Millets Cultivation/HH<br>(Acre) | Acre | 0          | 0     | 0     |                |  |  |
| 3     | % of Millets are at total Cultivated Area        | %    | 0          | 0     | 0     |                |  |  |
| 4     | Average Production Millets HHs                   | Qnt. | 0          | 0     | 0     |                |  |  |
| 5     | Package of Practice                              | %    | 0          | 0     | 0     |                |  |  |
| 6     | Yield Rate (Qnt./Acre)                           | Qnt. | 0          | 0     | 0     |                |  |  |
| 7     | Percentage of Population Consuming Millets       | %    | 0          | 18.75 | 9.37  |                |  |  |
|       | a) Breakfast                                     | %    | 0          | 100   | 100   |                |  |  |
|       | b) Lunch                                         | %    | 0          | 0     | 0     |                |  |  |
|       | c) Evening Snacks                                | %    | 0          | 0     | 0     |                |  |  |
|       | d) Dinner                                        | %    | 0          | 0     | 0     |                |  |  |
| 8     | Popular Millets Recipes (% of HHs)               |      |            |       |       |                |  |  |
|       | a) Tampo/Pitha                                   | %    | 0          | 0     | 0     |                |  |  |
|       | b) Jau/Torani                                    | %    | 0          | 100   | 100   |                |  |  |
|       | c) Khiri                                         | %    | 0          | 0     | 0     |                |  |  |
|       | d) Idli/Upama                                    | %    | 0          | 0     | 0     |                |  |  |
|       | e) Sweets                                        | %    | 0          | 0     | 0     |                |  |  |
| 9     | Percentage of HH using Processing Millets        |      |            |       |       |                |  |  |
|       | a) Traditionally                                 | %    | 0          | 0     | 0     |                |  |  |
|       | b) Machines                                      | %    | 0          | 0     | 0     |                |  |  |
|       | c) Both                                          | %    | 0          | 0     | 0     |                |  |  |
| 11    | Percentage of HH Selling Millets                 | %    | 0          | 0     | 0     |                |  |  |

## Households Schedule for

## Baseline Survey 2023, Phase VII of SHREE ANNA ABHIYAN (SAA)



Serial No.....

Date.....

## Part-I: Socio-Economic Status

## 1. Profile of the Households

1.1. Name of the Households' Head: .....

1.2. Name of the Respondent: .....

1.3. Name of the (i) Village: (ii) GP

(iii) Blocks:

(iv) District:

1.4. Category: (i) SC (ii) ST (iii) OBC/SEBC (iv) Others (specify)

1.5. Religion (i) Hindu (ii) Muslim (iii) Christian (iv) Animism (v) Others

1.6. Ration Card Holding: (i) Ration Card (ii) Antyodaya Card (iii) Other (iv) No Card

1.7. Type of Family: (i) Nuclear (ii) Joint (iii) Extended (iv) Others (specify)

1.8. House Structure: (i) Katcha (ii) Semi-Pucca (iii) Pucca

3. HHs' Land ownership in Acre.....

## 4. Operational Holdings Under Different Crops (in Acre)

| Sl No.                    | Name of the Crops | Yes/ No | Own Land* | Leased-in* | Sl. No. | Name of the Crops | Yes/ No | Own Land* | Leased-in* |
|---------------------------|-------------------|---------|-----------|------------|---------|-------------------|---------|-----------|------------|
| a                         | Paddy             |         |           |            | c       | Vegetables        |         |           |            |
| b                         | Millets           |         |           |            | d       | Any Others Crops  |         |           |            |
| Total Operational Holding |                   |         |           |            |         |                   |         |           |            |

## 5. Annual Expenditure:

| Sl. No | Source                       | Expenditure Heads |                         |         |                         |            |        | Total Amount (in Rs.) |
|--------|------------------------------|-------------------|-------------------------|---------|-------------------------|------------|--------|-----------------------|
|        | Agriculture                  | Land Preparation  | Transplantation/ Sowing | Weeding | Fertilizers/ Pesticides | Harvesting | Others |                       |
| 1      | a) Millet                    |                   |                         |         |                         |            |        |                       |
|        | b) Paddy                     |                   |                         |         |                         |            |        |                       |
|        | c) Vegetables                |                   |                         |         |                         |            |        |                       |
|        | d) Any Other Crops (Specify) |                   |                         |         |                         |            |        |                       |
| 3      | Households Expenses          |                   |                         |         |                         |            |        |                       |
| 4      | Other HH Expenses            |                   |                         |         |                         |            |        |                       |
|        | Total                        |                   |                         |         |                         |            |        |                       |

6. Annual income of the HH (last year. .... )

7. Have you taken any agricultural loan? 1-Yes 2-No

If yes, please provide details.....

## 2. Household Particulars:

| Sl. No | Name of the HH Members | Relationship with HoH (Use Code) | Age | Sex | Marital Status (Use Code) | Educational Qualification (Use Code) | Main                  |               | Subsidiary            |               | Consume Millet (Yes/No) |
|--------|------------------------|----------------------------------|-----|-----|---------------------------|--------------------------------------|-----------------------|---------------|-----------------------|---------------|-------------------------|
|        |                        |                                  |     |     |                           |                                      | Occupation (Use Code) | Annual Income | Occupation (Use Code) | Annual Income |                         |
| 1      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 2      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 3      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 4      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 5      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 6      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 7      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 8      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 9      |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 10     |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 11     |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |
| 12     |                        |                                  |     |     |                           |                                      |                       |               |                       |               |                         |

Codes: Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6- Separated, 7- Any Others ( pl specify )

Relationship: 1-Self, 2- Spouse, 3- Son, 4- Daughter, 5- Daughter-in-Law, 6- Son-in-Law, 7- Father, 8-Mother, 9-Brother, 10-Sister, 11- Grandson, 12- Granddaughter, 13- Father- in-Law, 14- Mother-in-Law, 15- Any Other (Specify)

Education: 1- Illiterate, 2- Up to Class 5, 3- Class 6-10, 4- Higher Secondary, 5- Graduate, 6- Post-Graduate, 7- Technical (Diploma/Degree), 8- Professional/Management, 9- Any Other (Specify)

Occupation: 1- Agriculture, 2- Daily Wage Labour, 3- Business/Entrepreneurship, 4- Govt sector, 5- Private Sector, 6- Pension/Remittances 7- Student 8- Housewife,

9- Unemployed, 10- Others (pl. specify)

## Part-II: Production of Millets

### 3. Do you cultivate millets?

1-Yes    2-No If yes, give millet-wise production details

| Sl. No. | Millet Crops             | Season | Area (in Acre ) | Land Type Used | Sources of Irrigation | Type of Seed Used | Source of Seed | Quality of Seeds | Method of Cultivation | Use of Fertilizer | Use of Pesticides | Production (Qnt.) | Kept for Seed (Qnt.) | Kept for Consumption (Qnt.) | For Marketing (Qnt.) |
|---------|--------------------------|--------|-----------------|----------------|-----------------------|-------------------|----------------|------------------|-----------------------|-------------------|-------------------|-------------------|----------------------|-----------------------------|----------------------|
| a       | Mandia                   | Kharif |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Rabi   |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Summer |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
| b       | Suan/<br>Kosla<br>/Gurji | Kharif |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Rabi   |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Summer |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
| c       | Koda                     | Kharif |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Rabi   |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Summer |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
| d       | Any other (specify)      | Kharif |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Rabi   |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |
|         |                          | Summer |                 |                |                       |                   |                |                  |                       |                   |                   |                   |                      |                             |                      |

Land Type Used: 1-Upperland, 2-Slope Land, 3-Middle Land, 4-Low Land.

Sources of Irrigation: 1. Rain, 2. Farm Pond, 3- Stream, 4- MIP/WS, 5-River, 6- Canal, 7- Bore well, 8-Others(Specify).

Type of Seed Used: 1-Local, 2- Certified, 3-HYV.      Source of Seeds: 1-Own Seed, 2- Relatives, 3-Market, 4- NGO, 5- Govt./ Community Seed Centre, 6-Others (pl. specify)

Quality of Seeds: 1. Good, 2. Average, 3. Bad

Method of Cultivation: 1) SMI- System of Millets Intensification, 2) LT- Line Transplantation, 3) LS- Line Showing, 4) Broadcasting, 5) Others (specify)

Use of Fertilizer: 1) Organic Manure, 2) Chemical Fertilizers, 3) Both, 4) No Use.    Pest Control:      1) Bio-Pesticides, 2) Chemical Pesticides, 3) Both, 4) No Use

4. Whether you follow mixed farming or mono farming system? 1. Mixed 2. Mono  
If mixed, with which are the crops(s)?
5. How do you store your seed and grain?  
(i) Jute Bag (ii) Earthen Pot (iii) Bamboo Basket (iv) Pura (paddy rope)  
(v) Open Hanging (vi) Other (Specify)
6. Had your seed or grain got damaged during last year? 1. Yes 2. No
7. Have you done weeding for the millets cultivation? 1. Yes 2. No
8. If Yes, Number of times you do weeding in your millet fields, by each method?  
8.1. Manually \_\_\_\_\_ 2) By Weeder \_\_\_\_\_ 3) Both \_\_\_\_\_
9. If By Weeder, Sources of weeder?  
(i) Own (ii) Rental (iii) Borrowed from Neighbours (iv) Govt. Provided (v) Other
10. If HH is not cultivating any of the millets, what is the reason?  
(i) Not profitable (ii) Shortage of land (iii) Non-availability of Seeds  
(iv) Lack of Irrigation (v) Others (pl. specify) .....
11. How many years have you not cultivated Millets..... ?
12. Do you like to cultivate Millets under this programme? 1. Yes 2. No

### Part-III: Consumption of Millets

13. Does your households consume millets? **1. Yes** **2. No**  
If Yes, Types of millets your HH consumed in different seasons (Put Tick Mark)

[illegible]

#### 14. Millets Requirements of the HH:

| Sl. No. | Seasons | Millets Consumed (in Kg.) | Total Requirement of Millets (Kg.) | Sources of Millet Consumed by HH (in Kg) |           |                     |               | Total |
|---------|---------|---------------------------|------------------------------------|------------------------------------------|-----------|---------------------|---------------|-------|
|         |         |                           |                                    | Produced                                 | Purchased | Borrowed/ Exchanged | Other Sources |       |
| a       | Winter  |                           |                                    |                                          |           |                     |               |       |
| b       | Summer  |                           |                                    |                                          |           |                     |               |       |
| c       | Rainy   |                           |                                    |                                          |           |                     |               |       |
| d       | Total   |                           |                                    |                                          |           |                     |               |       |

#### 15. Consumption of Millets in different Recipes (Put Tick Mark)

| Sl. No. | Name of The Millets         | Pitha/ Tampo | Chhatua | Jau/ Torani | Khiri | Idli/ Upama | Sweets Items | Others (Specify) | Remarks |
|---------|-----------------------------|--------------|---------|-------------|-------|-------------|--------------|------------------|---------|
| a       | Mandia                      |              |         |             |       |             |              |                  |         |
| b       | Suan/ Kosla/ Gurji          |              |         |             |       |             |              |                  |         |
| c       | Kodo                        |              |         |             |       |             |              |                  |         |
| d       | Any Other Millets (Specify) |              |         |             |       |             |              |                  |         |

16. Is there any special occasion when you prepare millets based items?

1. Yes 2. No

If yes, what is/are the occasion(s) (specify)? \_\_\_\_\_

17. For this what type of millet is required (specify)? \_\_\_\_\_

18. Do you purchase Millet Based Products from market for consumption?

1.Yes 2.No

19. If Yes, what are the millets-based items you usually purchase from the market?

1. Biscuit/Mixture 2. Idli/Upama 3. Chhatua 4. Pakoda 5. Others (Specify)

20. How do you like the taste of millet-based products you purchased from market?

1. Liked it 2. So-so 3. Do not Like it

#### Part-IV: Processing of Millets

21. Do you process the millet products in your house?

1.Yes 2.No

22. If Yes, who among your family members involved in the processing of millets?

i). Nos. of Male members \_\_\_\_\_. ii). Nos. of Female members \_\_\_\_\_

23. How do you process the millets? a) Traditionally b) Machinery c) Both d) Others (Specify)

24. If traditionally, please elaborate the methods of processing.

25. If Machinery, how far is the location of the processing unit from your village? \_\_\_\_\_ km

### Part-V: Marketing of Millets

26. Do you sell millets?

1. Yes 2 .No

27. Types of Millets, you Sell and Quantity

| Sl. No. | Millet Crops           | Yes/<br>No | Sources<br>of Millets<br>You Sale | Quantity | Price<br>/ Kg. | Govt.<br>Price<br>(MSP) | Where did<br>you sell<br>your<br>millets | Distance<br>in Km | Mode of<br>Transportation<br>Used for<br>Millets Sale | Reason for<br>Sale |
|---------|------------------------|------------|-----------------------------------|----------|----------------|-------------------------|------------------------------------------|-------------------|-------------------------------------------------------|--------------------|
| a       | Mandia                 |            |                                   |          |                |                         |                                          |                   |                                                       |                    |
| b       | Suan/ Kosla /Gurji     |            |                                   |          |                |                         |                                          |                   |                                                       |                    |
| c       | Koda                   |            |                                   |          |                |                         |                                          |                   |                                                       |                    |
| d       | Any other<br>(specify) |            |                                   |          |                |                         |                                          |                   |                                                       |                    |

**Sources of Millets You Sell:** 1. Own Produced, 2. Purchase from Farmers, 3. Others (Specify)

**Where Sold Your Millets:** 1. Govt. *Mandi*, 2. Middlemen/ Local Businessman, 3. Moneylender/ *Sahukar*, 4. Daily market/ Haat 5. Others (pl. specify)

**Mode of Transportation:** 1. Headload, 2. Cycle, 3. Cart, 4. Own Vehicle, 5. Hired Vehicle, 6. Public Transport, 7. Others (Specify)

**Reason for Sale:** 1. Better Price, 2. Immediate Need of Cash, 3. Loan Repayment, 4. Non-Availability of Market, 5. Any Others (specify)

28. Any instance of distress sale (less than the market price) of Millets?

1.Yes 2.No

29. If yes, what is the sale price.....and what is the market price.....

30. What are the marketing processes followed by you?

a) Barter

b) Money

c) Others (specify)

31. Do you sell any millet based value-added products?

1.Yes 2.No

32. If yes, provide the details about the Millet Based Value Added Products you sale.

33. Remarks

Contact no of Respondent .....

Signature of the Researcher/Field Investigator

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