BASELINE SURVEY: PHASE VI

GAJAPATI 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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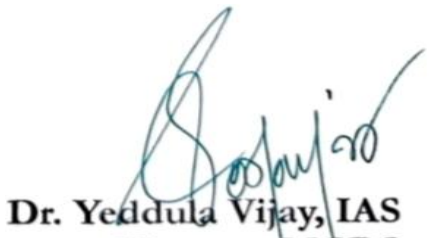
FOREWORD

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 completion of the Baseline Survey, 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 Gajapati 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

Gajapati 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 two blocks, namely, Kashinagar and Nuagada. Under the programme total 1142 households are identified, and out of which 160 households were selected through multi-stage sampling method and was covered under the Baseline Survey 2022.

Baseline Survey 2022 revealed that all sample households (160) belonged to Scheduled Tribe (ST) community covering a total population 594, of which 44.44 per cent are male and 55.55 per cent are female. In Kashinagar block 72 households are Christian and other 8 households are Hindu, and in Nuagada block all sample households belonged to Hindu. Out of the total, 99.37 per cent possessed Ration Cards. Among the sample population it was found that agriculture is primary occupation (33.69 per cent), the share of the Wage labourer 10.14 per cent, and 0.36 per cent belonged to be the Business owners, while the share of the government and private employees are only 0.72 per cent and 0.54 per cent, respectively. Out of the total just 2.53 per cent are Old Age Pensioners and another 2.53 per cent are unemployed. In addition to that 21.92 per cent belongs to Housewives, 27.53 per cent Students.

It is also observed that out of the total of 160 sample households, 42.50 per cent have *Semi-Pucca* houses, 29.37 per cent have *Kutcha* houses, while about 28.13 per cent have *Pucca* houses. The survey also found that 135 sample households have cultivated millets in the year 2021 covering a total operational area of 145.03 acres, with just 38.68 percent under millets cultivation. The average yield of millets production among the sample households for Mandia/ Ragi was 4.06 Quintals/ Acre and for Suan it was 0.76 Quintals/ Acre. As observed, all of the millets cultivating households used their own seeds and 83.70 per cent were satisfied with the quality seeds they used. Whereas 12.29 per cent of them are not satisfied with the seed they had used. The most common method of millets cultivation among the sample households (40.74 per cent) is Broadcasting (BC), followed by line transplanting (LT) (21.48 per cent) and line sowing (17.03 per cent) and rest 20.74 per cent used SMI.

As far as the consumption of millets is concerned, out of the total 160 sample households, 71.87 per cent consume millets in different seasons and at different meals of the day. It is also found that consumption of millets is highest during the summer season (92.17 per cent), while 59.13 per cent consume during the rainy season, and another 53.04 per cent during the winter season. To be specific, across the blocks most of the sample households consume during breakfast (86.96 per cent). Whereas, out of the total 80 per cent consume millets during their lunch, 54.78 per cent during Evening Snacks, and another 46.96 per cent during their dinner. *Jau/ Torani (*100 per cent) and *Tampo/Pitha* (86.96 per cent) are the most popular recipe among the sample households. The other popular recipes are *Chatua*, *Khiri* and *Idli/ Upma*.

As found by the Baseline Study, 2022 majority of the sample households (91.74 per cent) process millets by adopting the traditional methods, while 6.61 per cent by using machines and another 1.65 percent process by adopting both traditional as well as by using machines. Out of the total households, 91.85 per cent shared that they sell their millets at different selling points; to be specific 59.68 per cent sell to the Middlemen, 20.97 per cent to the Moneylender */Sahukar,* another 16.13 per cent sell to the local Businessman and the rest 3.23 per cent sell to the Mandi. In addition to that it was also found that 44 HHs (35.48 per cent) reported that they had experienced distress sale during the period to meet their long pending borrowings and other financial needs.

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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 Organizations
GP	:	Gram Panchayat
FAQ		Fair Average Quality
Ha	:	Hectares
HHs	:	Households
ICDS	:	Integrated Child Development Scheme
ITI	:	Industrial Training Institute
LS	:	Line Sowing
LT	:	Line Transplanting
MDM	:	Mid-Day Meal
MFP	:	Minor Forest Produce
MGNREGA	:	Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	:	Mahatma Gandhi National Rural Employment Guarantee Scheme
MSP	:	Minimum Support Price
NCDS	:	Nabakrushna Choudhury Centre for Development Studies
OBC	:	Other Backward Classes
OMM	:	Odisha Millet Mission
SAA	:	Shree Anna Abhiyan
PDS	:	Public Distribution System
SC	:	Scheduled Castes
SMI	:	System of Millet Intensification
SP	:	Sale Price
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 Glycemic 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 belonging to the Poaceae family, commonly known as the grass family. Millets are small, round whole grains 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 variety. Major millets include: Pearl, Foxtail, Proso (or white), finger (or Ragi) and 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 helps this mission to attention of general public including the farmers and agriculturalist. 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 Tribal Areas of Odisha (also known as Odisha Millets Mission, 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 facilitate overall agricultural aspects 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 2021, the implementation of SAA phase VI began in 17 districts, including Gajapati district and this baseline study aims to provide information on the program's dimensions in the district. The profile of the Gajapati district is presented below.

1.2 District Profile

The district of Gajapati was named in honour of Maharaja Sri Krushna Chandra Gajapati Narayan Deo, the former ruler of Paralakhemundi estate and the first Prime Minister of Odisha state. He played a key role in the formation of a separate Odisha province and the inclusion of Paralakhemundi estate in Odisha. The district has only one sub-division, which is Paralakhemundi. Gajapati district, situated in the lush green forests of south-eastern Odisha, is a picturesque district that was established on October 2, 1992, as per State Government Notification No. DRC (44/93/14218/R). Prior to that, it was a sub-division of the undivided Ganjam district. The district shares its boundaries with Rayagada, Phulbani and Ganjam districts of Chhattisgarh in the north and west, Rayagada and Phulbani districts in the North, Ganjam district in the south and it shares the border with Andhra Pradesh.

1.2.1 Geography and Topography

Gajapati district lay between18°.6’ to 19°.39’ North latitude and 83°.48’ to 84°.08’ East longitude and covers an area of 3850 sq. km. The district is surrounded by Andhra Pradesh in the south, Ganjam District in the east, Rayagada in the west and Kandahar in the north. The climate in Gajapati District varies between 16 degrees to 40 degrees Celsius and the normal rainfall received is 1403.30 mm. More than 60 percent of lands are situated in hilly terrain and high lands which are mainly suitable for horticulture. The soil and climate are suitable for plantation of crops and there is a great potential of horticulture development in the district. Mango, guava, citrus, banana, cashew nut etc. are some of the crops grown in Gajapati district.

1.2.2 Economy

The agricultural sector is the main source of income for Gajapati District. The region also benefits from agro–processing and horticulture industries. The district’s economy is based on agriculture. There are no major industries in the district, except for some agro–processing units. However, some cottage industries such as Horn work, Jaikhadi Bag, Cane and bamboo work, Ganjappa Card and Pattachitra Mukha, Broom work and Siali leaf plate making and Tibetan Woollen Carpet also contribute to the district’s economy. The district has no mineral resources of economic value in its mountains. However, it has abundant granite decorative stones in some parts of Paralakhemundi Tehsil, which are used for construction and ornamentation. The district is also blessed with two major rivers, Vansadhara and Mahendra Tanaya, which originate from the neighbouring districts of Kalahandi and Rayagada respectively. They flow through different blocks of Gajapati district and provide irrigation and drinking water to the people. Another river, Badanadi, flows through the western part of Mohona block. The

district has a large forest cover, which provides timber, bamboo, hill broom, Patala Garuda and other forest products.

1.2.3 People and Culture

According to 2011 Census, the total population of Gajapati district is as 5,77,817 comprising total 2,82,882 male population and 2,94,935 female population. The share of Scheduled Tribe (STs) population constitutes more than half of the total population of the district, i.e., 54.29 per cent with 3,13,714 population while Scheduled Castes (SCs) constitute about 6.78 per cent with 39,175 population.

Tribal form majority of the population of Gajapati District, the Saora Community constitutes the largest group among them and Lanjia Saora is considered most primitive in this district. The Saoras are one of the oldest known tribes of India. They are called by various terms such as Savaras, Sabaras, Saura, Sora etc. But here the term Saora is used uniformly as it is closely approximately their language. They are widely distributed from Bundelkhand in the west to Odisha in the east. But they are found in great compactness on the edges of the Eastern Ghats in Ganjam, Gajapati and Koraput District of Odisha and Srikakulam district of Andhra Pradesh. The Saoras show their racial affinity to the Proto Australoid physical characters which are dominant among the aborigines of Central and Southern India. Their language is akin to the Kolarian stock which has close resemblance to the forms of speech of the wild tribes of Malayan Peninsula and Nicobar Islands. Their linguistic affinity with the tribes of South-East suggests their migration from the Islands of India Archipelago and Malayan peninsula, unless contrary is proved that India was the cradle-land of the Kolan speaking tribes and the South-Eastern countries were colonized by them. The term Saora appears to have two connotations – one derived from Sagoriss, the Scythian word for axe and the other from Sabaroye', the Sanskrit term for carrying a dead boy. Both of them fit well with their habit of carrying an axe always on their shoulders with their primitive occupation of hunting.

The Epics and Purans refer to their devotion to the Hindu religious heroes like Rama and the Jagannath cult. The legend of Viswabasu, a Saora king who worshipped the image of Vishnu in the term of Lord Jagannath indicates the impact of Vaishnavism on the Saoras. It is well known that, like other tribal communities, the Saoras are the indigenous, autochthons of India in the sense that they had been long settled in different parts of the country particularly on the plains and river valleys and other fertile areas. Many of the Saoras were in a food gathering economy and a few were perhaps on the threshold of a real food producing economy. On the whole, they were in all respects primitive, wild and under developed.

The culture of Gajapati district is reflected in the socio-economic life and traditions of the native Saoras who are primarily a hunter community. The artisans of Maharana caste in Paralakhemundi are known for their rich cultural heritage in horn craft. They originally worked as carpenters but took up horn craft during the reign of Sri Krishna Chandra Gajapati Narayan Deb, the Maharaja of Paralakhemundi. The district celebrates several festivals such as Ratha Yatra (Car Festival), Dussehra, Thakurani Yatra and Pongal.

Table 1.1: Socio-Economic and Demographic Features of Gajapati district	
Indicators	*Value*
Population (in Lakh.) (as per Census 2011)	5.7
Male (in Lakh.)	2.8
Female (in Lakh.)	2.9
Scheduled Castes (in Lakh.)	0.4
Scheduled Tribes (in Lakh.)	3.1
Others (in Lakh.)	2.2
Total Households (in Lakh.)	128.8
Average HH Size (in Nos.)	4.5
Sex Ratio	1032
Workers	
Total Worker (in Lakh)	2.9
Main (in Lakh)	1.7
Marginal (in Lakh)	1.2
Non-Worker (in Lakh)	2.8
Work Participation Rate (WPR)	53.5
Literacy Rate	51
Land Use Pattern 2018-19 (Area in '000 Hectares)	
Total Geographical Area (sq.km.)	4325
Forest (sq. km.)	51
Land Put to Non-Agricultural Use	11
Barren and Non-Cultivatable Land	141
Permanent Pasture and Other Agricultural Land	15
Net Area Sown	59
Cultivable waste Land	6
Old Fallow	8
Current Fallows	13
Misc. Trees and Groves	5
Average Fertilizer Consumption per ha (in kg/ha)	31.5
Agriculture 2018-19*	
Total Production of Major Crops (In '000MT)	86.96
Total Ragi Production (in '000 MT)	4.84
Irrigation Potential Created 2017-18* (Area in '000 Hectares)	
Kharif	33.6
Rabi	9.1
Other Information	
No. of Village Electrified (as on 31.03.21)	1324
No. of Bank	44
No. of AWC	1442
No. of PDS centres (2011)	
No. of Job Curd Issued	121191
No. of HH provided employment under MGNREGA during 2017- 18 (in Lakh)	74391

Source: District Statistical Handbook, Gajapati 2018

1.2.4 Administrative Structure

Paralakhemundi town serves as the administrative headquarters of Gajapati district, encompassing one sub-division. The population density of the district is lower than the state with 134 persons per sq.km. The sex ratio of the district is 1034 which is higher than the state, i.e., 270 person per sq. km. Paralakhemundi Sub-division is the only subdivision in Gajapati district. For the convenience of revenue administration, the district is divided into7 Tehsils viz. R. Udayagiri, Mohana, Paralakhemundi, Nuagada, Gumma, Kashinagar and Rayagada with one Tehsildar in charge of each Tehsil. For development of rural areas consisting of 1616 villages in 129 Gram Panchayats, the district is divided into seven Community Development (CD) Blocks with one Block Development Officer in charge of each Block.

1.3 Objectives

The Baseline Survey, 2022 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 a whole as well as it will be useful for evaluation of the programme in the future. 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.
- 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 7 districts of the state in Phase I during 2017-18 however, later it has expanded to all 30 districts in different phases. However, under Phase VI 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 two blocks of Gajapati, namely, Kashinagar, and Nuagada.

As per the list provided by the SAA Programme Secretariat, there are 1142 beneficiary or programme households across the two blocks and 15 Gram Panchayats (GP). Under Phase VI of SAA, in Kashinagar block there are 376 programme or target households across 23 villages and five GPs who are willing to cultivate millets under the programme. While in Nuagada block, there are 766 households across 56 villages of 10 GPs. For conducting the Baseline Survey 2022, Phase VI, multi-stage sampling methods has been followed. In the first stage, two blocks, namely, Kashinagar and Nuagada have been purposively selected for the study as SAA is going to implemented in these two blocks in Phase VI.

In the second stage, two GPs of each block have been selected for the study in consultation with the respective facilitating agencies (FAs) and district level officials of the agriculture department. K. Sitapur and Kharada GPs from Kashinagar block, Betarsing and Tanginli GPs from Nuagada block have been

selected for the study. In the third stage, two villages from each GP 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, as a total of 160 households from 8 villages, four GPs and two blocks have been selected purposively for the study as it's presented in Table 1.2

Table 1.2: Sample Households selected in Gajapati District

Blocks	Programme Households (No)	Sample Households (No)	Households Covered under the Survey (%)
Kashinagar	376	80	21.28
Nuagada	766	80	10.44
Total	1142	160	14.01

Source: Facilitating Agency and Field Survey, 2022

1.4.2 Data Collection, Compilation and Analysis

A total of sixteen villages were selected from two blocks, where two Gram Panchayats across two blocks were selected for data collection in the Gajapati district for the Baseline Survey of 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 two blocks of the district. Eight Gram Panchayats were randomly selected from each block, and two villages were selected from each of these Panchayats.

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) and Focus Group Discussions (Annexure III) 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 complement the findings of the Baseline Survey, Focus Group Discussions were conducted in each sample village. The FGDs comprise of key respondents from the villages, including community leaders, village officials and other stakeholders 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 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 and FGDs were analysed using appropriate statistical tools and techniques to generate a comprehensive report.

The report provides an in-depth analysis of the current situation in the selected villages and serves as a reference point to measure the progress made during the implementation of various development interventions in the future. It also highlights the gaps and challenges in the existing systems and infrastructure. It provides recommendations for improving the overall development indicators of the region.

The present Baseline Survey focuses solely on two blocks of the Gajapati District. However, due to the daily activities of the households, including grazing of their livestock, 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.

1.5 Limitations of the 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 160 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 2022, Phase VI” has been divided into six Chapters, including the current Introductory Chapter I, which provided a District Profile, Objectives, Methodology and Limitations. Chapter II provides the Socio-economic Profile of sample Households. 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.

Fig. 1.1: Map of Gajapati District with Blocks

Source: Gajapati District Website

Chapter II

SOCIO-ECONOMIC PROFILE

2.1 Introduction

This Chapter investigates the social and demographic profile of households surveyed under Baseline Survey 2022, Phase VI, which includes the distribution of sample households by their social groups, and the distribution of the population by gender as well the distribution of population by their education status across the two blocks in Gajapati district. It also provides information about the distribution of households by their religion. It also provides information regarding occupational distribution of population among the sample households. Additionally, it also provides information about possession of ration card by the sample households and distribution households by their house structure.

2.2 Social and Demographic Profile

Under the Baseline Survey 2022, Phase VI in Gajapati district, 16 selected villages were surveyed (for selection Methodology, see Section 1.4.1) across the two blocks of Gajapati district. This section discussed the social composition of the surveyed households', their economic activities, poverty status, and housing structures.

2.3 Social Composition

The analysis of social composition of sample households under the Baseline Survey 2022, Phase VI in Gajapati district shows that all the households of both blocks belong to Scheduled Tribes (STs). While in Kashinagar block majority of them belong to *Soura* tribe and majority of them speak *Soura* language for day to day communication and some of them also speak *Telugu* language. But in Nuagada block majority of the sample households belong to *Sabara* tribe, and they speak Odia language and some of them speak *Telugu*.

2.4 Distribution of Sample Population by their Gender

The gender distribution of population among the sample households presented in (Fig.2.1and Table 2.1). The survey data reveals that out of total 594persons among the sample households 44.44 per cent of them are male and 55.55 per cent of them are female.

Fig.2.1: Distribution of Sample Population by their Gender

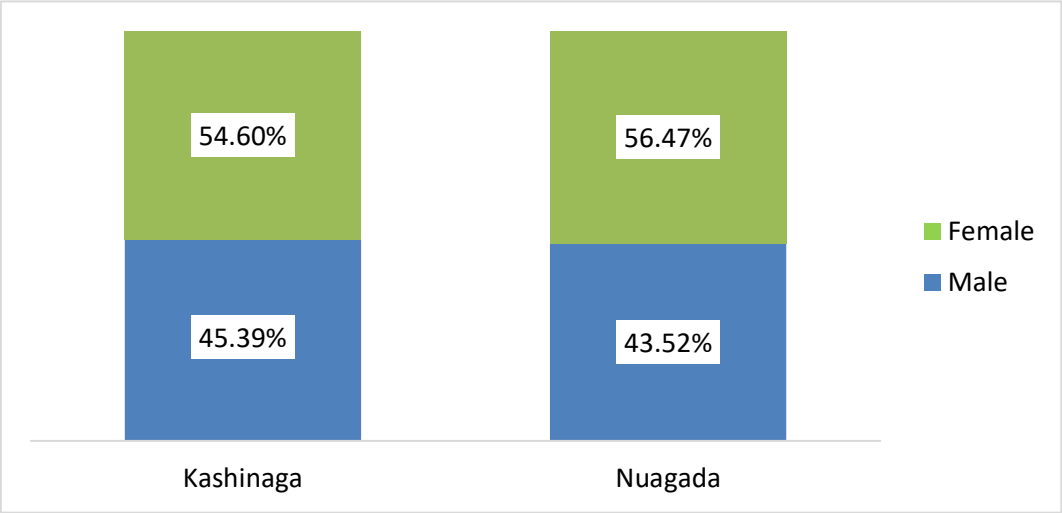


Table 2.1: Distribution of Sample Population by their Gender						
Blocks	Male		Female		Total	
	No.	%	No.	%	No.	%
Kashinagar	133	45.39	160	54.60	293	100
Nuagada	131	43.52	170	56.47	301	100
Total	264	44.44	330	55.55	594	100

Source: Baseline Survey, 2022

The block wise distribution of population by gender shows that in Kashinagar block, out of the total population of 293 among the sample households 45.39 per cent of them are male and 54.60 per cent are female. While in Nuagada block, out of the total population of 301 persons among the sample households about 56.47 per cent of them are female and 43.52 per cent of them are male.

2.5 Distribution of the Respondent HHs by their Religion

The religious distribution of the surveyed households across the two selected blocks reveals presence of religious diversities that exist in both blocks under the Baseline Survey 2022, Phase VI of Gajapati district. It shows that in Kashinagar block among the sample households all of them belong to Christian religious community. While in Nuagada block all the sample households are Hindu. (table2.2).

Table 2.2: Religious Distribution of the Surveyed Households				
Blocks	Hindu		Christian	
	No.	%	No.	%
Kashinagar	8	10	72	90
Nuagada	80	100	0	0
Total	88	55	72	45

Source: Baseline Survey, 2022

2.6 Population distribution by Age Groups

Table 2.3 presents the distribution of the population by age groups in Kashinagar and Nuagada blocks, covering a total of 594 individuals. The young adult population (19–44 years) constitutes the largest share, making up 42.42% (252 individuals) of the total population, with 119 individuals (40.61%) from Kashinagar and 133 individuals (44.19%) from Nuagada. The middle-aged group (45–59 years) forms the second-largest segment, comprising 17.34% (103 individuals), almost evenly distributed across the two blocks (51 from Kashinagar and 52 from Nuagada). Adolescents (13–18 years) account for 14.65% (87 individuals), with a slightly higher proportion in Kashinagar (45 individuals, 15.36%) than in Nuagada (42 individuals, 13.95%). The child population (6–12 years) represents 12.12% (72 individuals), followed by preschool-aged children (3–5 years), who make up 3.54% (21 individuals). Infants (0–2 years) contribute 3.70% (22 individuals) to the total population, with Nuagada having a marginally higher share (12 infants, 3.99%) than Kashinagar (10 infants, 3.41%). The elderly population (60 years and above) constitutes 6.23% (37 individuals), with a higher number in Kashinagar (24 individuals, 8.19%) compared to Nuagada (13 individuals, 4.32%). Overall, the population is concentrated in the younger age groups, with individuals below 45 years comprising nearly 59.76% of the total population. This indicates a demographically youthful profile with a substantial working-age base, along with a moderate proportion of dependent populations in both younger and older categories.

Table 2.3: Distribution of Population by Age Groups

Age	Kashinagar		Nuagada		Total	
	No.	%	No.	%	No.	%
Infant (0-2 Year)	10	3.41	12	3.99	22	3.70
Preschool (3-5 Year)	10	3.41	11	3.65	21	3.54
Children (6-12 Year)	34	11.60	38	12.62	72	12.12
Adolescent (13-18 Year)	45	15.36	42	13.95	87	14.65
Young Adults (19-44 Year)	119	40.61	133	44.19	252	42.42
Middle Age (45-59 Years)	51	17.41	52	17.28	103	17.34
Old (60 &above)	24	8.19	13	4.32	37	6.23
Total	293	100	301	100	594	100

Source: Baseline Survey, 2022

2.7 Education Status

Table 2.4 shows that the educational profile of 551 individuals across the two blocks: Kashinagar and Nuagada. A significant portion of the population remains illiterate, accounting for 41.02% (226 individuals). Illiteracy is most prevalent in Kashinagar (54.95%) and in Nuagada (27.34%). Those educated up to Class 5 represent 12.70% (70 individuals), with the highest proportion in Nuagada (16.19%). The population with education from Class 6 to 10 forms 24.14% (133 individuals), highest in Nuagada (25.54%). Higher secondary education accounts for 7.62% (42 individuals), with similar distribution in another block (2.20%–12.95%). Graduates make up 7.99% (44 individuals), with Kashinagar and Nuagada each contributing 11 and 33 individuals respectively. Post-graduates (6.35%) are more concentrated in Nuagada (11.87% and 6.12%, respectively) compared to Kashinagar (4.03%

and 6.59%). Technical education is negligible, with only one person (0.18%) reported from Kashinagar. Overall, the data indicate that Kashinagar has a higher share of illiterate population, whereas Nuagada shows relatively better educational attainment, particularly at higher secondary and graduate levels.

In summary, while nearly one-third of the population lacks formal education, there is also a notable share with secondary and higher education. However, technical, and professional qualifications remain limited, indicating a potential area for educational and skill development interventions.

Table 2.4: Distribution of population by their Education

Blocks	Kashinagar		Nuagada		Total	
	No.	%	No.	%	No.	%
Illiterate	150	54.95	76	27.34	226	41.02
Up To Class 5	25	9.16	45	16.19	70	12.70
Class 6-10	62	22.71	71	25.54	133	24.14
Higher Secondary	6	2.20	36	12.95	42	7.62
Graduation	11	4.03	33	11.87	44	7.99
Post-Graduate	18	6.59	17	6.12	35	6.35
Technical	1	0.37	0	0.00	1	0.18
Total	273	100	278	100	551	100

Source: Baseline Survey, 2022

2.8 Respondent HHs by their Ration Card

Figure 2.2 and Table 2.5 presented the distribution of sample households by their possession of ration card across the two selected blocks of Gajapati. It shows that out of 80 sample households a significant majority, i.e. 98.75 per cent of them possess ration card while rest of the 1.25 per cent of them do not possess ration card in Kashinagar. But in throughout two blocks distribution of sample households by their ration card possession reveals that about 99.37 per cent of households in each of the two blocks possess ration card while rest of the 0.63 per cent of the households in each block do not possess ration card.

Fig.2.2: Distribution of sample HHs by their Ration Card

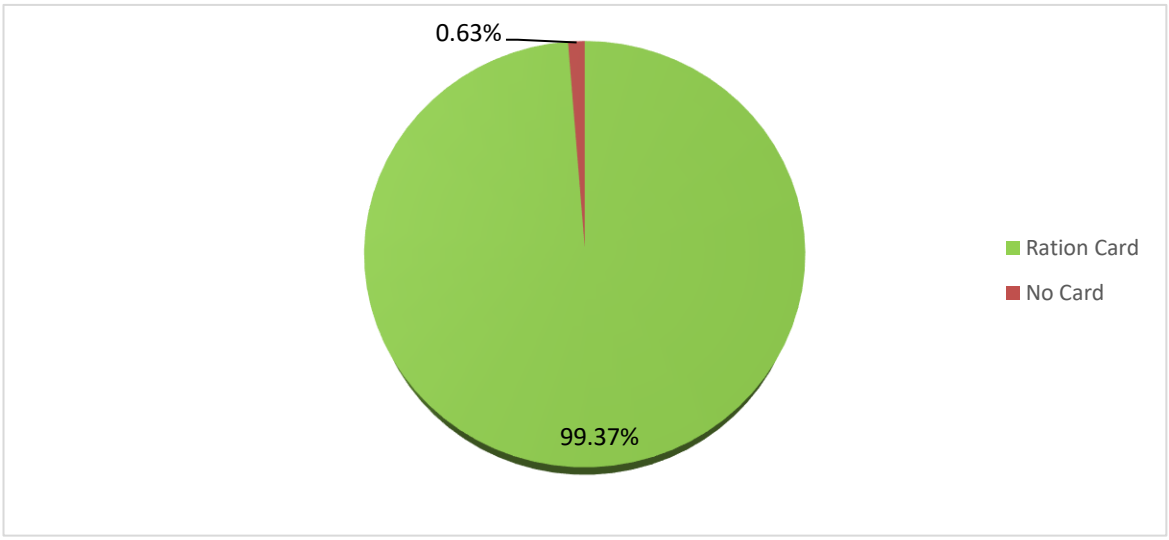


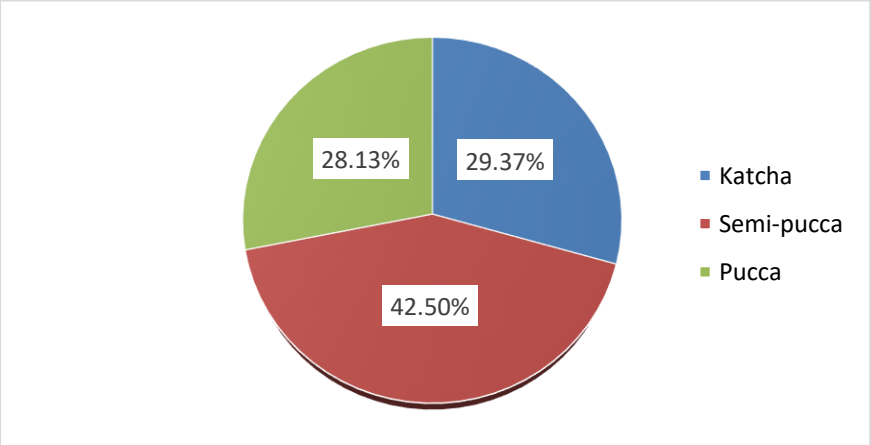
Table 2.5: Distribution of HHs by their Possession of Ration Card across the Blocks				
Blocks	HHs with Ration Cards		HHs without Ration Cards	
	No	%	No	%
Kashinagar	79	98.75	1	1.25
Nuagada	80	100	0	0
Total	159	99.37	1	0.63

Source: Baseline Survey, 2022

2.9 House Structure of the Sample Households

The house structure often considered as an important indicator of the social and economic status of the family. Data collected under the Baseline Survey 2022, Phase VI in the two blocks of the Gajapati district is presented in *Figure 2.3.* It shows that out of 160 sample households about 42.50 per cent have Semi-*Pucca* houses, 29.37 per cent of them have *Kutcha* houses and rest of the 28.13 per cent have *Pucca* houses.

Fig.2.3: Distribution of Respondent HHs by their House Structures



The Block-wise distribution of households by their house structure is presented in Table 2.6. It shows that in Kashinagar, about 38.75 per cent have *Pucca* houses, 32.50 per cent of them have Semi- P*ucca* houses, and 28.75 per cent *Kutcha* houses. While in Nuagada block, 52.50 per cent households have Semi-*Pucca* houses, 30 percent households have *Kutcha* houses, and rest of the 17.50 per cent households have *Pucca* houses.

Table 2.6: Block-Wise Distribution of HHs by House Structure								
Blocks	**Kutcha**		**Semi-Pucca**		**Pucca**		**Total**	
	No.	%	No.	%	No.	%	No.	%
Kashinagar	23	28.75	26	32.50	31	38.75	80	100
Nuagada	24	30.00	42	52.50	14	17.50	80	100
Total	47	29.37	68	42.50	45	28.13	160	100

Source: Baseline Survey, 2022

2.10 Occupation

The distribution of population by their main occupation among the sample population have been presented in Table 2.7.It reveals that out of the total population of 594 persons, about 33.69 per cent of them are associated with agriculture as their main economic activities, about 10.14 per cent of them are depend upon wage labour as their main economic activities, only 0.36 per cent are business owners while the share of government and private sector employee is 0.72 per cent and 0.54 per cent, respectively. Again about 21.92 per cent are housewife, 27.53 per cent are student, 2.53 per cent of them are pension holders while rest of the 2.53 per cent in the working age groups are unemployed.

Table 2.7: Distribution of Sample population by their Occupation

Occupation	Kashinagar		Nuagada		Total	
	No.	%	No.	%	No.	%
Agriculture	102	37.36	84	30.10	186	33.69
Wage Labour	21	7.69	35	12.54	56	10.14
Business	0	0.00	2	0.71	2	0.36
Govt. Service	0	0.00	4	1.43	4	0.72
Pvt. Service	0	0.00	3	1.07	3	0.54
Housewife	52	19.04	69	24.73	121	21.92
Pension	10	3.66	4	1.43	14	2.53
Student	76	29.83	76	27.24	152	27.53
Unemployed	12	4.39	2	0.71	14	2.53
Total	273	100	279	100	552	100

Source: Baseline Survey, 2022

The block-wise distribution of population by their main economic activities presented in the Table 2.7, which shows that in Kashinagar block, about 37.36 per cent of population in among the sample households shows are associated with agriculture, 7.69 per cent are wage labourer, about 19.04 per cent of them are housewives while 29.83 per cent are students. About 3.66 per cent of them are (old age) pension holders, and rest of the 4.39 per cent (in working age groups) are unemployed. Similarly, in Nuagada block, about 30.10 per cent are farmers, 12.54 per cent are wage labourer and only 0.71 per cent is business owners while the share of government and private employees is 1.43 per cent and 1.07 per cent, respectively. About 24.73 per cent of them are housewives while 27.24 per cent are students. 1.43 per cent of them are (old age) pension holders, and rest of the 0.71 per cent (in working age groups) are unemployed

2.11 Annual Income

Table 2.8 shows the distribution of annual income of the sample households. The annual income of households, categorized in six income groups. Distribution of sample households by their annual income across Kashinagar and Nuagada blocks. In Kashinagar, more than half of the households (53.75%) fall in the lowest income group of up to ₹40,000, followed by 32.50% in the ₹40,000–80,000 range. Only a small proportion (8.75%) earn between ₹80,000–1,20,000, and 5% between ₹1,20,000–1,60,000. In Nuagada, 33.75% of households have an income up to ₹40,000, while 36.25% earn between ₹40,000–80,000. About 15% fall in the ₹80,000–1,20,000 range, and 10% earn above

₹2,00,000. Overall, the majority of households (43.75%) belong to the lowest income group, indicating that most families in both blocks have low annual income levels.

Table 2.8 Distribution of Sample HHS by Annual Income

Blocks	Up to 40000		40000-80000		80000-120000		120000-160000		180000-200000		Above 200000		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Kashinagar	43	53.75	26	32.50	7	8.75	4	5	0	0	0	0	80	100
Nuagada	27	33.75	29	36.25	12	15	3	3.75	1	1.25	8	10	80	100
Total	70	43.75	55	34.37	19	11.86	7	4.37	1	0.63	8	5	160	100

Source: Baseline Survey, 2022

2.12 Land Ownership Pattern

Table 2.9 shows the distribution of sample households in Kashinagar and Nuagada according to their land ownership. Most households (70.62%) own less than 2 acres of land, with Kashinagar (72.5%) and Nuagada (68.75%) showing a similar pattern. This indicates a predominance of small and marginal landholdings in both regions. Households owning more than 2 to 5 acres of land constitute 29.38% of the total, with a slightly higher share in Nuagada (31.25%) compared to Kashinagar (27.5%).

Table 2.9: Sample HHs by their Land Ownership

Category	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
Less than 2 Acres	58	72.5	55	68.75	113	70.62
More than 2 to 5 Acres	22	27.5	25	31.25	47	29.38
Total	80	100	80	100	160	100

Source: Baseline Survey, 2022

2.13 Conclusion

All the samples' households across the two selected blocks of Gajapati district are belong to Scheduled Tribe (ST). The religious distribution of the sample households shows that in all of them are Christian and in Nuagada block all of them are Hindu. 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 160 surveyed HHs across the two blocks Gajapati district almost all of them possess ration cards and more than 40 per cent of the sample households have *Semi-Pucca* houses.

Chapter III

PROCUTION OF MILLETS

3.1 Introduction

The Baseline Survey 2022, Phase VI of SAA was conducted in two selected blocks of Gajapati district to assess the situation of millets cultivation and its usage in the target villages before the implementation of the programme interventions. This chapter deals with the production of millets in Kashinagar and Nuagada blocks of the district and analyses the data collected during the survey. 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. The 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 two blocks – Kashinagar and Nuagada offers important insights into the cropping patterns in the study area. The data captures the cultivation preferences for paddy**,** millets**,** vegetables**,** and other crops**.** Millets emerged as the most widely cultivated crop, with 135 households (84.38%) across all blocks engaged in millet farming. Nuagada had the highest proportion of millet cultivators (86.25%)**,** followed closely by Kashinagar (82.5%). Paddy is also a prominent crop, cultivated by 139 households (86.87%) in total. Block-wise, paddy cultivation is relatively uniform, with Kashinagar and Nuagada both at 87.5 & 86.25 respectively. This indicates that paddy remains a staple component of the cropping system, although slightly less dominant than millets. Notably, 53(33.12%) household reported growing vegetables in any of the surveyed blocks. The category of Other Crops was reported that 31 households (19.38%) in the district.

Table 3.1: Distribution of sample HHs by their crops

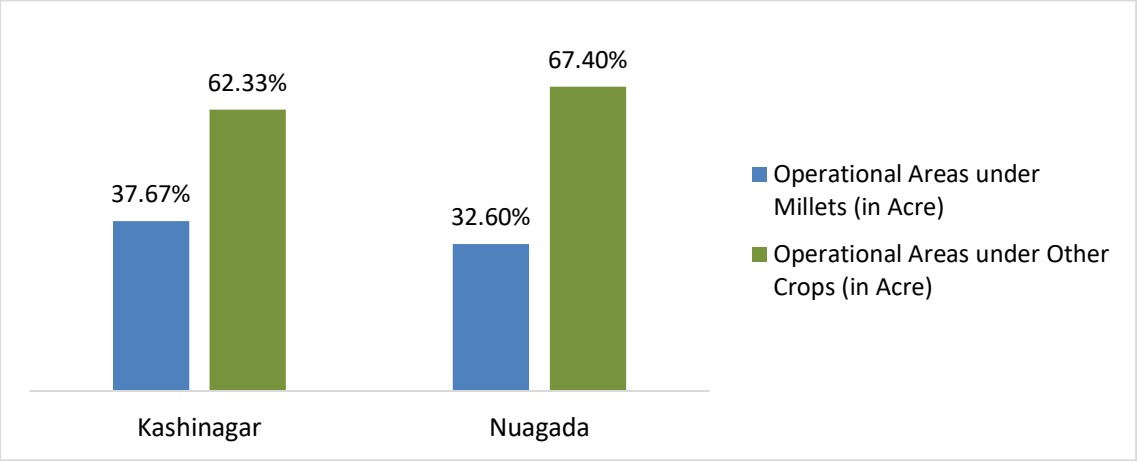
Blocks	Paddy		Millets		Vegetables		Other crops	
	No	%	No	%	No	%	No	%
Kashinagar	70	87.5	66	82.5	27	33.75	13	16.25
Nuagada	69	86.25	69	86.25	26	32.5	18	22.5
Total	139	86.87	135	84.38	53	33.12	31	19.38

Source: Baseline Survey, 2022

The distribution of operational area under millets and other crops across the two selected blocks in the Gajapati district reveals that major portion of the operational areas in the district is under others crops. Out of the total 374.53 acres of total operational areas under the sample households of both blocks about 38.68 percent of total operational land area is under millets cultivation while 61.32 percent under other crops.

3.3 Operational area under crops

Fig. 3.1: Distribution of HHs by Area under Millets and Other Crops



The block-wise distribution of the operational area under millets and other crops is presented in Table 3.2 shows that under the sample households a significant portion of operational area, i.e., almost 39 per cent of total operational area is under millets cultivation. In Kashinagar block out of total 171.18 acres of operational areas under the sample households, about 39.62 percent area is under millets and 60.38 percent is under other crops. Similarly, in Nuagada, out of total 203.53 acres of operational area among the sample households, about 37.93 percent is under millets cultivation and 62.07 percent is under other crops.

Table 3.2: Distribution of HHs by Area under Millets and Other Crops

Blocks	Operational Area under Millets		Operational Area under Non-Millet Crops		Total Operational Area	
	Area (in acres)	%	Area (in acres)	%	Area (in acres)	%
Kashinagar	67.83	39.62	103.35	60.38	171.18	100
Nuagada	77.20	37.93	126.33	62.07	203.53	100
Total	145.03	38.68	229.68	61.32	374.53	100

Source: Baseline Survey, 2022

3.4 Area, Production and Yield of Millets

The block-wise analysis of production and yields of different types of millets reveals that in Kashinagar and Nuagada blocks, all the sample households cultivate millets. Table 3.2 presents the distribution of areas under millets cultivation, production, and average yield in the Gajapati district. Ragi and Suan (they called *Gangai*) are the most common millets they cultivate while most of the households cultivate *Jana* in small amount therefore unable to provide land areas under it as well as yield. The total production of millets in Kashinagar was 241.25 quintals and the yield was 3.56quintals per acre. While in the total production of *Suan* in Kashinagar was 83.05 quintals and the yield was 1.33 quintals per acre. In Nuagada block the total production of Mandia/Ragi was 348 quintals and yield was 4.51 which are lower than the Kashinagar block. The total production of Suan in Nuagada block was 14.5 quintals and the yield was 0.22 quintals per acres. Among the 160 sample households across the two blocks

was about 379.35 quintals, and the average yield of *Mandia/* Ragi Gajapati district was 2.96 quintals per acre. While the total production of *Suan (Ganga)* in the two selected blocks of Gajapati was 97.55 quintals, and the yield of Suan was 0.76 quintals per acre.

However, the data on the total area under other millets (except Mandia/Ragi) and their yield may not be precise or adequate because they cultivate in smaller sizes and often with other crops.

Table 3.3: Distribution of HHs by Area, Production and Yield of Millets

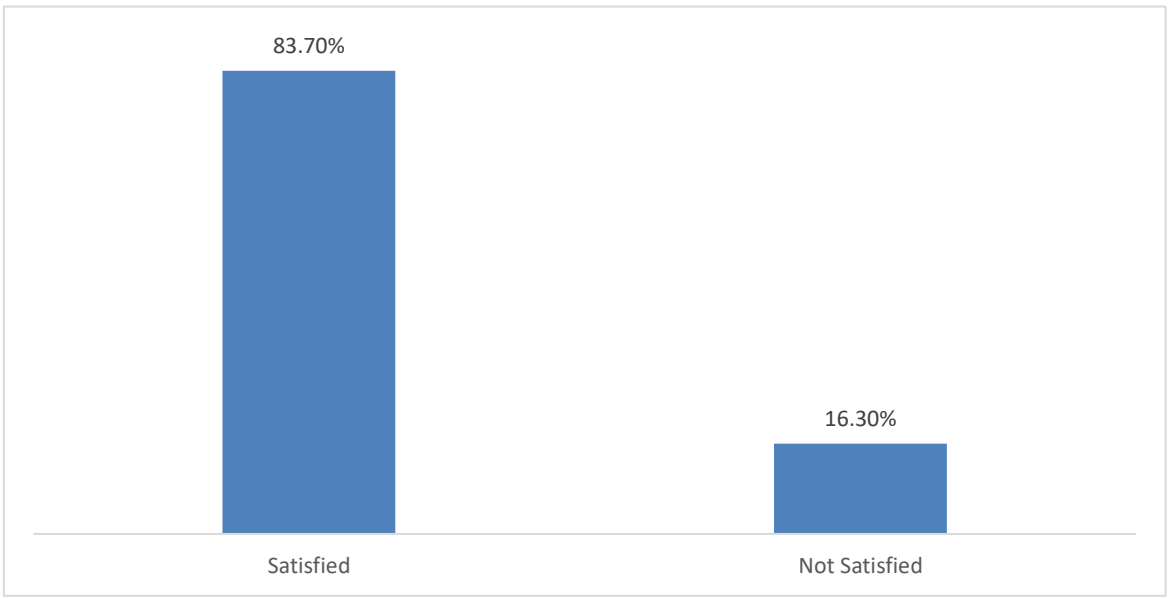
Blocks	Millets Area (in Acres)	Millets Production (in Qtl.)	Yield (Qtl. / Acre)
Mandia/ Ragi			
Kashinagar	67.83	241.25	3.56
Nuagada	77.2	348.00	4.51
Mandia Total	145.03	589.25	4.06
Suan (Gangai)			
Kashinagar	62.46	83.05	1.33
Nuagada	65.6	14.5	0.22
Suan Total	128.06	97.55	0.76

Source: Baseline Survey, 2022

3.5 Perception on Quality of Seeds Used

The quality of seeds for any crops plays an important role in the growth of crops as well as its production. Most of the time, the quality of seeds used determines the volume of production. High-quality seeds give more returns in terms of production. Farmers often preserve selected seeds for the next crop to reap the benefits. This section attempted to understand the general perception of millet farmers about the seeds they used, whether they are satisfied or not with the quality of seeds they use for millets cultivation.

Fig.3.2: Distribution of HHs by Perception on Seeds' Quality



Out of the 135 sample households in Gajapati district, about 83.70 per cent of millet-cultivating households are satisfied with the quality of seeds they use for millet cultivation, while 16.30 per cent found the seed quality not satisfactory (bad). (Figure 3.2)

In Kashinagar block, 84.84 per cent of households reported good quality seeds, whereas 15.15 per cent rated them as bad. Similarly, in Nuagada block, 82.60 per cent of millet farmers expressed satisfaction with the seed quality, while 17.39 per cent considered them poor. The distribution of millet-cultivating households regarding their perception of seed quality is presented in Table 3.4, which clearly shows that a vast majority of farmers are satisfied with the quality of seeds they use.

Table 3.4: Distribution of HHs by Perception about Millet Seeds Used

Blocks	No. of HHs Cultivating Millets (%)	Satisfied		Not Satisfied	
		No	%	No	%
Kashinagar	66(82.5%)	56	84.84%	10	15.15%
Nuagada	69(86.25%)	57	82.60%	12	17.39%
Total	135(84.37%)	113	83.70%	22	16.30%

Source: Baseline Survey, 2022

3.6 Types of Millets Seeds used by Households

The data presented in Table 3.5 reveals that the majority of the sample households across all two blocks predominantly rely on local/Desi varieties of seeds for millet cultivation. Out of a total of 135 cultivating households,74 (54.81%) reported using local seeds, while 61 households (45.18 %) were found to be using High Yielding Varieties (HYV). Block-wise analysis shows that in Kashinagar and Nuagada, 33 HHs and 41 HHs are exclusively use local seeds. The adoption of HYV seeds is observed in Kashinagar (33 individuals) and Nuagada (28 individuals).

Table3.5: Distribution of HHs by Type of Millets Seeds they Use

Type of Seed	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
HYV	33	100	28	40.57	61	45.18
Desi/Local	33	100	41	59.42	74	54.81
Total	66	100	69	100	135	100

Source: Baseline Survey, 2022

3.6 Package of Practices

In agriculture the methods of cultivation play a vital role in the growth and production of crops. Therefore, different agronomic practices being followed by the farmers suited to their land and socio-economic condition of the households. This section discusses the agronomic practices followed by the respondent households of the selected blocks in the Gajapati district.

The adoption of different agricultural practices varied notably between Kashinagar and Nuagada blocks. Out of the total 135 households surveyed, broadcasting emerged as the most common practice, adopted by 55 households. Of these, a majority were from Kashinagar (40.91%) compared to Nuagada (40.58%). Similarly, the System of Millet Intensification using SMI was more prevalent in

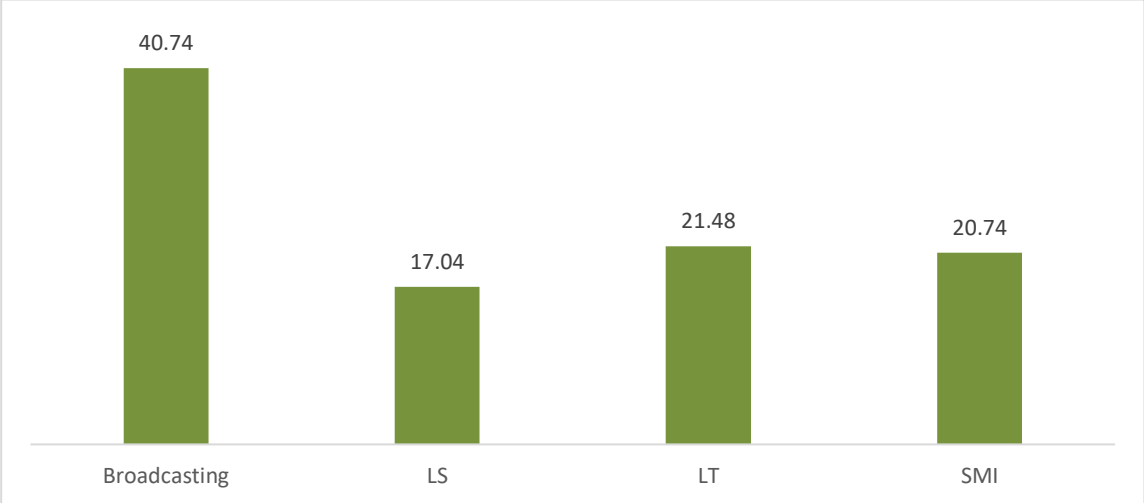
Nuagada, where 26.09% of the adopters belonged, as against 15.15% in Kashinagar. By contrast, Line Sowing (LS) was practiced by 23 households, with a slightly higher proportion in Nuagada (18.84%) than Kashinagar (15.15%). Interestingly, Line Transplanting (LT) showed a reverse trend, with Kashinagar reporting a higher share (28.79%) compared to Nuagada (18.84%). (Table 3.5).

Table 3.5: Distribution of Households by Package of Practices

Practices	Kashinagar (66)		Nuagada (69)		Total	
	No	%	No	%	No	%
Broadcasting	27	40.91	28	40.58	55	40.74
LS	10	15.15	13	18.84	23	17.04
LT	19	28.79	10	14.49	29	21.48
SMI	10	15.15	18	26.09	28	20.74
Total	66	100	69	100	135	100

Source: Baseline Survey, 2022

Fig. 3.3 Distribution of Households using Package of practices



3.7 Use of Fertilisers and Pesticides

Land fertility and pest control are crucial parts of agricultural practice, especially for growth and production of the crops. Farmers use various methods to increase their land fertility and crop protection. These methods are mainly divided into two categories, viz. Organic and chemical methods. Organic methods of fertilizers include organic manure includes cow dung, goat, and sheep manure while organic methods of pest control include different oils, for example Neem Oil and pesticides made from organic ingredients such as cow urine, extract of different plants etc. Although, millets cultivation requires minimum fertilisers input and pest control unlike other major crops like rice, wheat and maize, this section try to capture the trends and patterns about the use of fertiliser and pesticides in the sample households of the district. Figure 3.4 presented the pattern of fertilisers use among the millets cultivating households in the two selected blocks of Gajapati district. It reveals that out of total 135 sample households across the two selected blocks of Gajapati

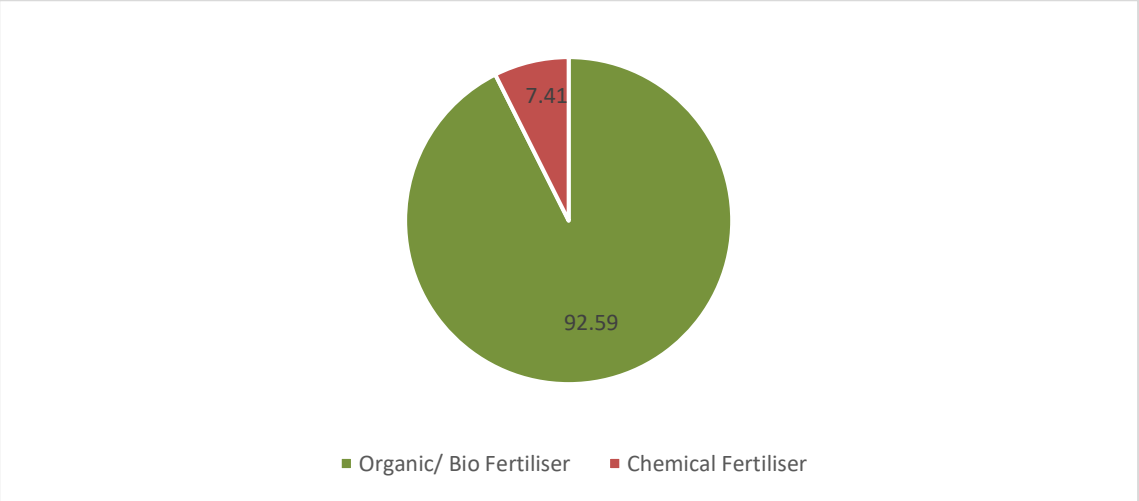
district, about 92.59 per cent households use organic/bio-fertilisers, whereas only 7.41 per cent households use chemical fertilisers.

Table 3.6: Distribution of Households by use of Fertilisers

Fertilisers	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
Organic/ Bio Fertiliser	60	90.91	65	94.20	125	92.59
Chemical Fertiliser	6	9.09	4	5.80	10	7.41
Total	66	100	69	100	135	100

Source: Baseline Survey, 2022

Fig.3.4: Distribution of Households by their use of Fertilisers



The block-wise distribution households by their use of fertilisers in the selected blocks are presented in table3.6. It shows that in Kashinagar block, out of 66 sample households about 90.91 per cent use organic/bio fertilisers in their millets cultivation and 9.09 per cent of them use chemical fertilisers. Similarly, in Nuagada block, out of the total 69 sample households about 94.20 per cent use organic fertilisers in their millets cultivation while 5.80 per cent are use chemical fertiliser.

3.8 Reason for Not Cultivating Millets

Out of the total sample households only 15.62 per cent i.e. (25 households) of them are not cultivating millets in Gajapati district (Table 3.7). It presents the distribution of households by the reasons they do not cultivate millets. It shows that out of the non-millets cultivating households, majority (51.11 per cent) of them not cultivating millets because it is not profitable. Another 17.78 per cent are cultivating due to shortage of land for millets cultivation, while about 17.77 per cent of them do not cultivating it for other reasons such as lack awareness and some other reasons.

Table 3.7: Distribution of Sample HHs by their Reason for Not Cultivating Millets											
Blocks	**No. of HHs**	**Not Profitable**		**Shortage of Land**		**Non-Availability of Seed**		**Lack of Irrigation**		**Others**	
		No	%	No	%	No	%	No	%	No	%
Kashinagar	14	7	50	3	21.42	1	7.14	2	14.28	1	7.14
Nuagada	11	3	27.27	6	54.54	0	0.00	0	0.00	2	18.18
Total	25	10	40	9	36	1	4	2	8	3	12

Source: Baseline Survey, 2022

3.9 Conclusion

Being tribal populated district millets has been an integral part of the food habit of people in Gajapati. In Kashinagar and Nuagada blocks of Gajapati district shows that millets, particularly Mandia/Ragi and Suan, remain an important component of the local cropping system, cultivated by 84.38 per cent of households and occupying 38.68 per cent of operational area. While yields vary between blocks, most farmers are satisfied with seed quality and rely largely on organic inputs, reflecting the low-input and eco-friendly nature of millet cultivation. However, a section of households refrains from cultivating millets due to low profitability, limited land, and lack of awareness, highlighting the challenges that restrict its wider adoption. Strengthening profitability, improving access to quality inputs, and promoting scientific practices alongside better market linkages can make millet farming more sustainable and rewarding for farmers in the district.

Chapter IV

CONSUMPTION OF MILLETS

4.1 Introduction

The Baseline Survey, 2022 was conducted to assess the trend and patterns of millets consumption in the target villages before implementing the programme in the two selected blocks of Gajapati district, namely Kashinagar, and Nuagada. The main objective of this chapter is to analyse how the households that participated in the survey vary in their millets intake in different seasons, and meals, as well as different times of the day across age groups among the population of the sample households. The chapter also explores the diversity of millet varieties; it varies recipes and dishes that are consumed by these households. By doing so, the chapter aims to provide a comprehensive picture of the millets consumption patterns and preferences among the sample households in Gajapati district, which is one of the focus areas of SAA.

4.2 Consumption of Millets by HHs

Table 4.1 presents the block-wise millet consumption among surveyed households. Nuagada block recorded the highest total millet consumption (2835.18 kg) with 57 households, followed by Kashinagar with (2513.47 kg) consumed by 58 households. The average consumption per household was higher in Nuagada (49.74 kg) compared to Kashinagar (43.34 kg). Overall, across 115 households, a total of 5348.65 kg of millets was consumed, with an average household consumption of 46.51 kg, reflecting the continued importance of millets in local diets within the study area.

Table 4.1 Consumption of millets by households

Blocks	Total millets consumed (in kg)	Average consumption	No of HHS Consuming millets
Kashinagar	2513.47	43.34	58
Nuagada	2835.18	49.74	57
Total	5348.65	46.51	115

Source: Baseline Survey, 2022

4. 3 Millets Consumption during Different Meals of the Day

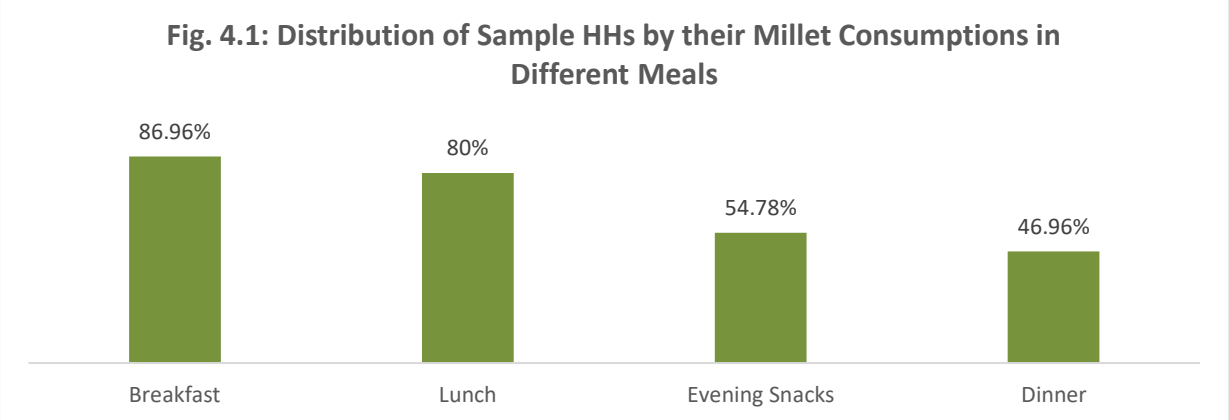


Fig.4.1 shows the distribution of millets consumption during different meals of the day across seasons among the sample households of two selected blocks of Gajapati District. It shows that out of the total 115HHs, 86.96 per cent consume millets during breakfast, 80 per cent consume millets during lunch across the blocks, about 54.78 per cent during evening snacks, while 46.96 per cent of them consume during dinner.

Table 4.2: Millets Consuming Households by their Different Meals in a Day

Blocks	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
Breakfast	52	89.66	48	84.21	100	86.96
Lunch	48	82.76	44	77.19	92	80
Evening Snacks	33	56.90	30	52.63	63	54.78
Dinner	29	50	25	43.86	54	46.96

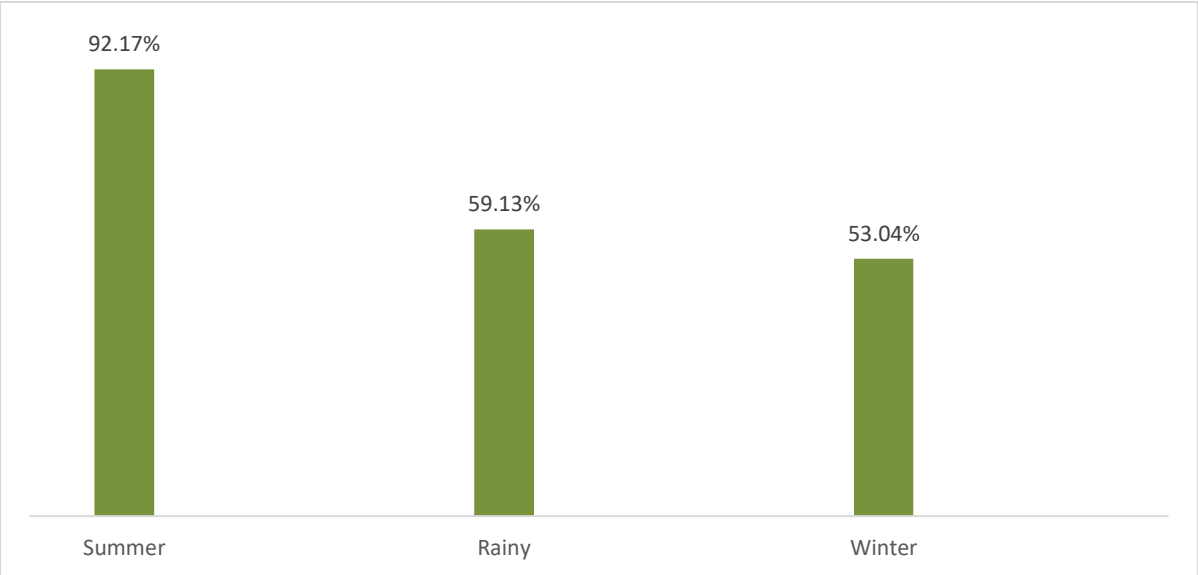
Source: Baseline Survey, 2022

The block-wise pattern of millet consumption among the sample households during different meals of the day is represented in the Table 4.2 in Kashinagar, 89.66 per cent of households consumed millets during breakfast and 82.76 per cent during lunch, while in Nuagada, the corresponding figures were 84.21 per cent and 77.19 per cent, respectively. A smaller proportion of households consumed millets as evening snacks (56.90 per cent in Kashinagar and 52.63 per cent in Nuagada) and during dinner (50 per cent in Kashinagar and 43.86 per cent in Nuagada).

4.4 Millets Consumption across Seasons

The fig 4.2 presented the seasonal variation in the rate of millets consumption among the sample household across the two selected blocks of Gajapati. It reveals that the rate of millets consumption is highest in summer, i.e., 92.17 per cent, in rainy season it is 59.13 per cent while 53.04 per cent consume it during the winter season.

Fig. 0.2: Sample households by their Millets Consumption across Seasons



The block wise distribution of households by millets consumption status during different seasons is presented in Table 4.3. In Kashinagar block, out of total 115 HHs majority of them, i.e., 86.25 per cent consume millets during summer season, about 27.19 per cent consume it during summer season and32.50 per cent consume it in rainy season. Similarly, in Nuagada block, out of the total301 people a significant majority of them, i.e., 76.56 per cent consume millets in summer; about 32.13 per cent consume it in rainy seasons while 28.75 per cent of them consume it in winter season.

Table 4.3 Millets Consumption across Seasons

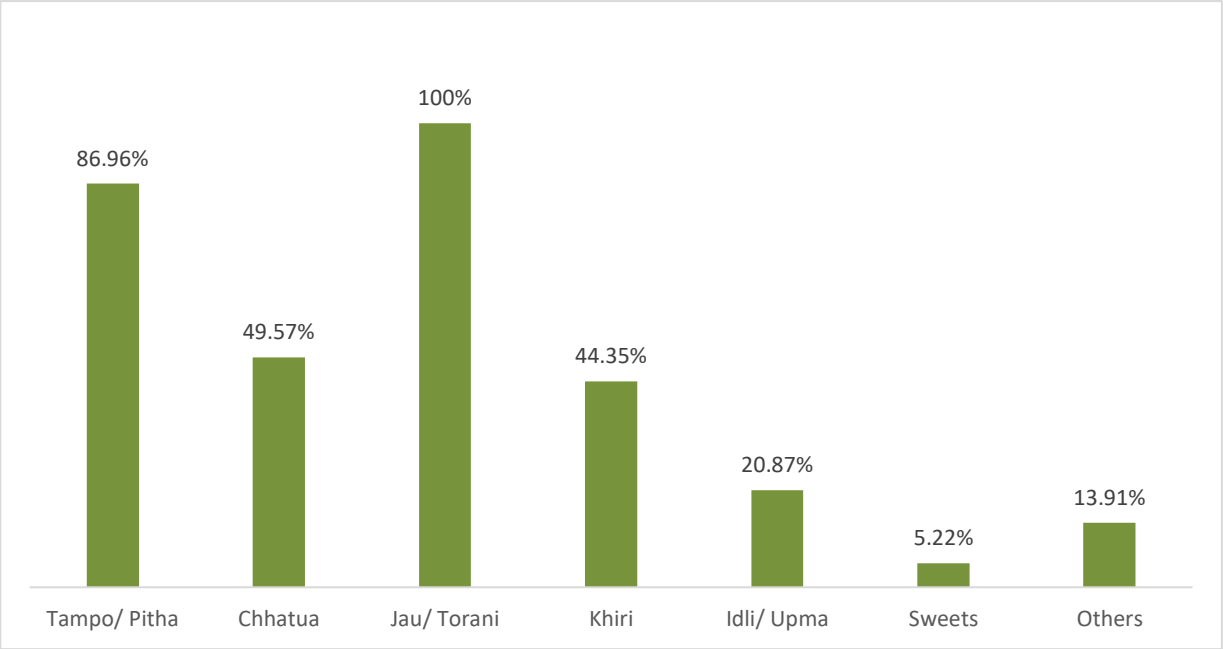
Blocks	Total HHs	Summer		Rainy		Winter	
		No	%	No	%	No	%
Kashinagar	58	54	93.10	35	60.34	32	55.17
Nuagada	57	52	91.23	33	57.89	29	50.88
Total	115	106	92.17	68	59.13	61	53.04

Source: Baseline Survey 2022

4.5 Millet Recipes Consumed

Table 4.4 shows distribution of households who consumes various types of millets in different recipes. Survey data shows that *Mandia/Ragi* is most commonly consumed millets among the sample households while *Suan* and *Kangu* also consumed by them. Fig. 4.3 shows that *Jau/Torani* and *Tampo/ Pitha* is the most common *Mandia/Ragi* recipe as 100 per cent and 86.96 per cent consume it. *Jau/Torani* prepared from *Suan* and *Kangu* are consumed by 6.88 per cent and 3.75 per cent of the sample households.

Fig.4.3: Distribution of Sample households by the Millet Recipes they Consume



In the Kashinagar block, among the various millets used by the sample households, *Mandia/Ragi* and *Suan* were the most commonly consumed. The most popular *Mandia/Ragi* recipe was Tampo/Pitha, consumed by 89.66 percent of the sample households. This was followed by Chhatua (70.69%), Jau/Torani (100%), Khiri (51.72%), and Idli/Upma (15.52%). A smaller proportion of households prepared Sweets (3.45%) and Others (15.52%) using Mandia/Ragi. Similarly, *Suan* (locally known as Ganga) was also consumed by several households, among which Idli/Upma (11.25%) was the most popular recipe, followed by Tampo/Pitha (6.25%), Jau/Torani (6.25%), and Khiri (5%).

In the Nuagada block, the most commonly consumed *Mandia/Ragi* recipes were Jau/Torani (100%) and Tampo/Pitha (84.21%). About 28.07 percent of the households consumed Chhatua, 36.84 percent consumed Khiri, and 26.32 percent prepared Idli/Upma from Mandia/Ragi. A small share of households prepared Sweets (7.02%) and Others (12.28%). Among the *Suan* recipes, Chhatua (8.75%) was the most popular, followed by Tampo/Pitha (7.50%), Jau/Torani (7.50%), Khiri (5%), and Idli/Upma (1.25%).

Furthermore, in Nuagada, *Kangu* was also consumed by a few sample households. Among the Kangu-based recipes, Tampo/Pitha (3.75%) and Jau/Torani (3.75%) were equally popular, while Chhatua (2.50%) was consumed by a smaller proportion of households.

Table 4.4: Distribution of HHs by consumption of millets in different recipes

Recipes	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
Mandia						
Tampo/ Pitha	52	89.66	48	84.21	100	86.96
Chhatua	41	70.69	16	28.07	57	49.57
Jau/ Torani	58	100	57	100	115	100
Khiri	30	51.72	21	36.84	51	44.35
Idli/ Upma	9	15.52	15	26.32	24	20.87
Sweets	2	3.45	4	7.02	6	5.22
Others	9	15.52	7	12.28	16	13.91
Suan						
Tampo/Pitha	5	6.25	6	7.50	11	6.88
Chhatua	0	0.00	7	8.75	7	4.38
Jau/Torani	5	6.25	6	7.50	11	6.88
Khiri	4	5.00	4	5.00	8	5.00
Idli/Upma	9	11.25	1	1.25	10	6.25
Kangu						
Tampo/Pitha	0	0	3	3.75	3	3.75

Chhatua	0	0	2	2.50	2	2.50
Jau/Torani	0	0	3	3.75	3	3.75

Source: Baseline Survey 2022
Note: Percentage of each recipe is calculated from total nos. of sample households in the block

4.6 Conclusion

As per the Baseline Survey, 2022 millet consumption is highest during the summer season. Most of the respondents consume millets during breakfast time. *Jau/Torani and Tampo/Pitha* is the most commonly consumed Mandia/Ragi recipe across the two blocks of Gajapati district, followed by Chhatua, Khiri and Idli/ Upma. Some of the sample households consume Suan in the form of Jau/Torani and Tampo/Pitha, while in Nuagada block some households consume Kangu.

Chapter V

PROCESSING AND MARKETING OF MILLETS

5.1 Introduction

Baseline Survey, 2022 aimed at recording the processing and marketing practised by the sample households in Gajapati districts across the two selected blocks namely, Kashinagar and Nuagada. This chapter explores about the practices used by the sample households for the processing of their millets, both by traditional methods as well as using machines such as de-hulling, milling, roasting, and popping. It also examines the availability and accessibility of processing units in the locality, and the factors that influence the choice of processing methods. Furthermore, this chapter analyses the different modes of selling their millets, such as selling in Mandi, cooperatives, middlemen, and others. It also evaluates the accessibility to different selling point and their distance including mode of transportation of their millets during the marketing process. The main objective of this chapter is to assess the status of processing and marketing of millets in the sample area and to identify the challenges and opportunities for improving the value chain of millets.

5.2 Processing of Millets

Millet grains have a thin husk and small stone particles that need to be removed before marketing as well as consumption. This is a difficult and tedious task that requires a lot of manual labour. According to information collected through focused group discussions (FGD), usually women are responsible for processing of 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.

Fig. 5.1 presents the methods of millets processing used by the sample households across the two selected blocks of Gajapati district. It reveals that majority them, i.e., 91.74 per cent of households process their millets traditionally, while 6.61 per cent of households process their millets by using machines and only 1.65 percent of households process it using both traditional methods as well as machines.

Fig.5.1: Distribution of HHs by their Millet Processing Methods

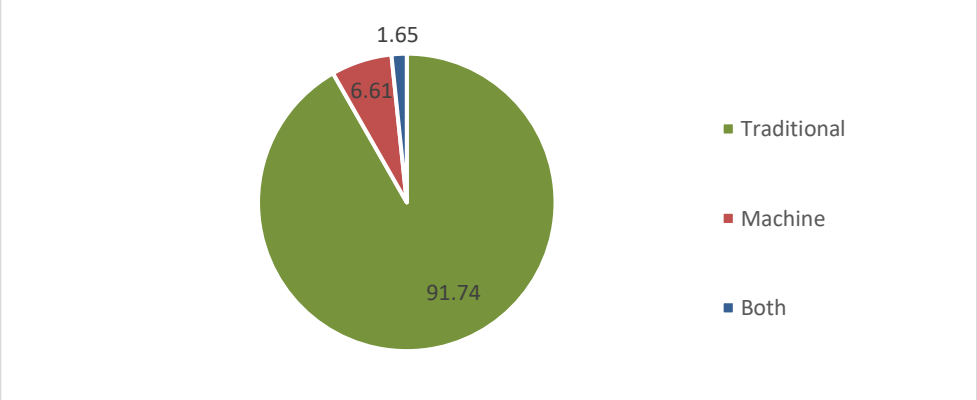


Table 5.1 present the distribution of sample households by their millet processing methods. It shows that, in Kashinagar block about 93.55 per cent of sample households process their millets traditionally, 6.45 per cent process using machines, while no one process their millets using both traditional method as well as machines. Similarly, in Nuagada block, 89.83 per cent of the sample households process their millets traditionally, 6.78 per cent of them process it using machines, while 3.39 per cent process their millets using both traditional methods as well as machines.

Table 5.1 Distribution of HHs by their Method of Processing Millets

Methods	Kashinagar		Nuagada		Total	
	No	%	No	%	No	%
Traditional	58	93.55	53	89.83	111	91.74
Machine	4	6.45	4	6.78	8	6.61
Both	0	0.00	2	3.39	2	1.65
Total	62	100	59	100	121	100

Source: Baseline Survey, 2022

5.3 Marketing

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, most of the households only grew millets mainly for their own use but also sold the surplus to different agencies, such as middle men, local traders, or money lenders. They do not have an organized marketing system to sell their millets. Some of them sold it millets in the market and a few sold them to their neighbours.

Table 5.2 presents the distribution of households by the marketing of their millets. It shows that, out of the total 135 sample households across two selected blocks of Gajapati district, 91.85 per cent sell their millets to different selling points. About 8.15 per cent of the households do not sell their millets.

Table 5.2: Distribution of households by marketing of millets

Blocks	Marketing of Millets					
	Sold Millets		Did not Sell Millets		Total	
	No	%	No	%	No	%
Kashinagar	63	94.03	4	5.97	67	100
Nuagada	61	89.71	7	10.29	68	100
Total	124	91.85	11	8.15	135	100

Source: Baseline Survey, 2022

As shown in Table 5.3 majority of the millets selling households the sell their millets to middleman, i.e., 59.68 per cent, while 20.97 per cent of them sell it to moneylenders/*Sahukar*, 16.13 per cent of them sell it to local businessman while rest 3.23 per cent sell it in Mandi.

5.4 Selling Points of Millets

The block wise distribution of selling of millets by selling points shows that in Kashinagar block out of the total millets selling households, about 60.32 per cent sell their millets to middlemen, 23.82 per cent sell it to moneylender/*Sahukar w*hile 14.28 per cent sell it to local businessmen, and rest of the 1.54 per cent of them sell it in the Mandi. A similar pattern is observed in Nuagada block, where about 59.02 per cent of them sell their millets to middleman, 18.03 per cent each sell it to the Moneylender/ *Sahukar* as well as local businessman, and rest 4.92 per cent households sell it in Mandi.

Table 5.3: Distribution of households by selling points of millets

Blocks	Mandi		Middlemen		Moneylender/ Sahukar		Local Businessmen		Total	
	No	%	No	%	No	%	No	%	No	%
Kashinagar	1	1.54	38	60.32	15	23.82	9	14.28	63	100
Nuagada	3	4.92	36	59.02	11	18.03	11	18.03	61	100
Total	4	3.23	74	59.68	26	20.97	20	16.13	124	100

Source: Baseline Survey, 2022

5.5 Distress sale

The Table 5.4 shows how many households among the millets selling households had to sell their millets at a lower price than the official market price or MSP, in other word face distress sale. Out 124 households who sell their millets to the different agencies 35.48 per cent of them experienced distress sale while selling their millets, and rest of the 64.52 per cent of them reported that they did not face distress sale.

In Kashinagar block, 38.09 per cent reported that they experienced distress sale and in Nuagada block, it is 32.78 per cent, overall, across the two blocks it is 35.48 per cent of the sample households had experienced distress sale. All of the sample households in this regard reported that they had experienced distress sale during the period to meet their long pending borrowings and other financial needs.

Table 5.4: Distribution of Sample HHs by their Incidents of Distress Sale

Blocks	Yes	
	N	%
Kashinagar	24	38.09
Nuagada	20	32.78

Source: Baseline Survey 2022

Note: Percentage calculated from total millets selling households

5.6 Conclusion

The processing and marketing of millets among the sample households across the two selected blocks of Gajapati district under Baseline Survey 2022, Phase VI reveals that majority of households process their millets traditionally. Processing of millets through pulveriser is most commonly used processing units which is situated outsides of the sample villages. Further, majority of households sell their surplus produce of millets to middleman. While more than 35 per cent millets selling households reported incidence of distress sale of their millets.

Annexure-1: Mapping of Baseline Survey, 2022 of the Gajapati District

Indicators	Unit	Baseline Value		
		Kashinagar	Nuagada	Total
% of Sample households Cultivating Millets	%	82.5	86.25	84.87
Types of Millets Cultivated (2021)				
a) Mandia	%	100	100	100
Avg. Area under Millets/HH (Acre)	Acre	1.02	1.11	1.07
% of millets area to total cultivated area	%	39.62	37.93	38.68
Average Production Millets HHs	Qnt.	3.65	5.04	4.36
Package of Practices				
a) Broadcasting	%	40.91	40.58	40.74
b) LS	%	15.15	18.84	17.04
c) LT	%	28.79	14.49	21.48
d) SMI	%	15.15	26.09	20.74
e) No Response	%	0	0	0
Yield Rate (Qnt. /Acre)	Qnt.	3.56	4.51	4.06
Percentage of Households Consuming Millets				
a) Breakfast	%	89.66	84.21	86.96
b) Lunch	%	82.76	77.19	80
c) Evening Snacks	%	56.90	52.63	54.78
d) Dinner	%	50	43.86	46.96
Popular Millets Recipes (% of HHs)				
a) Tampo/Pitha	%	89.66	84.21	86.96
b) Chhatua	%	70.69	28.07	49.57
c) Jau/Torani	%	100	100	100
d) Khiri	%	51.72	36.84	44.35
e) Idli/Upma	%	15.52	26.32	20.87
f) Sweets	%	3.45	7.02	5.22
g) Others	%	15.52	12.28	13.91
Percentage of HH Processing Millets				
a) Traditionally	%	93.55	89.83	91.74
b) Machines	%	6.45	6.78	6.61
c) Both	%	0.00	3.39	1.65
Percentage of HH Selling Millets				
a) Mandi	%	1.54	4.92	3.23
b) Middleman	%	60.32	59.02	59.68
c) Sahukar/Moneylenders	%	23.82	18.03	20.97
d) Local Businessman	%	14.28	18.03	16.13
Distress Sale (% of Households)	%	38.09	32.78	35.48

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.)
1	Agriculture	Land Preparation	Transplantation/ Sowing	Weeding	Fertilizers/ Pesticides	Harvesting	Others	
	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, pleases 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

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)

31. Do you sell millets? 1. Yes 2 . No
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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About NCDS, Bhubaneswar

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