

BASELINE SURVEY: PHASE VI

GANJAM 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
ICSSR Institute in Collaboration with Government of Odisha

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ନବକୃଷ୍ଣ ଚୌଧୁରୀ ଉନ୍ନୟନ ଗବେଷଣା କେନ୍ଦ୍ର
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FOREWORD

It is with great pleasure that I extend my warmest greetings to you through this foreword letter, reflecting on the remarkable journey of the “Special Programme for Promotion of Millets in Odisha,” fondly referred to as the Shree Anna Abhiyan or SAA. The roots of the SAA delve deep into a significant consultation meeting convened on 27th January 2016 at the Nabakrushna Choudhury Centre for Development Studies (NCDS). Chaired by Mr. R. Balakrishnan, the then Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS) of the Government of Odisha and Chairperson, NCDS, this gathering brought together a diverse array of stakeholders. Representatives from various line departments of the Government of Odisha, esteemed members of civil society groups from across the nation and within the state, including notable organizations like the Alliance for Sustainable and Holistic Agriculture (ASHA), the Millets Network of India (MINI), and the Revitalizing Rain-fed Agriculture (RRA) Network of India, graced the occasion. Distinguished figures from academia, such as Dr. T. Prakash, the then Chairperson of the Karnataka Agricultural Price Commission, lent their expertise to the discourse.

NCDS took the initiative to submit a proposal to the Government of Odisha, emphasizing the imperative to revive millet production in the state. The resounding impact of this proposal was swiftly acknowledged, evident in the budget speech delivered on 18th March 2016 by the Government of Odisha, which articulated their commitment to reviving millets. This pivotal moment marked the inception of a journey marked by collaboration, dedication, and transformative action. Subsequently, a memorandum of understanding (MoU) was signed on 27th February 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 target blocks of the SAA. These surveys, designed to evaluate the status of millet production, marketing, consumption, and processing, represent a critical step towards informed intervention and strategic decision-making.

As the Director of NCDS, I extend my heartfelt appreciation to all the members of our dedicated team for their unwavering commitment and tireless efforts in realizing the objectives of the SAA. Your diligence and perseverance have been instrumental in bringing our collective vision to fruition. I extend my deepest gratitude to all our partners, stakeholders, and collaborators for their invaluable support and steadfast dedication to the cause of promoting millets in Odisha, especially for completion of the Baseline Study 2022. Together, let us continue to forge ahead, leaving an indelible mark on the landscape of sustainable agriculture and rural development.



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 VI, 2022”. 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 Chaudhary, 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), 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 also wish to acknowledge the contributions of Dr. Biswabas Patra and Dr. Rashmi Misra 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 Ganjam 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, especially for the completion of the Baseline Study 2022. 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

EXECUTIVE SUMMARY

Ganjam 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 VI has begun in the Kharif 2021 in its three blocks, namely, Sheragada, SanaKhemudi and Jagannath Prasad. Under the Baseline Study, 2022 a total 240 households were selected through the random sampling method.

The study revealed that among the surveyed households, 90.42 per cent belonged to Other Backward Class (OBC)/ Socially and Educationally Backward Class (SEBC), 6.25 per cent to the General category, and only 2.08 per cent belonged to Scheduled Castes (SCs) and another 1.25 per cent belongs to Scheduled Tribe (ST). Under the study, there was a total 1113 sample population, of which 51.93 per cent are male and 48.07 per cent are female. The religious composition indicates that all the sample population belonged to Hindu community and out of the 240 sample households, 96.25 per cent possess ration cards.

It is also found that a significant portion of the population (31.11 per cent) is farmers, followed by housewives at 25.22 per cent. The share of wage labourers is 7.78 per cent, while government employees represent 0.70 per cent and private employees 1.00 per cent and about 20.24 per cent of the sample population in the working age group are found to be unemployed. Out of the total of 240 households, 27 (11.25 per cent) have *Semi-Pucca* houses, 17 households (7.08 per cent) have *Kutcha* houses, and 196 households (81.67 per cent) have *Pucca* houses.

As per the Baseline Survey, all the sample households have cultivated millets in the year 2021 covering a total operational area 146.9 acres. The average yield of millets production among the sample respondent households was 0.8 quintals per acre with a total production of 117.92 quintals. Out of total, 95.23 per cent were found to be satisfied with their own or local seeds and the rest 6.19 per cent used hybrid seeds. It is also found that the most common method of millets cultivation among the sample households (49.05 per cent) is Line Sowing, followed by the SMI (28.10 per cent) and Line Transplanting (12.38 per cent).

As observed during the Baseline Survey, 2022 out of the total sample and surveyed 211 households, 87.91 per cent consume millets in different seasons and at different times of the day. All sample households are found to be consuming millets during the summer season, followed by 44.55 per cent during rainy, and another 60.19 per cent during the winter season. The findings also indicate that a majority (92.89 per cent) of people consume millets during Lunch, followed by 88.63 per cent during Breakfast, 15.16 per cent during Evening Snacks, and 11.37 per cent during their dinner. *Jau/Torani* is the popular recipe among the surveyed households as all of them are found to be consuming this recipe. The other popular recipes are *Tampo/Pitha*, *Khiri* and *Idli/ Upma*.

As far as processing millets is concerned, it is observed that majority of the sample households (70 per cent) process millets by adopting machine and 25.24 per cent process by using manually/traditionally. Whereas, another 4.76 per cent of households process it using both traditional and machines. Out of the total sample of 210 households, as found by the Study 54.5per cent sell their millets in mandi and 36.4 per cent sell their millets to the Middlemen, whereas, 9.1 per cent to the local Moneylender/ Sahukar. Nevertheless, it also observed that as many as 168 HHs (70 per cent of sample households) experienced distress sale due to the specific reasons for meeting the financial urgency and to repay their informal borrowings.

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ABBREVIATIONS

APL	: Above Poverty Line
BPL	: Below Poverty Line
CBO	: Community Based Organization
CRP	: Community Resource Person
FGD	: Focused Group Discussion
FPO	: Farmer Producers Organization
Ha	: Hectare
HH(s)	: Household(s)
ICDS	: Integrated Child Development Scheme
LS	: Line Sowing
LT	: Line Transplant
ITDA	: Integrated Tribal Development Agency
MDM	: Mid-Day Meal
MSP	: Minimum Support Prices
NAL	: Non-Agricultural Labour
MFP	: Minor Forest Produce
NCDS	: Nabakrushna Choudhury Centre for Development Studies
NSSO	: National Sample Survey Organization
OBC	: Other Backward Classes
OMM	: Odisha Millets Mission
PDS	: Public Distribution System
Qtls	: Quintals
PVT	: Participatory Variety Trial
SAA	: Shree Anna Abhiyan
SC	: Scheduled Caste
SMI	: System of Millet Intensification
ST	: Scheduled Tribe
WASSAN	: Watershed Support Services 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 a 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 designating 2023 as the International Year of Millets, it gets further attentions of general 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 2017-18 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. Among other Millets found in Odisha, Mandia constitutes a significant share of about 95 per cent.

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 millets), 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 2021, the implementation of SAA phase VI began in 17 districts, including Ganjam district and this baseline study aims to provide information on the program's dimensions in the district. The profile of the Ganjam district is presented below.

1.2 District Profile

Ganjam District is on 19.4 to 20.17 degree North Latitude and 84.7 to 85.12 degree East Longitude. It covers an area of 8070.60 sq. km. The district is broadly divided into two divisions, the coastal plain area in the east and hill and table lands in the west.

The district experiences normal annual rainfall of 1444 mm. Agriculture is a traditional occupation and the way of living of the inhabitants of Ganja district. The district is well known for its fertile soil and agricultural productivity. A large variety of crops are grown here including paddy, ground nut, sugarcane, oil seeds, Ragi, Moong and Biri. Because of the agro climatic condition suitable to grow millets, Ganjam has been included as a Programme district.

1.2.1 Geography and Topography

Geographically, Ganjam district lies between 19°04'N to 20°17'N latitude and 84°05'E to 85°12'E longitude, covering an area of approximately 8,206 square kilometres. It is bounded by Khordha and Nayagarh districts to the north, Kandhamal to the northwest, Gajapati to the west, and the Bay of Bengal to the east. The district exhibits a varied topography comprising coastal plains, fertile river valleys, and hilly regions forming part of the Eastern Ghats. Major rivers such as the Rushikulya, Bahuda, and Ghodahada traverse the district and play a crucial role in irrigation, agriculture, and fisheries.

Ganjam is tropical, characterized by hot summers, a humid monsoon season, and mild winters. The average annual rainfall ranges between 1,200 mm and 1,400 mm, mainly received from the southwest monsoon. The soils in the district vary from alluvial in the coastal areas to lateritic and red loamy soils in the upland regions, making them suitable for a variety of crops. The agro-climatic conditions support intensive cultivation of paddy, pulses, groundnut, and sugarcane.

1.2.3 Demographic Profile

According to the Census of India, 2011, the total population of Ganjam district is 3,529,031, making it the most populous district in Odisha. The population density stands at 429 persons per square kilometre, with a sex ratio of 983 females per 1,000 males. The literacy rate is recorded at 71.88%, which is above the state average, reflecting a strong emphasis on education. The district is largely rural, though urban centres like Berhampur, Bhanjanagar, and Chhatrapur have witnessed rapid urbanization.

1.2.4 Economy

Ganjam is predominantly agrarian, with a majority of the population engaged in agriculture and allied activities. The major crops include paddy, pulses, groundnut, and sugarcane, while horticultural crops such as mango, banana, and cashew are also cultivated. The district has a vibrant marine fishery sector along the coastal belt, contributing significantly to local livelihoods. Handloom and handicrafts, especially in areas like Berhampur and Hinjilicut, form another vital part of the rural economy. Industrial development is gradually expanding with the growth of micro, small, and medium enterprises (MSMEs) and service sectors.

1.2.5 People and Culture

Ganjam district is characterized by a rich and diverse social and cultural fabric that reflects the unique synthesis of coastal and highland traditions of southern Odisha. The majority of the population in the district belongs to non-tribal Hindu caste groups, while Scheduled Castes (SCs) constitute around 19.5 percent and Scheduled Tribes (STs) account for about 3.37 percent of the total population (Census of India, 2011). The tribal population, though relatively small, is mainly concentrated in the hilly and upland tracts of the western part of the district, particularly in areas adjoining Gajapati and Kandhamal districts. Prominent tribal groups include the Kui and Sora, who have preserved their distinct cultural identities, languages, and traditional practices.

The principal language spoken in the district is Odia, which serves as the medium of communication and education for the majority of inhabitants. However, due to Ganjam's geographical proximity to Andhra Pradesh, Telugu is also widely spoken, especially in border regions and urban centres such as Berhampur. In addition, tribal dialects like Kui and Sora are used among indigenous communities, enriching the district's linguistic diversity.

In terms of religion, Hinduism is the predominant faith, followed by small communities of Christians and Muslims. The district is known for its strong adherence to traditional customs, rituals, and local deities. Religious harmony and coexistence are evident through the widespread participation of people across communities in major festivals and cultural events. Among the most prominent celebrations are the Thakurani Yatra of Berhampur and the Tara Tarini Festival, both of which hold immense spiritual and cultural significance for the local populace. Folk performances such as Danda Nata, Prahlada Nataka, and other rural art forms continue to thrive as expressions of devotion and community life.

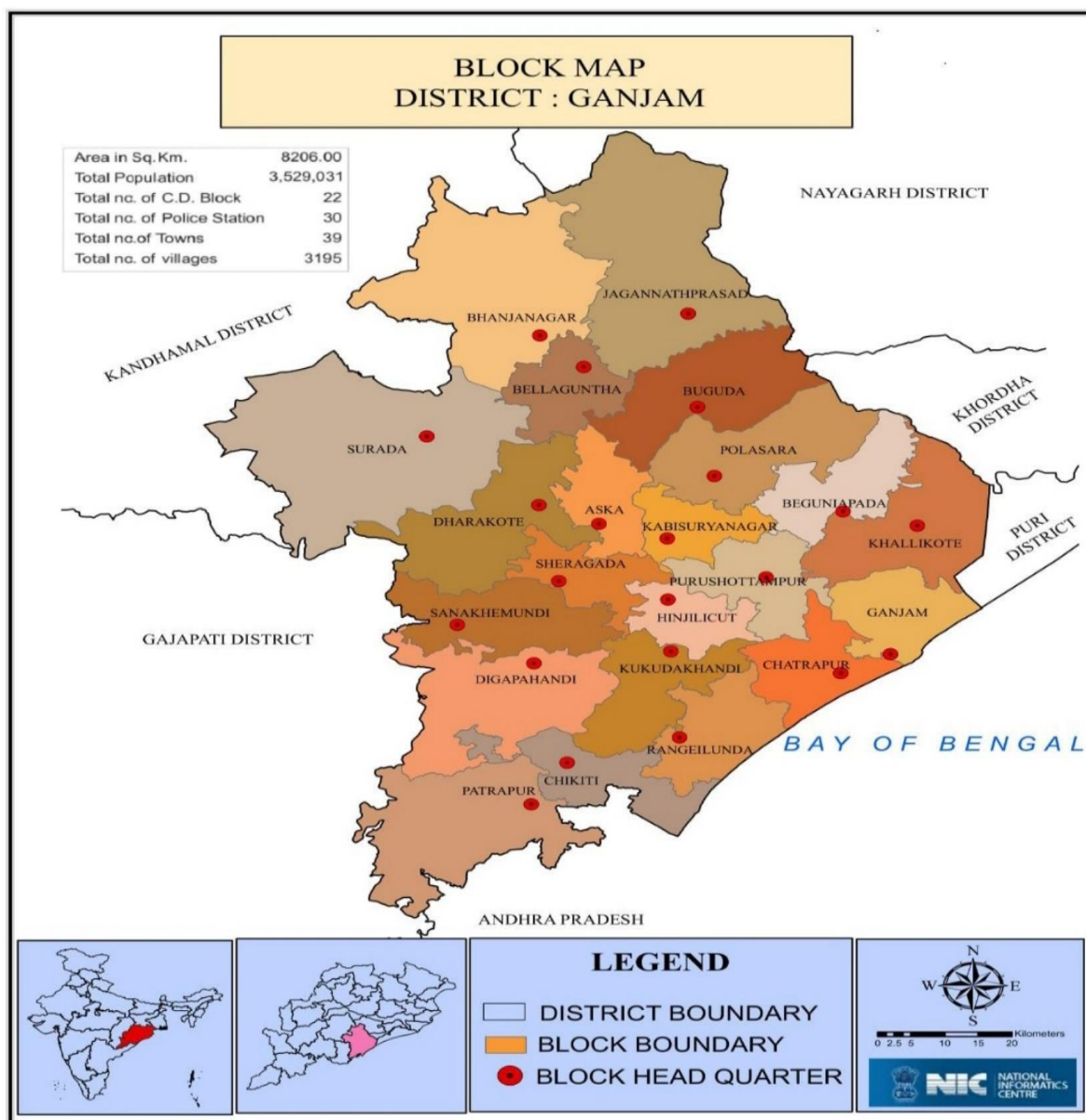
Ganjam is also distinguished for its rich tradition of handicrafts and handloom weaving. The district is famous for its Berhampur Patta sarees, stone carvings, terracotta works, and other indigenous crafts that showcase the artistic skills of local artisans. These crafts not only preserve the cultural heritage of the region but also contribute to its rural economy.

Migration plays a notable role in shaping the socio-economic structure of Ganjam. A considerable section of the working-age population migrates seasonally or permanently to southern Indian states such as Andhra Pradesh, Tamil Nadu, and Kerala in search of employment. The remittances sent by migrant workers form an important source of income for many households, influencing consumption patterns and local development.

1.2.6 Administrative structure

Ganjam district, one of the oldest administrative units of Odisha, has its headquarters at Chhatrapur, serving as the centre of governance. The district is divided into three sub-divisions- Chhatrapur, Berhampur, and Bhanjanagar-headed by Sub-Collectors responsible for revenue, development, and law and order. It comprises 22 Community Development Blocks, 18 Tahsils, 475 Gram Panchayats, and 3,171 villages, ensuring effective grassroots administration. The district also includes 18 urban local bodies, with Berhampur Municipal Corporation as the largest urban authority. The administration is led by the Collector and District Magistrate, supported by officers such as the Project Director, DRDA, and Block Development Officers (BDOs). This decentralized structure enables efficient governance and implementation of welfare programmes across rural and urban areas.

Fig. 1.1 Map of Ganjam District with Blocks



Source: <https://gisodisha.nic.in/Block/GANJAM.pdf>

Table1.1: Socio-economic and Demographic Features of Ganjam District	
Indicators	Values
Census2011	
Population (in Lakh)	35.30
Males (in Lakh)	17.79
Females (in Lakh)	17.50
Scheduled caste (in Lakh)	6.89
Scheduled Tribe (in Lakh)	1.19
HHs (in Lakh)	7.58
Sex Ratio	983
Total Workers (in Lakh)	15.01
Main Workers (in Lakh)	9.01
Marginal Workers (in Lakh)	6.01
Non-Workers (in Lakh)	20.27
Work Participation Rate (WPR, %)	42.52
Cultivator as % of Total Worker	18.98
Agricultural Laborers as % of Total Workers	37.65
Literacy rate (%)	71.09
Total Geographical area(sq.km)	8206
Land Use Pattern (Area in '000 Ha) (2014-15)	
Forest	56259
Land put to Non-agricultural use	70948
Barren and non-Cultivable Land	53682
Permanent Pasture and Other Agricultural Land	15689
Net Area Shown	27760
Cultivable Waste Land	27248
Old Fellow	37048
Current Fellows	56788
Miscellaneous Trees and Groves	12875
Agriculture,2014-15	
Fertilizer Consumption(kg/ha)	46.25
Irrigation, Kharif ('000ha)	260.02
Irrigation, Rabi ('000 ha)	550.38
Other Information	
No. of Village Electrified(as on March 2014)	2812
No. of banks	388
No. of AWC	4777
No. of BPL families	88616
No. of Job Card Issued (cumulative, March 2015)	467996
No. of Beneficiaries provided employment through MGNREGS	138046
Source: District Statistical Handbook, Ganjam, 2011 and District at a Glance 2016	
Note: MGNREGS is Mahatma Gandhi National Rural Employment Guarantee Scheme	

1.3 Objectives

The objectives of the baseline survey were to obtain information on proposed interventions under SAA around production, consumption, processing and marketing. It is also pertinent to have some background information of the HHs surveyed. The objectives are:

- To assess the socio-economic condition of the HHs;
- To outline millet production, productivity and package of practices;
- To examine the consumption pattern of millets and
- To elucidate the method of processing and modes of marketing

1.4 Methodology

1.4.1. Sample Design

Multi-stage sampling method has been used to select the sample HHs. In the first stage, Ganjam District has been selected purposively for the study as it is one of the seven districts where state Government has introduced this programme. In the second stage, three blocks namely Sheragada, Sanakhemundi and Jagannathprasad has been selected purposively. In the third stage, two GP from each block have been randomly selected, and in the last stage, 20 HHs from each village have been randomly selected. Therefore, the total 240 HHs from eight villages, four GP and three blocks have been randomly selected from this study. The details have been presented in the following table.

Table 1.2: Sample households selected in Ganjam District			
Blocks	Program Households (N)	Sample Households (N)	% of HHs Covered under the Survey
Sheragada	500	80	16.00
Sanakhemundi	1212	80	6.60
Jagannathprasad	748	80	10.69
Total	2460	240	9.75

Source: WASSAN

1.4.2 Data Collection, Compilation and Analysis

A total of twelve villages were selected from three blocks, where six Gram Panchayats across three blocks were selected for data collection in the Ganjam district for the Baseline Survey, 2022, Phase VI. These villages were selected using the simple random sampling method based on the list provided by the implementing agency about the prospective villages to be included under Phase VI across the three blocks of the district. Two Gram Panchayats were randomly selected from each block, and two villages were selected from each of these Panchayats.

This baseline survey report is based on both secondary and primary data. The primary data was collected from the respondents in the concerned districts by using a pre-tested interview schedule (Annexure 1) and Focus Group Discussion (Annexure 2). The secondary data on the geographical information, population, agriculture, education, irrigation, forest and institutions has

been collected by using various published and unpublished sources including the 2011 Census. In addition, to supplement and complement the findings made under the Baseline Survey, Focused Group Discussions (FGDs) were conducted in each selected village.

1.5 Limitations of the study

The present Baseline Survey focuses solely on three Blocks of the Ganjam District. However, due to the onset of the harvesting season, 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, 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 240 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 has been divided into five chapters' including the current Introductory Chapter, which provides district Profile, Objectives, Methodology and Limitations. Chapter II provides Socio-economic Profile of Surveyed HHs. Chapter III provides details on Production and Productivity of Millets. Chapter IV discusses Consumption Pattern of Millets. Chapter V annotates on processing and marketing of millets.

Chapter II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This chapter looks into social and demographic profile of HHs surveyed that is their distribution by social group, religion, and gender. In addition, for the HHs surveyed, it provides the distribution by poverty status (proportion below poverty line and proportion above), distribution by economic activities (not mutually exclusive, as a HH can have multiple economic activities), and distribution by house structure. It also provides information about the distribution of households by their landownership and operational holdings.

2.2 Social and Demographic Profile

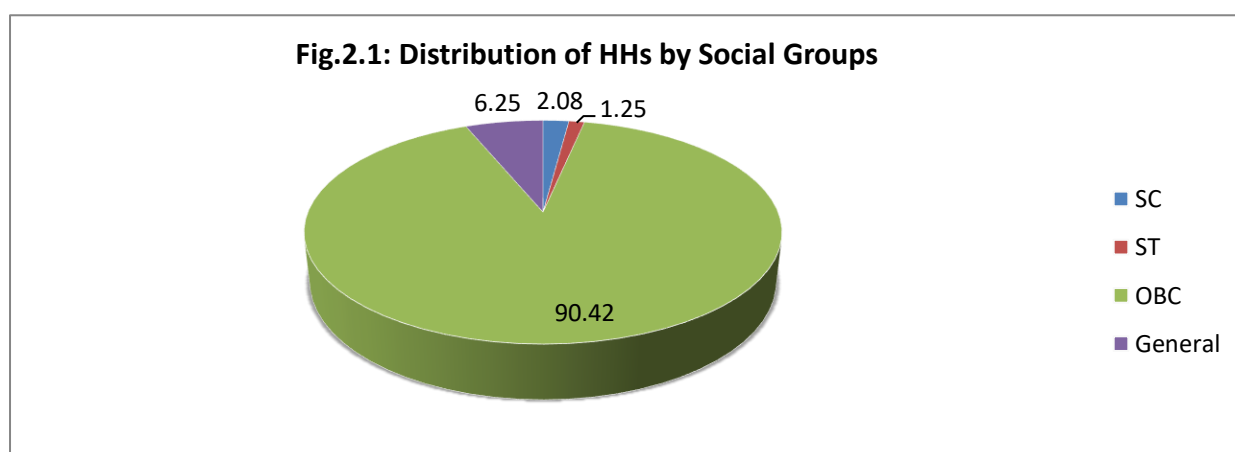
This section discussed the social composition, economic activities, poverty, and housing structures of the sample households.

2.3 Social Composition

Out of 22 blocks in Ganjam District, in Phase VI, the total 240 sample households have been surveyed across the three selected blocks namely, Jagannathprasad, Sanakhemundi and Sheragada in Fig 2.1 and Table 2.1 shows that significant majority of social group belongs to Other Backward Classes (OBC) which is 90.42 per cent and follow by general category which is 6.25 per cent. Similarly, both SC (2.08 %) and ST (1.25) are very low in social group. Similarly, block-wise distribution of households in Sanakhemundi blocks reveals that about 97.50 per cent households belong to OBC category.

Table 2.1: Distribution of Households by Social Groups across Blocks								
Particulars	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No.	%	No.	%	No	%	No	%
ST	0	0.00	0	0.00	3	3.75	3	1.25
SC	0	0.00	1	1.25	4	5.00	5	2.08
OBC/ SEBC	70	87.5	78	97.5	69	86.25	217	90.42
OTHERS	10	12.5	1	1.25	4	5.00	15	6.25
Total	80	100	80	100	80	100	240	100

Source: Baseline Survey, 2022



2.4 Distribution of Sample Population by Gender

According to 2011 Census, the total population of Ganjam district was 3,529,031 comprising of 2,761,030 rural and 768,001 urban population. However, survey data reveals that - out of total 1113 population (of surveyed households) 51.93 % of them are males and 48.07 % of them are female population. (Table 2.2)

Table 2.2: Sample Population by their Gender						
Blocks	Male		Female		Total	
	No.	%	No.	%	No.	%
Sheragada	197	50.38	194	49.62	391	100
Sanakhemundi	241	52.97	214	47.03	455	100
Jagannathprasad	140	52.43	127	47.57	267	100
Total	578	51.93	535	48.07	1113	100

Source: Baseline Survey, 2022

The gender-wise analysis of the surveyed population across the three blocks reveals a slight male predominance. In Sheragada block, males constitute 50.38 percent and females 49.62 percent of the total 391 individuals, indicating a balanced gender ratio. In Sanakhemundi, males form 52.97 percent and females 47.03 percent of the total 455 individuals, showing a mild male dominance. Similarly, in Jagannathprasad block, males account for 52.43 percent and females 47.57 percent of the total 267 individuals.

2.5 Religious Distribution

The religious distribution of the surveyed HHs across the three selected blocks reveals the overwhelming presence of Hindu HHs across the blocks. Out of total 240 surveyed households all are Hindu.

2.6 Population Distribution by Age Groups

Table 2.3 shows that the distribution of the population across different age groups in the three blocks of Sheragada, Sanakhemundi and Jagannathprasad. The total population of the surveyed households comes to around 1113.

Table 2.3: Distribution of population by their Age Group								
Age Group	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No.	%
Infant (0-2 year)	12	3.07	13	2.86	3	1.12	28	2.52
Preschool (3-5 year)	15	3.84	11	2.42	12	4.49	38	3.41
Children (6-12 year)	42	10.74	45	9.89	24	8.99	111	9.97
Adolescent (13-18 year)	35	8.95	50	10.99	15	5.62	100	8.98
Adults (19-44 year)	172	43.99	193	42.42	123	46.07	488	43.85
Middle Age (45-59 Years)	69	17.65	79	17.36	48	17.98	196	17.61
Old (60 and above)	46	11.76	64	14.07	42	15.73	152	13.66
Total	391	100	455	100	267	100	1113	100

Source: Baseline Survey, 2022

The age-wise distribution of the surveyed population across the three blocks shows that adults (19–44 years) form the largest group, constituting 43.85 percent of the total population, indicating that most respondents belong to the working-age group. This is followed by the middle-aged group (45–59 years) accounting for 17.61 percent and the elderly (60 years and above) comprising 13.66 percent. Children aged 6–12 years represent 9.97 percent, while adolescents (13–18 years) make up 8.98 percent. Preschool children (3–5 years) and infants (0–2 years) form 3.41 percent and 2.52 percent respectively.

Block wise in Sheragada block, adults (19–44 years) constitute the largest share at 43.99 percent, followed by the middle-aged group (45–59 years) at 17.65 percent and the elderly (60 years and above) at 11.76 percent, indicating a mature working population. In Sanakhemundi, a similar trend is observed with 42.42 percent adults, 17.36 percent middle-aged, and 14.07 percent elderly, showing slightly higher ageing characteristics. Jagannathprasad block also records 46.07 percent adults, the highest among all blocks, with 17.98 percent middle-aged and 15.73 percent elderly, suggesting a more aging demographic pattern. Across all blocks, the predominance of adults signifies an economically active population.

2.7 Educational Status

The field survey reveals the educational profile of 1014 individuals across three blocks: Shergada, Sanakhemundi and Jagannathprasad. (Table 2.4)

Table 2.4: Distribution of population by their education								
Education Status	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No.	%
Illiterate	58	15.93	75	18.47	57	23.36	190	18.74
Up To Class 5	57	15.66	33	8.13	27	11.07	117	11.54
Class 6-10	69	18.96	65	16.01	39	15.98	173	17.06
Higher Secondary	42	11.54	44	10.84	25	10.25	111	10.95
Graduation	46	12.64	28	6.90	33	13.52	107	10.55
Post-Graduate	13	3.57	30	7.39	11	4.51	54	5.33
Technical	19	5.22	25	6.16	11	4.51	55	5.42
Professional	8	2.20	20	4.93	5	2.05	33	3.25
Others	52	14.29	86	21.18	36	14.75	174	17.16
Total	364	100	406	100	244	100	1014	100

Source: Baseline Survey, 2022

The educational profile of the population across the three blocks shows varying levels of literacy and educational attainment. The overall illiteracy rate stands at 18.74 percent, highest in Jagannathprasad (23.36%) and lowest in Sheragada (15.93%), reflecting regional disparities in access to basic education. Individuals educated up to Class 5 form 11.54 percent, with the highest share in Sheragada (15.66%). Those with Class 6–10 education represents 17.06 percent, indicating a considerable portion of the population attaining secondary-level schooling. Higher secondary and graduate levels account for 10.95 percent and 10.55 percent, respectively, while postgraduates constitute only 5.33 percent. Individuals with technical and professional qualifications form 5.42 percent and 3.25 percent, respectively. The category ‘Others’, comprising informal or non-conventional education, accounts for 17.16 percent, the highest in Sanakhemundi (21.18%).

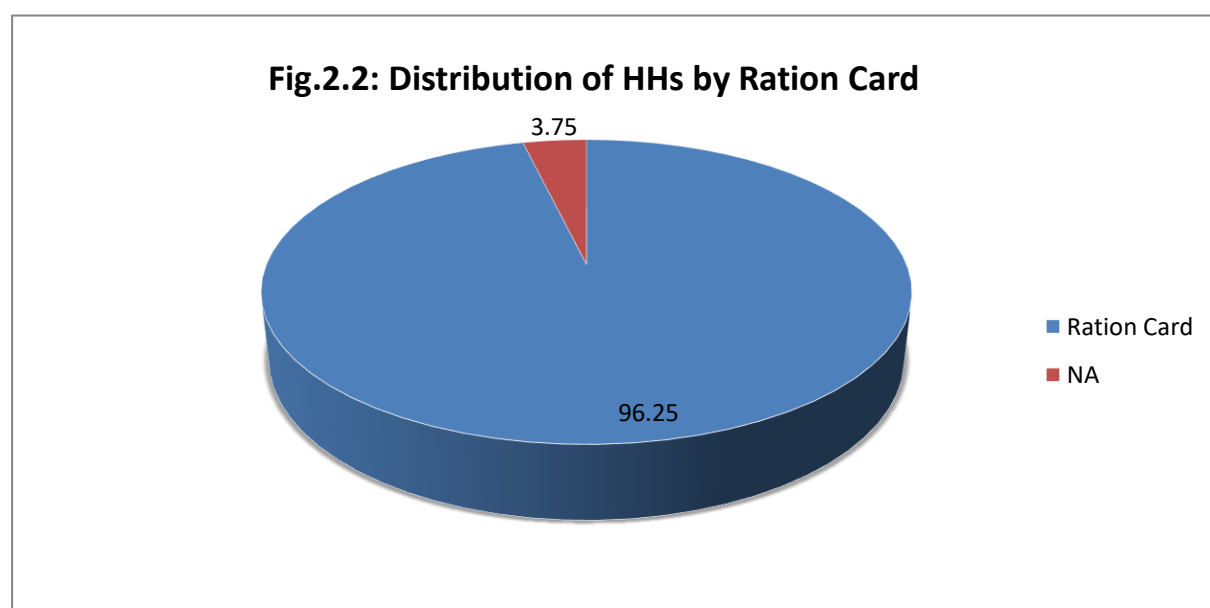
2.8 Ration Card Holders

Table 2.3 and Fig 2.3 show the distribution of sample households by their possession of ration card. It shows that out of 240 sample households a very significant majority i.e., 96.25 per cent households possess ration card. The block wise distribution of sample households by their ration card possession reveals that in Sheragada block nearly to all the sample households possess ration card. While in Jagannathprasad block, 92.5 per cent of sample household possess rational card and while 7.5 per cent do not possess ration card. Like Sanakhemundi block 97.5 per cent sample household possess

rational card and while 2.5 per cent do not possess ration card.

Blocks	Table 2.5 Distribution of HHs' Ration Cards Holding Status					
	HHs without Ration Cards		HHs with Ration Cards		Total	
	No.	%	No.	%	No.	%
Sheragada	1	1.25	79	98.75	80	100
Sanakhemundi	2	2.5	78	97.5	80	100
Jagannathprasad	6	7.5	74	92.5	80	100
Total	9	3.75	231	96.25	240	100

Source: Baseline Survey, 2022



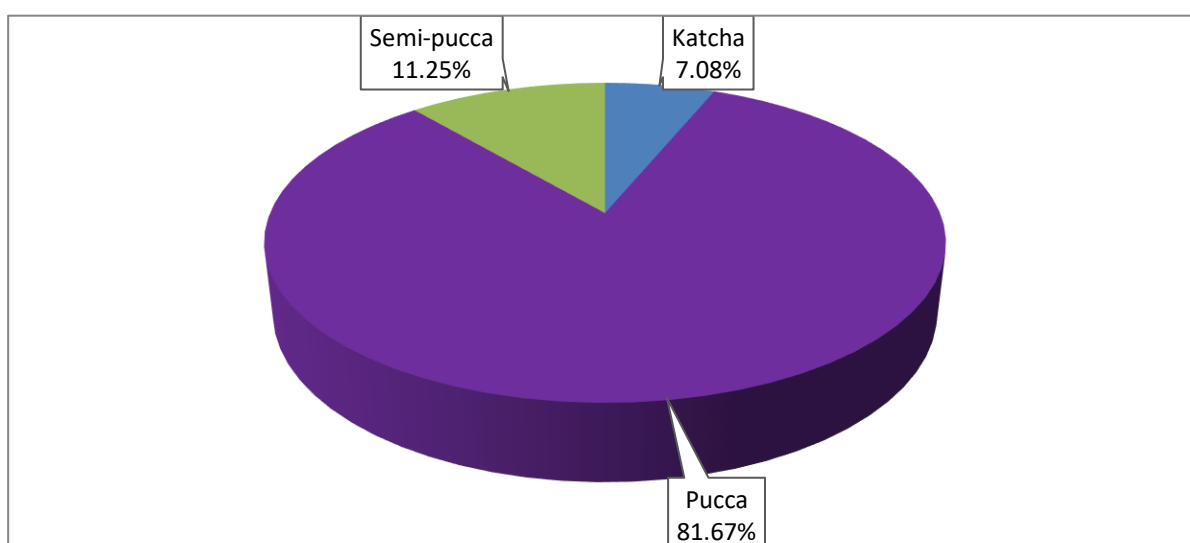
2.9 House Structure

House structure in a sense reflects the economic condition of HHs. Table 2.5 and Fig 2.5 Shows that out of the total surveyed HHs, 7.08 per cent had Kutcha houses, 11.25 per cent semi-Pucca houses and 81.67 per cent had the Pucca houses. The percentage of Pucca houses was the highest in Sheragada (93.75). The following table represents block wise house structures.

Table 2.6: Distribution of HHs by their House Structure								
Blocks	Kutcha		Pucca		Semi-Pucca		Total	
	No	%	No	%	No	%	No	%
Sheragada	3	3.75	75	93.75	2	2.5	80	100
Sanakhemundi	2	2.5	65	81.25	13	16.25	80	100
Jagannathprasad	12	15	56	70	12	15	80	100
Total	17	7.08	196	81.67	27	11.25	240	100

Source: Baseline Survey, 2022

Fig.2.3: Distribution of HHs by House Structure



Similarly, the block-wise distribution of HHs' house structure shows that in Jagannathprasad block majority of HHs has Pucca houses. Out of total 80 sample households 70.00 per cent are Pucca houses, 15.00 per cent of households have both Kutcha and semi-Pucca a house. Likewise, in Sanakhemundi block 81.25 per cent of households have Pucca houses, 16.25 per cent of household have Semi-Pucca and 2.5 per cent of households have Kutch houses. While in Sheragada block, 93.75 per cent of households have Pucca houses, 3.75 per cent of households have Kutcha houses and only 2.50 per cent of households have Semi-Pucca houses.

2.10 Occupation

The survey household in three selected blocks revealed the distribution of sample population by their occupation across blocks (Table2.7).

Table 2.7 Distribution of Population by Occupation								
OCCUPATION	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No	%
Agriculture	114	31.67	115	27.51	83	36.89	312	31.11
Wage Labour	28	7.78	36	8.61	14	6.22	78	7.78
Govt. Service	3	0.83	2	0.48	2	0.89	7	0.70
Pvt. Service	0	0.00	6	1.44	4	1.78	10	1.00
Housewife	86	23.89	113	27.03	54	24.00	253	25.22
Pension	25	6.94	34	8.13	15	6.67	74	7.38
Unemployed	81	22.50	84	20.10	38	16.89	203	20.24
Others	23	6.39	28	6.70	15	6.67	66	6.58
Total	360	100	418	100	225	100	1003	100

Source: Baseline Survey, 2022

It shows that out of total population of 312 persons, 31.11 per cent are farmers, followed by housewives 25.22 per cent. 7.78 per cent worked as a laborer and 0.70 per cent worked in government sectors, 7.38 per cent was pension holders and 1.00 per cent were private employees while 6.48 per cent were involved in other works. The unemployed were 6.528 per cent.

Similarly, the block-wise distribution of population by their occupation, it shows that agriculture is the primary source of livelihood across all blocks, engaging 31.11 percent of the total population. The highest share of agricultural workers is observed in Jagannathprasad (36.89%), followed by Sheragada (31.67%) and Sanakhemundi (27.51%). Housewives form the second-largest category, comprising 25.22 percent of the population, with the highest proportion in Sanakhemundi (27.03%). The unemployed population accounts for 20.24 percent, notably higher in Sheragada (22.50%). Wage labourers represent 7.78 percent, and pensioners make up 7.38 percent of the total. Employment in government and private services remains low at 0.70 percent and 1.00 percent, respectively. The 'Others' category, which includes miscellaneous occupations, constitutes 6.58 percent.

2.11 Annual Income

Table 2.8 presents the distribution of sample households by annual income across the three study blocks. The data reveal that the majority of households fall within the lowest income category of *up to ₹40,000* per annum- accounting for 70 per cent in Sheragada, 66.25 per cent in Sanakhemundi, and 36.25 per cent in Jagannathprasad. A considerable proportion of households in Jagannathprasad (41.25 per cent) belong to the *₹80,000–₹1,20,000* income group, indicating relatively better economic status compared to the other blocks. Higher-income categories above ₹1,20,000 comprise only a small fraction of households across all blocks, together representing less than 10 per cent of the total.

Table-2.8 Distribution of Sample HHs by annual income														
Blocks	Up to		40000-		80000-		120000-		180000-		Above		Total	
	40000		80000		120000		160000		200000		200000			
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Sheragada	56	70	11	13.75	6	7.5	4	5	2	2.5	1	1.25	80	100
Sanakhemundi	53	66.25	17	21.25	6	7.5	2	2.5	1	1.25	1	1.25	80	100
Jagannathprasad	29	36.25	16	20	33	41.25	2	2.5	0	0	0	0	80	100
Total	138	57.5	44	18.33	45	18.75	8	3.33	3	1.25	2	0.83	240	100

Source: Baseline Survey, 2022

2.12 Land Ownership Pattern

Table 2.9 presents the distribution of households by land ownership across the three blocks. The majority of households in all blocks possess less than 2 acres of land-81.25 per cent in Sheragada, 60 per cent in Sanakhemundi, and 45 per cent in Jagannathprasad-indicating prevalence of small and marginal farmers. Ownership of medium-sized holdings (2–5 acres) is relatively higher in Jagannathprasad (42.5 per cent) and Sanakhemundi (35 per cent), compared to Sheragada (11.25 per cent). A small fraction of households in all blocks own more than 5 acres of land, showing limited large-scale landholding.

Table 2.9: Sample HHs by their Land Ownership								
Category	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No.	%
No Land	3	3.75	1	1.25	5	6.25	9	3.75
Less than 2 Acres	65	81.25	48	60	36	45	149	62.08
More than 2 to 5 Acres	9	11.25	28	35	34	42.5	71	29.58
More than 5 to 10 Acres	1	1.25	2	2.5	5	6.25	8	3.33
More than 10 Acres	2	2.5	1	1.25	0	0	3	1.25
Total	80	100	80	100	80	100	240	100

Source: Baseline Survey, 2022

2.13 Conclusion

Majority of the surveyed households across the three selected blocks belongs to Other Backward Category (OBC). Agriculture is the primary occupation for most of the people. From the various social and economic indicators mentioned in this chapter (including Tables and Figures) and corresponding analysis indicates that out of all 240 surveyed HHs across the three blocks of Ganjam district majority of them possess ration cards and most of them have *pucca* houses.

Chapter III

PRODUCTION OF MILLETS

3.1 Introduction

In this chapter an attempt has been made to throw some light on the status of production and productivity of millets, usage of seeds, and package of practices in Ganjam district. From HHs surveyed in Sheragada, Sanakhemundi and Jagannathprasad blocks. The analysis 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 sampled villages. This chapter also highlights the challenges and opportunities for promoting millets in the district.

3.2 Cropping Pattern of Households

The distribution of sample households by crop types across the three blocks—Sheragada, Sanakhemundi, and Jagannathprasad—provides insights into the cropping patterns of the study area. The data show that paddy is the most widely cultivated crop, with 231 households (96.25%) engaged in its cultivation. Both Sheragada and Jagannathprasad reported 100 percent paddy growers, while Sanakhemundi recorded 88.75 percent. Millets also play an important role in the cropping system, cultivated by 210 households (87.5%). Sheragada had the highest proportion of millet cultivators (93.75%), followed by Jagannathprasad (87.5%) and Sanakhemundi (81.25%). Vegetable cultivation was relatively limited, reported by 82 households (34.17%), with Sheragada having the highest share (40%), followed by Jagannathprasad (33.75%) and Sanakhemundi (28.75%). The category of other crops was reported by 47 households (19.58%), with the highest share in Sheragada (26.25%), followed by Jagannathprasad (23.75%) and Sanakhemundi (8.75%). Overall, the data suggest that paddy and millets dominate the agricultural system, while crop diversification remains limited. (Table 3.1)

Table 3.1: Distribution of sample HHs by their crops								
Blocks	Paddy		Millets		Vegetables		Other crops	
	No	%	No	%	No	%	No	%
Sheragada	80	100	75	93.75	32	40	21	26.25
Sanakhemundi	71	88.75	65	81.25	23	28.75	7	8.75
Jagannathprasad	80	100	70	87.5	27	33.75	19	23.75
Total	231	96.25	210	87.5	82	34.17	47	19.58

Source: Baseline Survey, 2022

3.3 Operational Area under Crops

The distribution of operational area under millets and other crops across the three surveyed blocks in Ganjam district Sheragada, Sanakhemundi, and Jagannathprasad- reveals that the major portion of the operational area is devoted to other crops. Out of the total 654.55 acres of operational land, about 146.9 acres (22.44%) are under millet cultivation, while 507.65 acres (77.56%) are under other crops. Block-wise analysis shows that in Sheragada, out of the total 186.05 acres of operational area, 21.71 percent is under millets and 78.29 percent under other crops. In Sanakhemundi, out of the

total 222.5 acres, 19.60 percent is under millets and 80.40 percent under other crops. Similarly, in Jagannathprasad, out of the total 246 acres of operational holdings, 25.57 percent is under millets and 74.43 percent is under other crops. The findings indicate that although millet cultivation occupies a significant portion of agricultural land, the majority of operational holdings in the study area continue to be dominated by other crops. (Table 3.2)

Table 3.2 Distribution of operational area under different crops						
Blocks	Operational Area under Millets		Operational Area under Non-Millet Crops		Total Operational Area	
	Area	%	Area	%	Area	%
	(In acres)		(In acres)		(In acres)	
Sheragada	40.4	21.71	145.65	78.29	186.05	100
Sanakhemundi	43.6	19.60	178.9	80.40	222.5	100
Jagannathprasad	62.9	25.57	183.1	74.43	246	100
Total	146.9	22.44	507.65	77.56	654.55	100

Source: Baseline Survey, 2022

3.4 Area, Production and Yield of Millets

The surveyed HHs in Ganjam district indicated production of millets only in form of Mandia. As presented in Table 3.3, the total productions of millets are 117 quintals. Mandia was cultivated by 210 HHs and was cultivated in an area of 146.9 acre of land. The details of the area, production, and yield of millets in the three blocks are shown in the following (Table 3.3).

Table 3.3: Area, Production and Yield of Millets				
Blocks	No of HHs Cultivating Millets	Millets Area (in Acres)	Millets Production (in Qtls.)	Yield (Qtls. / Acre)
Sheragada	75	40.4	34.8	0.87
Sanakhemundi	65	43.6	30.02	0.69
Jagannathprasad	70	62.9	53.1	0.85
Total	210	146.9	117.92	0.8

Source: Baseline Survey, 2022

3.5 Perception on Quality of Seeds Used

According to the Baseline Survey, 2022, millet farming households in Ganjam district believe that seed quality is a crucial component of cultivation and crop production. Most of the time, the quality of seeds used determines the volume of production. High-quality seeds are preserved for the next crop to reap the benefits. It was attempted to understand the general perception of millet farmers, whether they are satisfied with the quality of seeds they use for millets cultivation or not. (Table 3.4)

Table 3.4: Perception about Millet Seeds Used					
Blocks	Satisfied	%	No Response	%	Total
Sheragada	70	93.33	5	6.66	75
Sanakhemundi	62	95.38	3	4.61	65
Jagannathprasad	68	97.14	2	2.85	70
Total	200	95.23	10	4.76	210

Source: Baseline Survey, 2022

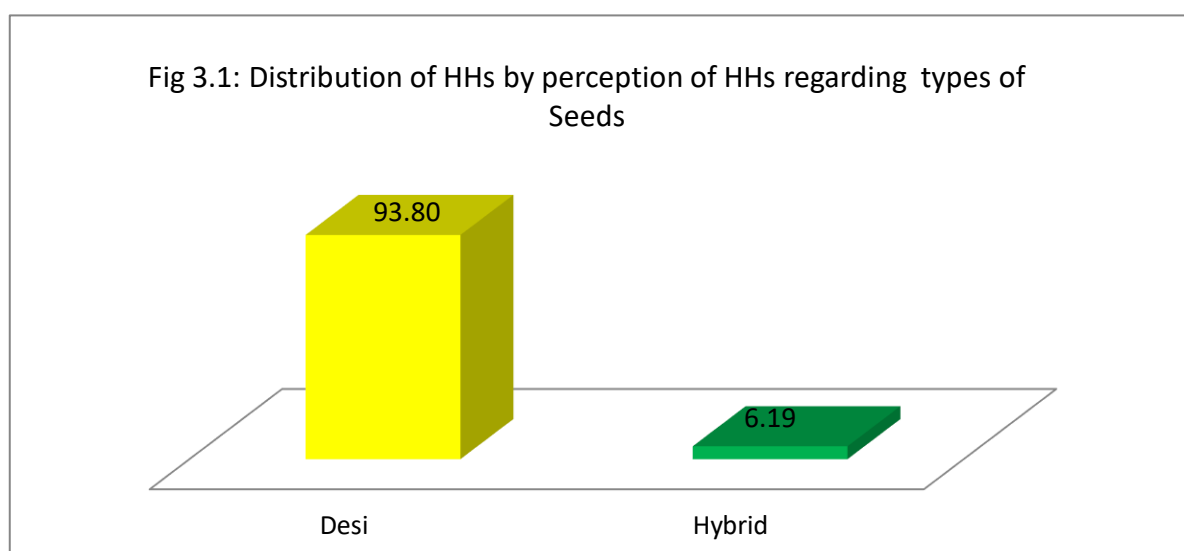
The perception of households regarding the quality of millet seeds used across the three surveyed blocks—Sheragada, Sanakhemundi, and Jagannathprasad, shows a high level of satisfaction. In Sheragada, out of 75 households, 70 households (93.33%) reported being satisfied with the quality of seeds, while 5 households (6.66%) did not respond. In Sanakhemundi, among 65 millet-cultivating households, 62 households (95.38%) expressed satisfaction, and 3 households (4.61%) did not respond. Similarly, in Jagannathprasad, out of 70 households, 68 households (97.14%) were satisfied with the seeds used, and 2 households (2.85%) did not respond. Overall, across the three blocks, 200 households (95.23%) reported satisfaction with the millet seeds, while 10 households (4.76%) did not provide any response.

3.6 Types of Millets Seeds Used by Households

Out of a total of 210 households, 197 households (93.80%) reported using desi seeds, while only 13 households (6.19%) were found to be using hybrid seeds. Block-wise analysis shows that in Sheragada, 70 households (93.33%) use desi seeds and 5 households (6.66%) use hybrid seeds. In Sanakhemundi, 62 households (95.38%) use local seeds, while 3 households (4.61%) rely on hybrid varieties. Similarly, in Jagannathprasad, 65 households (92.85%) reported using desi seeds, with 5 households (7.14%) using hybrid seeds. These findings indicate that although hybrid seeds are available, their adoption among millet-growing households remains limited, with a strong preference for traditional local varieties. The high reliance on desi seeds reflects farmers' confidence in their adaptability, suitability to local conditions, and contribution to sustaining traditional millet cultivation practices in the study area. (Table 3.5) and (fig.3.1).

Table 3.5: Distribution of HHs by using types of Seeds								
Particulars	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No	%
Desi	70	93.33	62	95.38	65	92.85	197	93.80
Hybrid	5	6.66	3	4.61	5	7.14	13	6.19
Total	75	100	65	100	70	100	210	100

Source: Baseline Survey, 2022



3.7 Package of Practices

Table 3.6 presents different method of cultivation techniques involved in the process of cultivation such as broadcasting, line sowing/line transplanting, System of Millets Intensification (SMI) method, and combination of one or more methods used by different HHs. The data presented in Table 3.6 show the distribution of sample households according to the package of practices followed for millet cultivation across the three surveyed blocks—Sheragada, Sanakhemundi, and Jagannathprasad. The analysis reveals that line sowing is the most widely adopted practice, followed by the System of Millet Intensification (SMI), while broadcasting and LT methods are less common. Out of the total 210 households, 103 households (49.05%) practiced line sowing, indicating a growing preference for improved sowing techniques. The SMI method was followed by 59 households (28.10%), showing its gradual adoption among millet cultivators. The LT method was used by 26 households (12.38%), and broadcasting was the least preferred, adopted by 22 households (10.48%). Block-wise analysis shows that in Sheragada, SMI (30.67%) and line sowing (34.67%) were the most common methods, while in Sanakhemundi, line sowing (40%) was dominant. In Jagannathprasad, a majority of households (72.86%) practiced line sowing, reflecting its popularity and efficiency in millet cultivation.

Table 3.6: Package of Practices followed by Households								
Practices	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No	%
Broadcasting	7	9.33	13	20	2	2.86	22	10.48
LS	26	34.67	26	40	51	72.86	103	49.05
LT	19	25.33	4	6.15	3	4.29	26	12.38
SMI	23	30.67	22	33.85	14	20	59	28.10
Total	75	100	65	100	70	100	210	100

Source: Baseline Survey, 2022

3.8 Reasons for not Cultivating Millets

Table 3.7 presents the reasons reported by households for not cultivating millets across Sheragada, Sanakhemundi, and Jagannathprasad blocks. Out of 30 households, the major reasons identified were shortage of land (36.67%) and other factors (43.33%), followed by lack of irrigation and low profitability (10% each). In Sheragada, all five households (100%) cited shortage of land as the reason for not cultivating millets. In Sanakhemundi, 20 percent of households each mentioned low profitability and land shortage, while 53.33 percent reported other reasons. In Jagannathprasad, 30 percent cited land shortage, 20 percent irrigation issues, and 50 percent other factors.

Table 3.7: Distribution of Sample HHs by their Reason for Not Cultivating Millets									
Blocks	Total HHs	Not Profitable		Shortage of Land		Lack of Irrigation		Others	
		No	%	No	%	No	%	No	%
Sheragada	5	0	0	5	100	0	0	0	0
Sanakhemundi	15	3	20	3	20	1	6.67	8	53.33
Jagannathprasad	10	0	0	3	30	2	20	5	50
Total	30	3	10	11	36.67	3	10	13	43.33

Source: Baseline Survey, 2022

3.9 Conclusion

All surveyed households who produced millets during baseline year of 2022, cultivated only Mandia. Millets remain an important crop, though paddy continues to dominate the agricultural landscape. Most households practice traditional farming methods and prefer local seed varieties, expressing high satisfaction with their quality. Line sowing and SMI are emerging as popular cultivation techniques, reflecting gradual adoption of improved practices. However, factors such as shortage of land and low profitability discourage some households from millet cultivation. Overall, the findings highlight the need for land management, and promotion of improved millet farming practices.

Chapter IV

CONSUMPTION OF MILLETS

4.1 Introduction

Demand for any product arises due to consumption. Hence, consumption plays a vital role in production and marketing. In this chapter to analyse how the households that participated in the survey vary in their millets intake across different seasons, meals, times of the day and generations. The chapter also explores the diversity of millet varieties, recipes and dishes that are consumed by these households and how they prepare them. By doing so, the chapter aims to provide a comprehensive picture of the millets consumption patterns and preferences among the sample households in Ganjam district, which is one of the focus areas of SAA.

4.2 Consumption of Millets by HHs

The data reveal that a total of 5,391 kg of millets were consumed by 211 households, with an average consumption of 25.55 kg per household. Among the blocks, Jagannathprasad recorded the highest number of millet-consuming households (77), followed by Sheragada (75) and Sanakhemundi (59). In terms of quantity, Jagannathprasad reported the highest total consumption (1,889 kg), while Sanakhemundi had the highest average consumption per household (31.83 kg). These variations indicate differing levels of millet dependence and consumption intensity across the surveyed blocks. (Table 4.1)

Table 4.1 Consumption of millets by households			
Blocks	Total millets consumed (in kg)	Average consumption	No of HHS Consuming millets
Sheragada	1624	21.65	75
Sanakhemundi	1878	31.83	59
Jagannathprasad	1889	24.53	77
Total	5391	25.55	211

Source: Baseline Survey, 2022

4.3 Millets Consumption across Seasons

Seasons-wise consumption pattern suggest that consumption of millet is more in summer season compared to rainy and winter seasons. Household's respondent favors it more in summer season in order to keep the body hydrated and also, they use it as a summer drink. Most of the households prefer to consume millet in summer. It is observed that 100 per cent HHs consumed millet during summer season, 60.19 percent HHs consumed during rainy season and 44.55 per cent HHs consumed during winter season. A survey of 80 households in each block found in Ganjam district that in Sanakhemundi block has the highest average consumption of 27.19 Kg and Sheragada has the lowest average consumption of 18.50 Kg per HHs. Jagannathprasad block has the average consumption of 2095 kg. per HHs. The following Table 4.2 shows the season-wise consumption of millets across the blocks.

Table 4.2. Millets Consumption across Seasons							
Particulars	Total HH	Winter		Summer		Rainy	
		No	%	No	%	No	%
Sheragada	75	30	40	75	100	46	61.33
Sanakhemundi	59	28	47.46	59	100	38	64.41
Jagannathprasad	77	36	46.75	77	100	43	55.84
Total	211	94	44.55	211	100	127	60.19

Source: Baseline Survey, 2022

Block-wise analysis shows that in Sheragada, all households (100%) consumed millets in summer, followed by 61.33 percent in the rainy and 40 percent in the winter seasons. In Sanakhemundi, 100 percent consumed millets in summer, 64.41 percent in rainy, and 47.46 percent in winter. Similarly, in Jagannathprasad, 100 percent consumed millets in summer, 60.19 percent in rainy, and 44.55 percent in winter.

4.4 Consumption during Different Meals of the Day

Consumption of millets by HHs during different meals of the day reveals that 88.63 per cent HHs had consumed it in their breakfast, 92.89 per cent HHs had consumed it in their lunch, 15.16 per cent HHs had consumed in evening snacks and 11.37 per cent had consumed in dinner, Table 4.3.

Table 4.3. Millets Consumption in Different Meals of the Day by the HHs								
Particulars	Sheragada (75)		Sanakhemundi (59)		Jagannathprasad (77)		Total (211)	
	No	%	No	%	No	%	No	%
Breakfast	66	88	52	88.14	69	89.61	187	88.63
Lunch	69	92	55	93.22	72	93.50	196	92.89
Evening Snacks	11	14.67	9	15.25	12	15.58	32	15.16
Dinner	8	10.67	7	11.86	9	11.68	24	11.37

Source: Baseline Survey, 2022

Block-wise, the pattern is similar, with the majority favoring breakfast and lunch. These findings suggest that millets are primarily incorporated into morning and midday meals, reflecting their role as staple foods in daily household diets.

4.5 Consumption of Different Millet Recipes

From this baseline study it was found that people were consuming millets in several ways in the form of Pitha, Khiri, Jau, and Lassi and so on. Table 4.4 shows that 100 per cent HHs consumed millets as Jau or Torani and followed by Tampo or Pitha which is 92.89 per cent. Another recipe of millet is known as Khiri, which is consumed by 85.78 per cent HHs. The people also consumed it in the form of Upma, Idli, sweets, Lassi. The following table describes block wise millets recipes consumption.

Table 4.4: Distribution of HHs by consumption of different millets recipes								
Particulars	Sheragada (75)		Sanakhemundi (59)		Jagannathprasad (77)		Total (211)	
	N	%	N	%	N	%	N	%
Tampo/Pitha	69	92	56	94.92	71	92.21	196	92.89
Chhatua	32	42.67	28	47.46	45	58.44	105	49.76
Jau/Torani	75	100	59	100	77	100	211	100
Khiri	66	88	55	93.22	60	77.92	181	85.78
Idli/ Upma	9	12	10	16.95	14	18.18	33	15.64
Sweet	12	16	9	15.25	9	11.69	30	14.22
other	14	18.67	13	22.03	13	16.88	40	18.96

Source: Baseline Survey, 2022

In Sheragada block, all the households consume millets in the form of Jau/Torani, while 69 households consume Tampo/Pitha, 66 households consume Khiri, 32 households consume Chhatua, 12 households consume Idli/Upma, 12 households consume sweet preparations, and 14 households consume other millet-based recipes. In Sanakhemundi block, all households also consume Jau/Torani, with 56 households consuming Tampo/Pitha, 55 households consuming Khiri, 28 households consuming Chhatua, 10 households consuming Idli/Upma, 9 households consuming sweet preparations, and 13 households consuming other recipes. Similarly, in Jagannathprasad block, Jau/Torani is consumed by all households, Tampo/Pitha by 71 households, Khiri by 60 households, Chhatua by 45 households, Idli/Upma by 14 households, sweet preparations by 9 households, and other millet recipes by 13 households. Overall, Jau/Torani is the most widely consumed millet preparation across all blocks, followed by Tampo/Pitha and Khiri. Chhatua, Idli/Upma, Sweet preparations, and other recipes are consumed by fewer households, indicating a preference for traditional millet dishes among the sample households in the study area.

4.6 Conclusion

The Baseline Survey, 2022 show that the millet consumption is found to be much higher during the summer than the other seasons. Most of the households consume millets during lunch time. Jau/Torani is the most common millet recipe across the three blocks of Ganjam district, followed by Tampo/Pitha, Khiri and Idli/Upamai.

Chapter V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

Processing and marketing play a vital role in agricultural activity. During processing, goods are transformed so as to increase their shelf-life and to make them more acceptable to the consumer than in their original form. Most of the time, it is observed that the framers try to sell their surplus products in a good rate. This Chapter looks into processing of millets, and the mode of transportation and the selling points of surplus millets. It also attempts to make an analysis of the process being followed by the farmers to produce, process, consume, store and sale millets.

5.2 Processing Units

Traditionally people usually prefer to process millets manually by using *Chakki* or *Ghurna*, but nowadays due to technological innovation people get accessibility of machines for the processing of millets in the locality of rural areas which helps them to reduce the time and manpower. Now-a-days, people prefer both the modes of millets processing like manual and also machinery for its easy availability in the locality. From the surveyed HHs, 61.25 per cent had processed millets through machine, 22.08 per cent had processed manually, and 16.67 per cent HHs had preferred both the modes to process millets. The Table 5.1 shows the various methods being followed by the farmers to process millets.

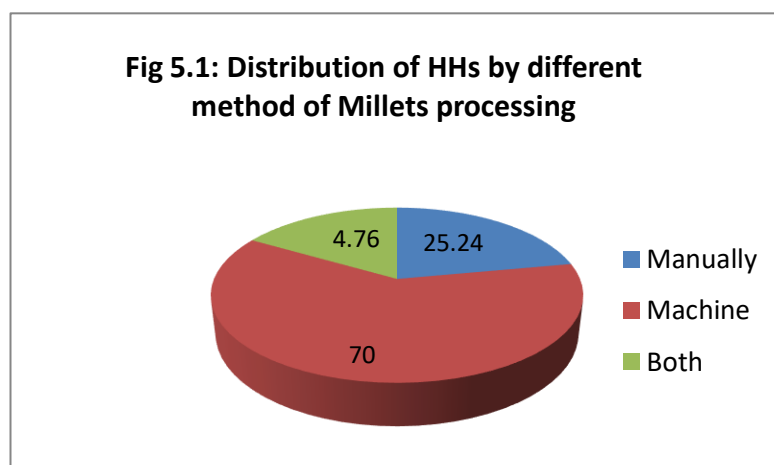


Table 5.1: Distribution of HHs by different Method of Millets processing								
Particulars	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No	%	No	%	No	%	No	%
Manually	19	25.33	16	24.62	18	25.71	53	25.24
Machine	53	70.67	46	70.77	49	70	147	70
Both	3	4	3	4.62	4	4.29	10	4.76
Total	75	100	65	100	70	100	210	100

Source: Baseline Survey, 2022

5.3 Marketing and Selling point

Marketing of millets is an important dimension for producing households to earn income by selling their surplus produce and improving their quality of life. Better marketing opportunities generate hope and interest to cultivate millets among these households. According to field study information shows that households are selling their surplus millets through different means. Out of the 210 sample households, 11 HHs (5.2 per cent) sell their millets in different ways. 6 HHs (54.4 per cent) sell their millets to mandi and follow by middle men/ local business i.e., 4 HHs (36.4 per cent) and 1HH (9.1 per cent) sell their millets to moneylender.

Table 5.2: Selling Points of Millets by the Sample HHs								
Blocks	Sheragada		Sanakhemundi		Jagannathprasad		Total	
	No.	%	No.	%	No.	%	No.	%
Mandi	2	40	0	0	4	100	6	54.54
Middleman	2	40	2	100	0	0	4	36.36
Moneylender/ Sahukar	1	20	0	0	0	0	1	9.09
Total	5	100	2	100	4	100	11	100

5.4 Conclusion

The processing and marketing of millets in the sample households across the three blocks of Ganjam district under Baseline Survey 2022, Phase VI reveals that majority of the households process their millets through both the methods such as by using machine and using traditional methods. Processing of millets through pulveriser is most commonly used processing units which are situated in nearby villages. Further, majority of households sell their surplus produce of millets to the mandi and middle men/local business.

Annexure 1: Mapping of Baseline Survey Data, 2022 of Ganjam District

Indicators	Unit	Baseline Value			Total
		Sheragada	Sanakhemundi	Jagannath prasad	
% of Sample households Cultivating Millets	%	93.75	81.35	87.5	87.5
Types of Millets Cultivated (2021)					
Mandia		100	100	100	100
Avg. Area under Millets/HH (Acre)	Acre	0.53	0.67	0.89	0.69
Millets/Ragi Production per HHs	Qnt.	0.46	0.47	0.75	0.57
% per of millets area to total cultivated area	%	21.71	19.60	25.57	22.44
Package of Practices					
Broadcasting	%	9.33	20	2.86	10.48
LS	%	34.67	40	72.86	49.05
LT	%	25.33	6.15	4.29	12.38
SMI	%	30.57	33.85	20	28.10
Yield Rate (Qnt./Acre)	Qnt.	0.87	0.69	0.85	0.8
% of HHs Consuming Millets					
Breakfast	%	88	88.14	89.61	88.63
Lunch	%	92	93.22	93.50	92.89
Evening Snacks	%	14.67	15.25	15.58	15.16
Dinner	%	10.67	11.86	11.68	11.37
Popular Millets Recipes (%HHs)					
Tampo/Pitha	%	92	94.92	92.21	92.89
Jau/Torani	%	100	100	100	100
Khiri	%	88	93.22	77.92	85.78
Idli/Upma	%	12	16.95	18.18	15.64
% of HHs using Processing Ragi					
Manually	%	25.33	24.62	25.71	25.24
Machines	%	70.67	70.77	70	70
Both	%	4	4.62	4.29	4.76
% of HH Selling Millets (Calculated from the no. of HHs Sells)					
Middleman	%	40	100	0	36.36
Mandi	%	40	0	100	54.54
Money lender/Sahukar	%	20	0	0	9.09



Annexure 2

Confidential and to Be Used for Research Purpose Only

Households Schedule for

Baseline Survey 2022-23, Phase VI 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

8. 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/ Kosla /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

9. Whether you follow mixed farming or mono farming system? **1. Mixed 2. Mono**
If mixed, with which are the crops(s)?
10. 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)
11. Had your seed or grain got damaged during last year? **1. Yes 2.No**
12. Have you done weeding for the millets cultivation? **1. Yes 2. No**
13. If Yes, Number of times you do weeding in your millet fields, by each method?
1) Manually_____ 2) By Weeder_____ 3) Both_____
14. If By Weeder, Sources of weeder?
i) Own ii) Rental iii) Borrowed from Neighbours iv) Govt. Provided v) Other
15. 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)
16. How many years have you not cultivated Millets.....?
17. Do you like to cultivate Millets under this programme? **1.Yes 2.No**

Part-III: Consumption of Millets

18. Does your households consume millets? **1. Yes 2. No**

If Yes, Types of millets your HH consumed in different seasons (Put Tick Mark)

Sl. No.	Name of the Millets	Winter				Summer				Rainy			
	Times	Breakfast	Lunch	Evening Snacks	Dinner	Breakfast	Lunch	Evening Snacks	Dinner	Breakfast	Lunch	Evening Snacks	Dinner
a	Mandia												
b	Suan/ Kosla / Gurji												
c	Koda												
d	Any Other Millets (Specify)												

19. 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							

20. 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)								

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

1. Yes 2. No

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

22. For this what type of millet is required (specify)? _____

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

1.Yes 2.No

24. 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)

25. 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

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

1.Yes 2.No

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

i). Nos. of Male members _____. ii). Nos. of Female members _____

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

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

30. If Machinery, how far is the location of the processing unit from your village? _____km

Part-V: Marketing of Millets

31. Do you sell millets?

1. Yes 2 .No

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

32. Types of Millets, you Sell and Quantity

33. Any instance of distress sale (less than the market price) of Millets? **1.Yes 2.No**

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

35. What are the marketing processes followed by you? a) Barter b) Money c) Others (specify)

36. Do you sell any millet based value-added products? **1.Yes 2.No**

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

38. Remarks

Contact no of Respondent

Signature of the Researcher/Field Investigator

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ନବକୃଷ୍ଣ ଚୌଧୁରୀ ଉନ୍ନୟନ ଗବେଷଣା କେନ୍ଦ୍ର
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About NCDS, Bhubaneswar

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