BASELINE SURVEY: PHASE VII

RAYAGADA 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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Citation: "Baseline Survey: Rayagada District 2023, Phase VII", Special Programme for Promotion of Millets in Odisha (Shree Anna Abhiyan, SAA), Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar

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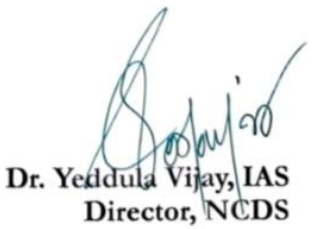
FOREWORD

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

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

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



Dr. Yeddula Vijay, IAS
Director, NCDS

ACKNOWLEDGEMENT

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

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

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

Rayagada district is one of the 17 districts where the 'Special Programme for the Promotion of Millets in Odisha or hereafter, Shree Anna Abhiyan, SAA' Phase VII has begun in the Kharif 2022 in one block, namely, Ramanaguda. Under Phase VII of implementing the Shree Anna Abhiyan (SAA) in Rayagada district, 80 households were selected through a multi-stage sampling method to conduct the Baseline Survey 2023, Phase VII, in one block in Rayagada district. The Baseline Survey 2023, Phase VII, conducted in Rayagada district, collected data from 80 sample households. The survey revealed that a significant majority of the social group belongs to the Scheduled Tribe, which is about 97.5 per cent, then Other Backward Classes occupy 2.5 per cent in the study area. The total population of the sample households is 352, of which 53.41 per cent are male and 46.59 per cent are female. Out of the total sample households, about 87.50 per cent are nuclear families and 12.50 per cent of them are joint families.

As observed in the Baseline Survey, the total population of the sample households is 352, of which 46.88 per cent are married, 45.17 per cent are unmarried, about 5.68 per cent is widows and 1.70 widowers. Out of the total populations, Farmers constitute 28.13 per cent, followed by Housewives 12.5 per cent. Then, Students make up 30.11 per cent of the population, while Daily Wage Labor makes up 11.36 per cent. 2.56 per cent are working in the Government sector, compared to 2.56 per cent who operate their Business and 1.14 per cent who work in the Private Sector. 2.27 per cent of people are Pension Holders. 2.84 per cent of people are Unemployed. Out of the total 80 sample households, 98.75 per cent of sample households possess ration card. The Majority of the population has Secondary Education (38.64 per cent), followed by illiterate (26.7 per cent), where Primary Education is about 10.51 per cent, Higher Secondary Education constitutes 8.81 per cent, Graduation and Post-Graduate education constitutes 6.25 per cent and 1.14 per cent respectively and others like Management and Diploma holders make 7.95 per cent. It is also found that out of the total surveyed HHs, 18.75 per cent had Kutcha houses, 40 per cent had Semi-Pucca houses and 41.25 per cent had Pucca houses.

As revealed in the Baseline Survey, out of 80 total HHs, 19 houses (23.75 per cent) are Landless, 55.00 per cent have Marginal land, 13.75 per cent have Small Land, 3.75 per cent have Medium land, and 2.5 per cent have Large Category of land. It is also found that out of the total 352 sample populations, 26.25 per cent sample are having annual income is between Rs.40000 /-, 50.00 per cent are having Rs.40001/- to Rs.80000/-, 17.50 per cent are having Rs.80001/- to Rs.120000/- is, 26.25 per cent are having Rs.120001/- to Rs.160000/-, 2.50 per cent are having Rs.160000/- to Rs.200000/-and only 1.25 per cent are having income above Rs.200000/-.

It is also found that out of the total sample HHs, 54 (67.5 per cent) have cultivated Paddy, 36 (45.00 per cent) cultivated Millets, 14 (17.5 per cent) cultivated Vegetables and 7 HHs (8.75 per cent) cultivated Other Crops. It is also revealed that out of the total sample households, 22 (48.90 per cent) of the HHs reported that millets cultivation is not profitable, and 51.13 per cent of HHs reported the low market price, non-availability of seeds and lack of an irrigation are the major reasons for their not going for millets cultivation. As observed in the Baseline Survey, out of the total sample HHs millets is

cultivated by as many as 36 HHs, covering a total area of 38.55 acres and with a yield of 1.12 Qtls. / per

acre. As revealed the sample HHs have a total millets production 43.10 quintals. All the selected sample population, 92.05 per cent found to be consuming millets with an annual HH consumption of 28.48 Kg. it is also found that the rate of millets consumption is higher among the Old Age population (100 per cent), followed by 98.31 per cent by the Middle Age group, Adolescent consumes 94.87 per cent and the rate of millets consumption among the Children is 88.00 per cent, Pre-School (72.73 per cent) and 53.33 per cent among the Infants. It is also found that as many as 65.00 per cent (the highest) of the sample population are consuming millets in their Lunch, followed by Breakfast (61.25 per cent), while 20 per cent of sample population are consuming millets in their Dinner and another 12.50 per cent in their Evening Snacks.

As it is reveled in the Baseline Survey, out of the total millet consuming sample population as many as 63.75 per cent consume millets during the summer season to check their body being hydrated, they also used as it as a Summer Drink and during the winter season 30 per cent of the sample population consume millets and another 27.5 per cent consume in the rainy season. As found, out of the 80 sample households 45 per cent are consuming millets from their own production, whereas 47.50 per cent consumed millets by purchasing from the local market and another 3.75 per cent borrowed or exchanged millets and only 3.75 per cent procure it from other sources. As found in the Baseline Survey, 13.89 per cent use Traditional Method, 86.11 per cent use Machinery, and another 7.5 per cent use both the methods for processing millets. As observed, as many as five (13.88 per cent) of the sample HHs are selling millets, out of them only one sample HH sold his produce below the market price.

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ABBREVIATIONS

AAO	: Assistant Agriculture Officer
AL	: Agricultural Labor
ATMA	: Agricultural Technology Management Agency
AWC	: Anganwadi Centre
CBOs	: Community Based Organization
CCD	: Centre for Community Development
CRPs	: Cluster Resource Persons
CSOs	: Civil Society Organization
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
Ha	: Hectares
HHs	: Households
ICDS	: Integrated Child Development Scheme
LS	: Line Sowing
LT	: Line Transplantation
MDM	: Mid-Day Meal
MFP	: Minor Forest Produce
MGNREGA	: Mahatma Gandhi National Rural Employment Guarantee Act
MSP	: Minimum Support Price
NCDS	: Nabakrushna Choudhury Centre for Development Studies
OBC	: Other Backward Classes
PDS	: Public Distribution System
SAA	: Shree Anna Abhiyan
SC	: Scheduled Caste
SMI	: System of Millet Intensification
SP	: Sale Price
ST	: Scheduled Tribe
WASSAN	: Watershed Support Service and Activities Network

Chapter I

INTRODUCTION

1.1 Background

For many years, especially in the central tribal areas, millets have been a staple diet for millions of people throughout India. They grow well in a variety of soil types and climatic environments, are drought-resistant, and are very nutritious. Additionally, low in Glycemic Index and gluten-free, millets are a great option for persons with a variety of medical issues. Because of millets' many health advantages and their potential to help the nation's food security issues, there has recently been a revival in interest in their production. As part of its initiatives to boost farmers' earnings, lessen reliance on crops that require a lot of water, like rice, and support sustainable agriculture, the Indian government has been encouraging the development of millets. Understanding the significance of millets cultivation, along with the opportunities and problems that come with it, is crucial in this context.

The Poaceae family, also referred to as the grass family, includes millets, a type of cereal grain. Small, rounded whole grains known as millets are grown in Nigeria, India, and other Asian and African nations. It is regarded as an ancient grain that may be fed to animals and birds as well as used for human consumption. Millets are superior to other crops in several ways, including drought and insect tolerance. It may also endure harsh conditions and less fertile soil. These advantages result from its genetic make-up and physical make-up, such as its hardness and compact size. Additionally, this crop is separated into two categories: major millets and minor millets, with major millets being the most well-known or often grown types, including Sorghum, Pearl Millet, and Finger Millet. Minor millets include Kodo, Barnyard, Little, Proso, Brown Top, and Foxtail. Millet is a starchy grain, like most cereals, which means it is high in carbohydrates. In addition, it contains many vitamins and minerals. As a result, it might provide numerous health advantages.

Announcement by the UN that 2023 will be the International Year of Millets attracts more public attention, including that of farmers. Millets have been grown for millennia in the Indian state of Odisha, particularly by the tribal population, and have traditionally been a staple of the traditional cuisine. The promotion of high-yielding crops like rice and wheat, along with the rising adoption of modern eating habits, has led to a drop in millets' appeal during the past couple of decades. This alteration has resulted in a decrease in soil fertility and an increase in climate change susceptibility. The Special Programme for Promotion of Millets in Odisha (also known as Shree Anna Abhiyan, SAA) was initiated by the Government of Odisha in 2017–18 and emphasizes millets' production, consumption, processing, and marketing. To address these issues, the Government of Odisha has launched several initiatives to encourage the cultivation of millets. The program seeks to enhance millets' production, consumption, processing, and marketing in tribal regions, where they have long been a mainstay diet. Understanding the significance of millet growing in Odisha and its potential to advance sustainable agriculture and enhance food security is vital in this setting. Mandia makes up a sizable portion of the other millets found in Odisha, accounting for around 95 per cent of them.

Following its introduction in 2017–18 by the Government of Odisha, the Shree Anna Abhiyan Programme attempted to restore these nutrient-rich millets in the agricultural landscape, which were disappearing. It sought to advance millet production, consumption, processing, and marketing, with a focus on tribal

regions in particular. The program's distinctive structure emphasized growing traditional millets that were long-cherished diets of forest dwellers, including Ragi, Gurji, Kosra (small millet), Kodo, Kangu (foxtail millet), and Jowar. This program revitalized the growth of millet crops throughout the state by giving them the much-needed attention they needed. This baseline study intends to offer details on the program's dimensions in the district of Rayagada since OMM phase VII implementation started in 2023 in 17 districts, including this district. The Rayagada district profile is shown below.

1.2 District Profile

Rayagada district is a district in southern Odisha. Its population consists mainly of tribes, primarily the Khonds and the Souras. In addition to Odia, Kui and Soura are spoken by the district's indigenous population. It was founded by Maharajah Biswanatha Deba Gajapati of the Surjya bansha dynasty of Jeypore. As per the 2011 Census, the district has an area of 7073 Sq. Kilometers with 9.7 lakhs of population (Table 1.1). The district accounts for 4.54 percent of the State's territory and shares 2.31 percent of the State's total population. The density of population is 137 persons per Square Kilometer as against 270 persons per square kilometer of the State. In the district, there are 2667 villages, including 200 uninhabited, covering 11 Blocks, 11 tehsils, and 2 subdivisions. It has 139514 (14.4 per cent) Scheduled Caste (SC) and 541905 (56.0 per cent) Scheduled Tribe (ST) populations. Rayagada District consists of 11 Blocks (Fig. 1.1).

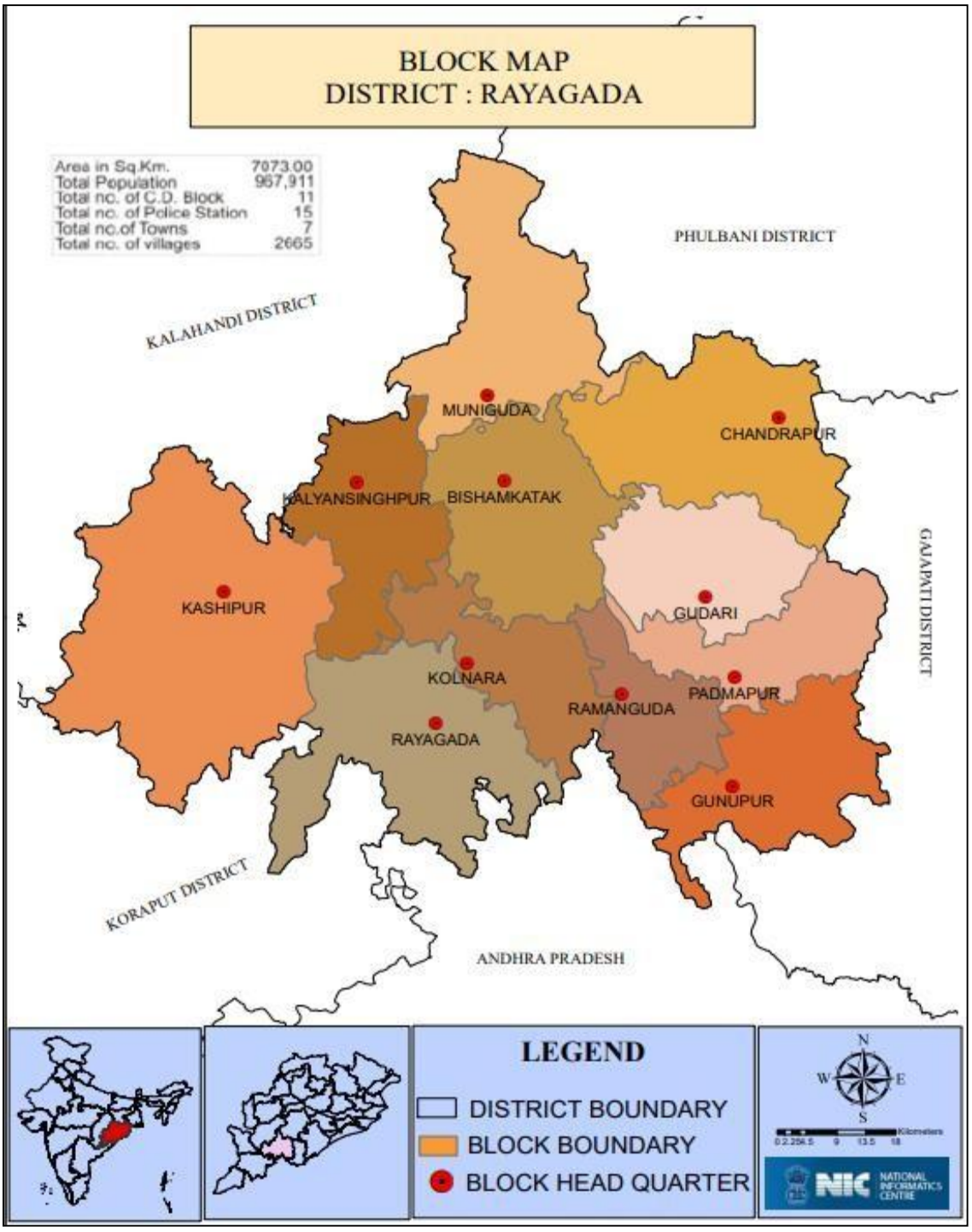
Rayagada is located in the southern part of the State, lies between 19 Degree 0' to 19 Degree 58' North Latitude and is bounded by the Kandhamal District in the North, Andhra Pradesh in the South, and Rayagada District in the West. The climatic condition is generally hot with high humidity during May and June, and cold during November and December. The monsoon generally breaks during the month of June. Annual rainfall of the district was 1165.8mm in 2011, which is lower than the normal rainfall i.e.1285.9mm. As per the District at a Glance 2016 for Rayagada in the financial year 2014- 15, the total production of major crops was 2953400 Quintals and Ragi production was 75955 Quintals.

1.3 Objectives

The objective of the Baseline Survey 2023 was to collect primary data from the selected sample Programme households at the village level on their current practices on cultivation, including production, consumption, processing and marketing of millets. It was thought that the collected information would work as background information for planning and implementing the Programme as a whole. The major objectives of the Baseline Survey are:

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

Fig 1.1 Map of Rayagada District



Source:http://gisodisha.nic.in/Block/RAYAGADA.pdf

Table1.1: Socio-Economic and Demographic Features of Rayagada District	
Indicators	***Value***
Census 2011	
Population (in Lakh)	9.7
Male (in Lakh)	4.7
Female (in Lakh)	5.0
Scheduled Caste (in Lakh)	14.4
Scheduled Tribe (in Lakh)	56.0
Others (in Lakh)	29.6
HHs (in Lakh)	2.0
Average HH size	4.8
Sex Ratio	1952
Workers	
Total Worker (in Lakh)	4.7
Main Worker (in Lakh)	2.3
Marginal Worker (in Lakh)	2.4
Non-Worker (in Lakh)	5.1
Work Participation Rate (WPR, %)	48.3
Cultivator as % of Total worker	49.8
Agricultural Laborers as % of Total Worker	4.8
Literacy Rate (%)	49.8
Total Geographical Area (sq.km)	7073
Land Use Pattern (Area in '000 Ha) (2014-15)*	
Forest	101
Land put to Non-agricultural use	30
Barren and Non-Cultivable Land	204
Permanent Pasture and Other Agricultural Land	10
Net Area Sown	144
Cultivable Waste Land	9
Old Fallow	23
Current Fallows	42
Miscellaneous Trees and Groves	9
Agriculture, 2014-15*	
Fertilizer Consumption (kg/ha)	54.8
Irrigation, Kharif ('000ha)	71.6
Irrigation, Rabi ('000ha)	28.1
Other Information	
Proportion of village electrified 9 as of March 2014)	28.8
Credit Deposit Ratio (as on December 2015)	38.2
No. of Anganwadi Centers, 2014-15	19125
No. of Job Cards Issued (cumulative, March 2015)	18448
HH provided employment through MGNREGS, cumulative 2014-15	75826

*Source: District Handbook, Rayagada, 2011 and *District at a Glance 2016*

1.4 Methodology

1.4.1 Universe and Sample Design

The Government of Odisha's Department of Agriculture and Farmers Empowerment introduced the 'Special Programme for Promotion of Millets in Odisha' in 17 additional districts, including Rayagada. Therefore, to undertake Baseline Survey 2023, Phase VII in the Rayagada district, one block, i.e., Ramanguda block, was selected from the district as part of the Programme. The survey included potential millet sample households as the responding households from the block were selected in consultation with local farmers, NGOs, CSOs, Facilitating Agencies (FAs) and the Chief District Agriculture Office (DAO).

The block was selected purposively as Programme is going to be implemented. Out of these, two Gram Panchayats were randomly selected from the block in the second stage sampling; further, two villages were selected from each selected Gram Panchayat in the third stage sampling. In the fourth stage of sampling, 20 households were randomly selected from each selected village, resulting in 80 households surveyed from the block. The Baseline Survey 2023 under Phase VII included a total of 80 households selected from the program households, i.e. 118.

Table 1.2: Sample Households in Rayagada District

Block	Programme Households (N)	Surveyed Households (N)	HHs Covered under the Study (%)
Ramanaguda	118	80	67.79

Source: Facilitating Agency and Field Survey, 2023

1.4.2 Data Collection, Compilation and Analysis

The Baseline Survey aimed to gather information on various socio-economic indicators, including household demographics, income, means of livelihood, education, and information on millets' production, consumption, processing, and marketing. To produce a thorough report, the survey results were analyzed using the proper statistical tools and procedures. A pre-tested interview schedule (Annexure 1) was used to gather primary data from respondents in the affected districts. Secondary data was also gathered from a variety of published and unpublished sources, including the 2011 Census, on geographic information, population, agriculture, education, irrigation, forest, and institutions. The triangulation and validation of the conclusions of the quantitative data obtained through the survey were further made possible thanks to the qualitative data that contributed to a more comprehensive understanding of the local context.

1.5 Limitations of the Study

Rayagada District's four blocks are the sole subject of the current baseline survey. However, some household heads and female respondents were discovered to be absent during the data collection procedure due to the start of the harvesting season, along with both in-migration and out-migration. Despite these difficulties, it is critical to recognize the present study's limitations.

The survey was restricted to a random sample of 80 families due to logistical issues and other challenges, such as the lack of responders. Second, there is always the chance of a recall error, particularly when it comes to issues like marketing and actual consumption rates, among other things. Last but not least, several surveyed households, especially those of non-farmer households, consumed millets without growing them. Past stock and the acquisition of millets through trade and barter made this possible. Unfortunately, the survey did not record these specifics.

While interpreting the survey's results, it is imperative to take these limitations into account. Future research can fill in these gaps and increase the precision of the data-gathering procedure. Despite these drawbacks, the current survey offers insightful information about the socioeconomic circumstances of the chosen families and acts as a benchmark for measuring future growth.

1.6 Chapters

The baseline survey report has been split up into six Chapters, the first of which is the one we are working through right now. It provides the District Profile, Objectives, Methodology, and Limitations. The Socio-economic Profile of the surveyed households is discussed in Chapter II. Analysis and statistics on Millets Production and Productivity are provided in Chapter III. The Pattern of Millets Consumption is covered in Chapter IV. The Processing and Marketing of Millets are explained in Chapter V.

Chapter II

SOCIO-ECONOMIC PROFILE

2.1 introduction

This Chapter tries to highlight the socio-economic circumstances and demographics of the respondent HHs polled during the Baseline Survey Phase VII in 2023. As a result, it emphasizes social aspects, which concentrate on social group and religion, gender, and educational status, and economic condition, which includes poverty status (proportion below poverty line and proportion above), economic activities (which are not mutually exclusive because an HH can have multiple economic activities), distribution by house structure, source of income, and their debt position.

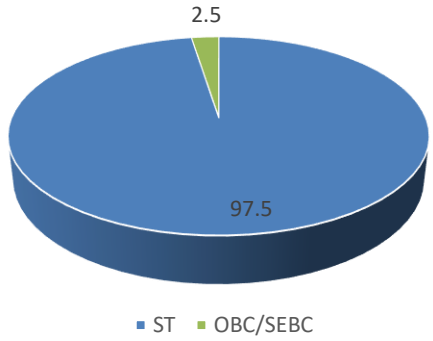
2.2 Social and Demographic Profile

Under the Baseline Survey 2023, Phase VII in Rayagada district, 04 villages were selected for the primary survey (for sampling and methodology see section 1.4.1) in the one block of Rayagada district. This section discusses the social composition of the surveyed households, their economic activities, poverty status, housing structures, etc.

2.3 Social Composition

In the surveyed block, a total of 80 sample households as shown in Fig. 2.1, indicate that a significant majority of the social groups belong to the Scheduled Tribe, with 72 HHs (97.5 per cent). In contrast, the OBC/SEBC category comprises only 2 HHs (2.5 per cent) of the households.

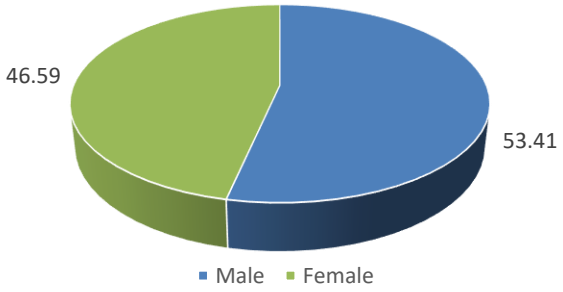
Fig 2.1: Sample HHs by Social group (in %)



2.4 Sex Composition

The total population surveyed among the sample households is 352. The male population comprises a higher proportion than the female population, with males accounting for 188 (53.41 per cent) and females for 164 (46.59 per cent) of the totals. These details are illustrated in Figure 2.2.

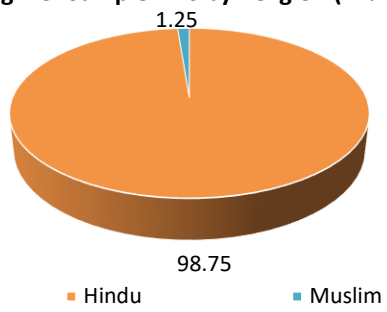
Fig 2.2: Sample HHs by their Sex Composition (in %)



2.5 Sample HHs by their Religion

Religion is a social institution because it includes beliefs and practices that serve the needs of society. Religion is the entire collection of beliefs, values, and practices that a group holds true and sacred. From the 80 surveyed HHs, 79 HHs (98.75 per cent) are Hindu and 1 HH (1.25 per cent) is Muslim (Fig. 2.3)

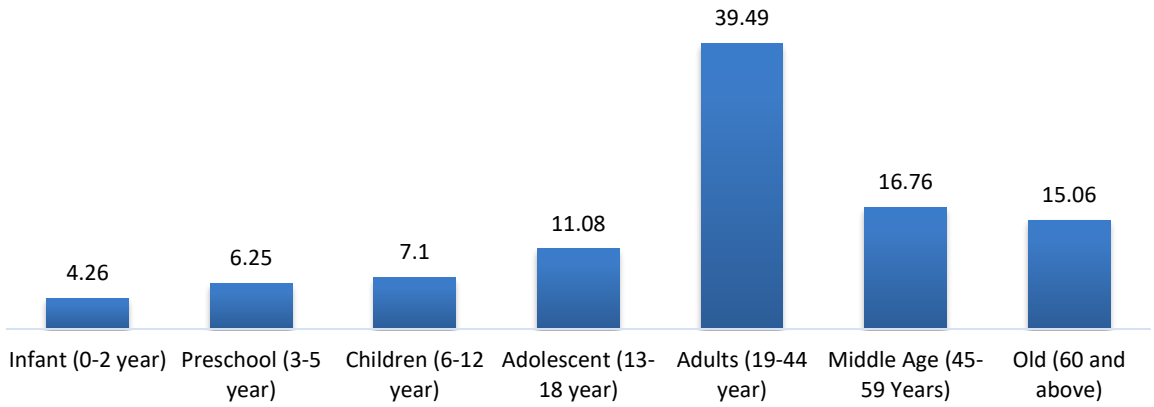
Fig 2.3: Sample HHs by Religion (in %)



2.6 Sample Population by their Age Group

Age composition is another name for age distribution. It describes the age distribution of a population or how different age groups relate to one another. According to the total number of Sample HHs surveyed population, Adults from 19 to 44 years accounts the highest 139 (39.49 per cent) of the sample population, 59 Middle age (16.76 per cent), 39 Adolescents (11.08 per cent), likewise 53 sample population (15.06 per cent) come under the Old Age Group i.e. 60 years and above, 25 (7.10 per cent) comes under the Children Age group i.e. 6 to 12 years, 22 (6.25 per cent) Pre-school Age Group i.e. from 3 to 5 years, and 15 (4.26 per cent) comes up as Infants (Fig 2.4).

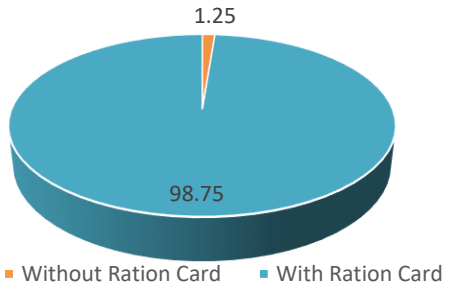
Fig 2.4: Sample population by their Age Group (in %)



2.7 Possession of Ration Card

Fig. 2.5 shows the distribution of sample households by their possession of a ration card, which shows that out of 80 sample households in Ramanaguda block, a Maximum of 79 HHs (98.75 per cent) of sample households possess ration cards; the remaining 1 sample HH (1.25 percent) does not have a ration card.

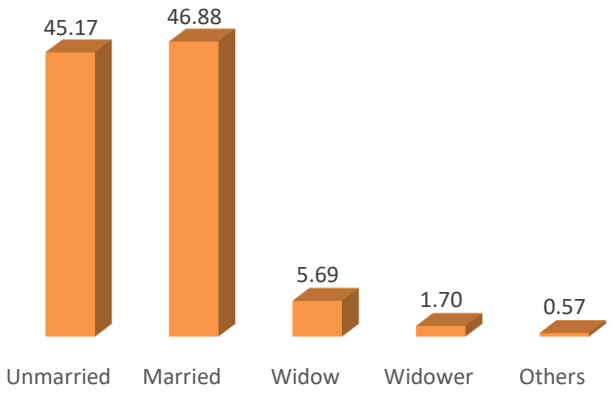
Fig 2.5: Sample HHs by Possession of Ratio card (in %)



2.8 Marital Status

Marital status includes single, married, widow, divorced, and separated. People who have never been legally married are considered never-married folks. According to the statistics gathered from the field, there are around 165 people (46.88 per cent) married and 159 sample people (45.17 per cent) unmarried. The remainder is made up of 20 widow (5.68 per cent) and 6 widowers (1.70 per cent), while the remaining 2 people (0.57 per cent) are separated (Fig. 2.6).

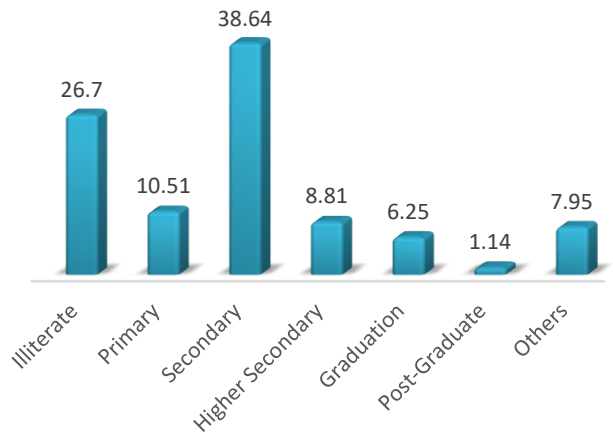
Fig 2.6: Sample Population by their Marital satatus (in %)



2.9 Education

Fig. 2.7 indicates that the majority of the population has Secondary education, i.e., 136 people (38.64 per cent), whereas primary education is about 37 people (10.51 per cent). Illiteracy is also seen 94 people (26.7 per cent). Then the higher secondary education, graduation and postgraduate education are seen about 31 people (8.81 per cent), 22 people (6.25 per cent) and 4 (1.14 per cent) respectively. Like this, 28 people (7.95 per cent) are others and children are included.

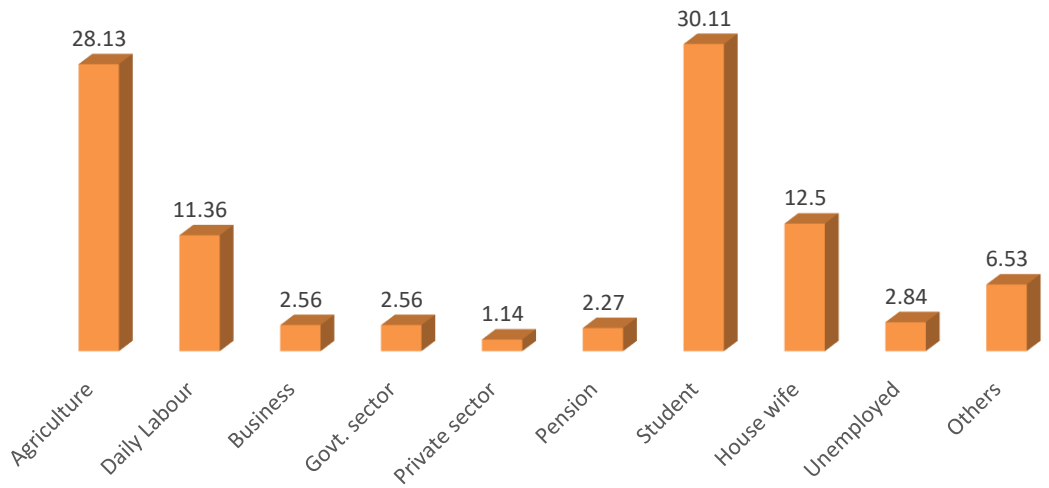
Fig 2.7: Education among the Sample Population (in %)



2.10 Occupation

The economic activity of the surveyed HHs in the two blocks is shown in Fig 2.8 Out of a total population of 352 people, it demonstrates. 99 Farmers (28.13 per cent) of the population, followed by 44 housewives (12.50 per cent). Then 106 Students make up (30.11 per cent) of the population, while 40 daily labor makes up (11.36 per cent), 9 operate their businesses (2.56 per cent) and 4 work in the private sector (1.14 per cent) 8 of the people are pension holders (2.27 per cent). Only 10 people are unemployed (2.84 per cent) and the remaining 23, where children (others) are included, occupy (6.53 per cent).

Fig 2.8: Sample population by their Occupation (in %)

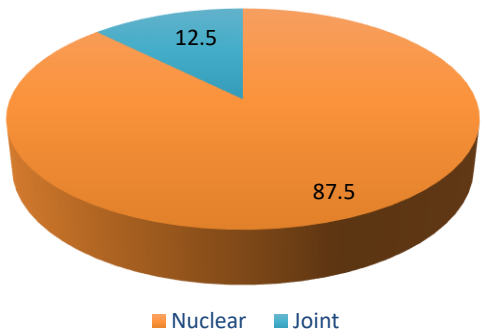


Note: In the figure activities are not mutually exclusive.

2.11 Type of Family

The distribution of sample households by family type, which is shown in different types like Nuclear, Joint, and extended family. But in these 80 surveyed HHs, it has been found that 70 HHs (87.5 per cent) belong to the Nuclear Family and 10 HHs (12.5 per cent) are from a Joint family (Fig 2.9).

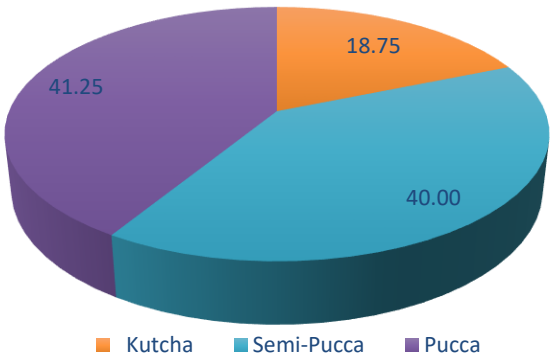
Fig 2.9: Sample HHs by their type of Family (in %)



2.12 Type of House

The sample HHs are classified by their house type as Kutcha, Semi-Pucca and Pucca. House structure, in a sense, reflects the economic condition of HHs. It is found that out of the total surveyed HHs, 15 HHs (18.75 per cent) have Kutcha houses, 32 HHs (40 per cent) have Semi-Pucca houses, and 33 HHs (41.25 per cent) have Pucca houses (Fig 2.10).

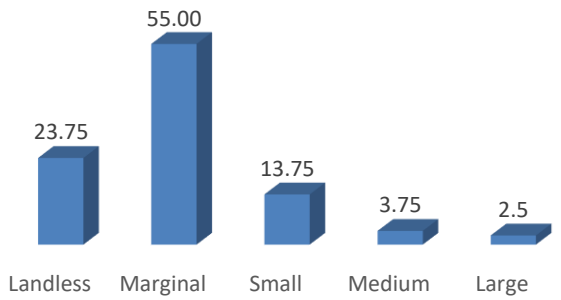
Fig 2.10: Type of house among the Sample HHs (in %)



2.13 Land Ownership

The landowner is a person or entity that owns land. Fig 2.11 shows that 19 HHs (23.75 per cent) are landless, 44 HHs (55 per cent) have marginal land, 11 HHs (13.75 per cent) have small land, 3 HHs (3.75 per cent) have medium land, and 2 HHs (2.5 per cent) have large land.

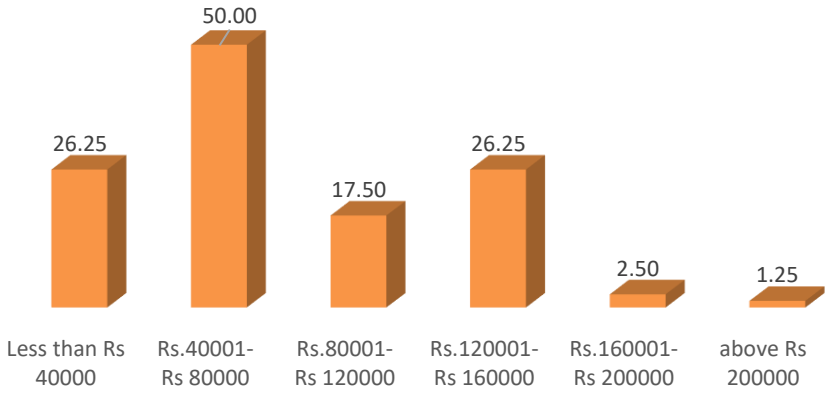
Fig 2.11: Land ownership among the Sample HHs (in %)



2.14 Annual Income

Fig 2.12 presents that out of the total sample HHs 40 sample HHs (50 per cent) have yearly incomes between Rs.40000/- and Rs.80000/-, 14 sample HHs (17.50 per cent) have annual income between Rs.80001/- - Rs.120000/-, while 21 HHs (26.25 per cent) have annual income less than Rs.40000/- and Rs.120001/- to Rs.160000/- and 2 HHs (2.50 per cent) have annual income between Rs.160001/- to Rs.2 lakhs and 1 HH (1.25 per cent) has annual income above Rs.2 lakhs. under the same roof, including spouses and their dependents.

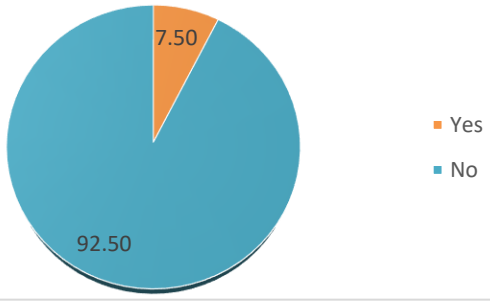
Fig 2.12: Annual income of the Sample HHs (in %)



2.15 Agricultural Credit

Agricultural loan refers to the financial assistance offered by banks, micro-finance institutions and government-funded agencies for farmers, self-help groups, tenant farmers and joint cultivators to execute and support the agricultural activities. Fig 2.13 shows that 74 HHs (92.50 per cent) have not taken any agricultural loan and 6 HHs (7.50 per cent) have taken an agricultural loan from various sources like banks and self-help groups.

Fig 2.13: Agricultural Credit among the Sample HHs (in %)



2.16 Conclusion

We have examined many aspects of the social and economic circumstances of Ramanaguda block in the Rayagada District. As found in the Survey, most of the sample HHs are STs (97.50 per cent) and 98.75 per cent of the sample HHs belong to Hindu religion. The majority of the population have Secondary Education. Around 50 per cent of the total HHs have their yearly income between Rs.40001/- to Rs.80000/-. As observed in the Baseline Survey, out of the total 23.75 per cent of the sample HHs are Landless, 55 per cent are have having Marginal Land, 13.75 per cent have Little Land, 3.00 per cent have Medium Land, and 2.5 per cent have Huge Land

Chapter III

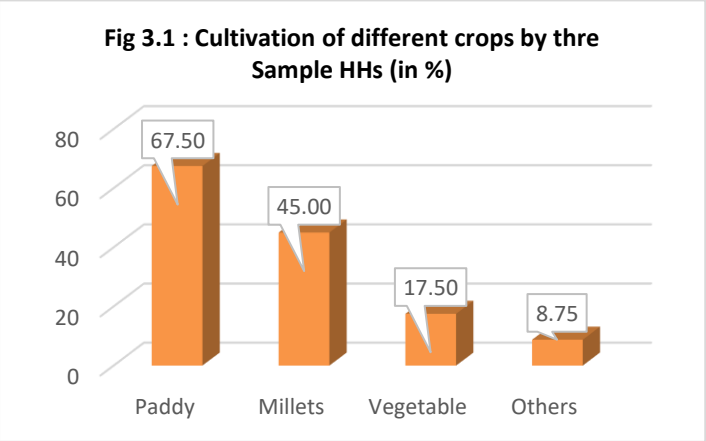
PRODUCTION OF MILLETS

3.1 Introduction

The Baseline Survey 2023 was conducted to assess the situation of millet production in the target villages before the implementation of the Programme interventions. 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, Use of Fertilizer Use of Pesticides, mixed sample or mono sample system, Storage of Seed, weeding for the millets cultivation, weeding for the millets cultivation and so on in Ramanaguda block of Rayagada district. Thus. 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 Cultivation of different Crops

Fig. 3.1 presents the operational land under different crops. Out of 80 surveyed HHs, 54 HHs (67.50 per cent) were cultivating paddy, 36 households (45.00 per cent) cultivated millets and 14 HHs (17.50 per cent) cultivated vegetables. The 7 HHs (8.75 per cent) are engaged in other agricultural practices in the block. Thus, the paddy is the highest operational holding in Ramanaguda block of Rayagada District.



3.3 Operational Land under different Crops

Table 3.1 presents the information on operational land holdings under different crops. Out of the total operational land 145.52 acres is among surveyed Households, 95.15 Acres (65.39 per cent) of land under paddy, 38.55 Acres (26.49 per cent) of land under millets, 14.07 Acres (9.67 per cent) of land under vegetables and 7.55 Acres (5.19 per cent) of land under others crops. Thus, paddy crops' average land holdings are the highest among any other crops in the block

Table 3.1: Sample HHs by their operational land holding

Blocks	Land occupies	Paddy	Millets	Vegetables	Others
Ramanaguda	145.52	95.15	38.55	14.07	7.55

Source: Baseline Survey 2023

3.4 Annual Expenditure under different Crops

Table 3.2 presents the average annual expenditure varies under different crop prices. Among the sample surveyed households, the expenditure on paddy cultivation averaged Rs.16181.48, followed by Vegetables, which averaged Rs.15885.71. Other expenditures averaged Rs.13185.71, and millets cultivation averaged Rs.7283.33.

Table 3.2: Average Annual Expenditure under different Crops (in Rs.)

Block	Paddy		Millets		Vegetables		Others	
	Total Expenditure	Average	Total Expenditure	Average	Total Expenditure	Average	Total Expenditure	Average
Ramanaguda	873800.00	16181.48	262200.00	7283.33	222400.00	15885.71	92300.00	13185.71

Source: Baseline Survey 2023

3.5 Cultivation of Millets by the Sample HHs

As found in the Baseline Survey, out of the total 80 Sample households there are 36 HHs (45.00 per cent) are cultivating millets in the study area.

3.6 Area, Production and Yield of Millets

The surveyed HHs in Rayagada district indicated the production of millets only in the form of Mandia. As presented in table 3.3 the total production of millets is 84.89 quintals. Millets has been cultivated by 36 HHs, in 38.55 acres of land in the Kharif season. The yield was 1.12 quintals per acre in Ramanaguda block. During the Rabi and summer seasons, not a single household cultivated Millets.

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

Block	Season	Particulars	Value
Ramanaguda	Kharif	No of HHs Cultivating	36
		Area (in Acre)	38.55
		Production (in Qtls.)	43.1
		Yield (Qtls. /Acre)	1.12

Source: Baseline Survey 2023

3.7 Types of Land being used by the Sample HHs for Millets Cultivation

Table 3.4 presents the land type used for cultivating millet among the sample households - out of the total 36 millet cultivating HHs in the Kharif season, 6 sample Households (16.66 per cent) use Upper land, 18 Households (50.00 per cent) are using the slop land, 5 households (13.89 per cent) used Middle land and 7 households (19.44 per cent) used the upper land for the millet cultivation.

Table 3.4: Type of Land being used by the Sample HHs

Block	Total No. of HHs Cultivating Millets	Upper Land		Slope Land		Middle Land		Low Land	
		No. of HHs	Area (in acres)	No. of HHs	Area (in acres)	No. of HHs	Area (in acres)	No. of HHs	Area (in acres)
Ramanaguda	36	6	9	18	19.75	5	5.5	7	4.3
In %	100	16.66	23.34	50.00	51.23	13.89	14.26	19.44	11.15

Source: Baseline Survey 2023

Thus, among the entire selected sample, 17 Households have the highest cultivation of millets using slop land in the Khnarif season. 36 Households use 38.55 acres of land for millet cultivation.

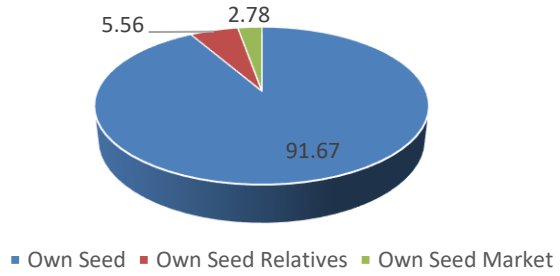
3.8 Type of Seeds being used by the Sample HHs

According to the Baseline Survey 2023, Millet farming sample households in Rayagada district believe, seed quality is a crucial component of cultivation and crop production. Good quality seeds are preserved for the next crop to reap the benefits. Out of the 80 surveyed households found 36 HHs cultivate millets and all prefer local seeds that they have used during their millets production in the Kharif season.

3.9 Source of the Seeds being Used by the Sample HHs

Fig. 3.2 presents that out of 36 total millet cultivating household's (91.67 per cent) use seeds from their Own seeds, 2 HHs (5.56 per cent) sources of seeds from relatives and only 1 HHs (2.78 per cent) source of seed is from the market. Nobody mobilized it from the other source, like the Ngo, Govt. / Community seed center Ramanaguda block.

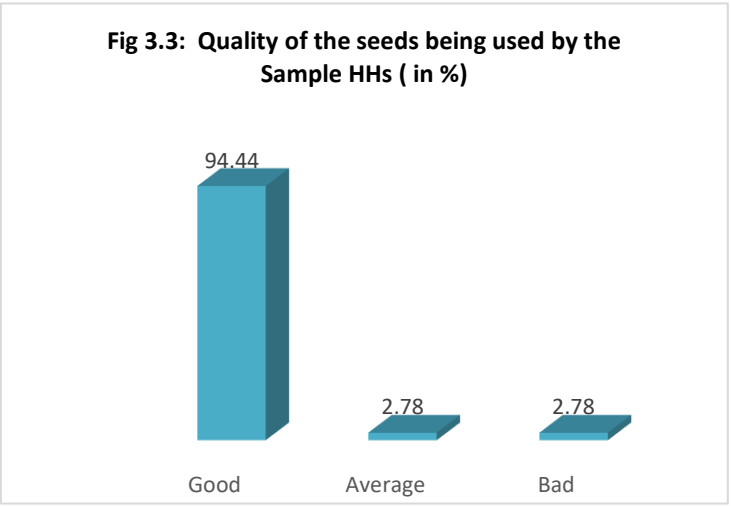
Fig 3.2: Source of seeds being used by the Sample HHs (in %)



3.10 Quality of the Seeds

According to the respondents of the sample households, the quality of seed is an important component of the whole cultivation and crop production process. According to them, most of the time, the quality of the seeds used determines the volume of production and the same high-quality seeds are again properly preserved for the next crop to reap the benefits. Here, based on the response among selected sample millets households (Fig. 3.3), 34 HHs (94.44 per cent) say that seed quality is good, 1 HH (2.78 per cent) perceive that the quality of seeds as Average and another 1 HH (2.78 per cent) opines as bad quality of seeds.

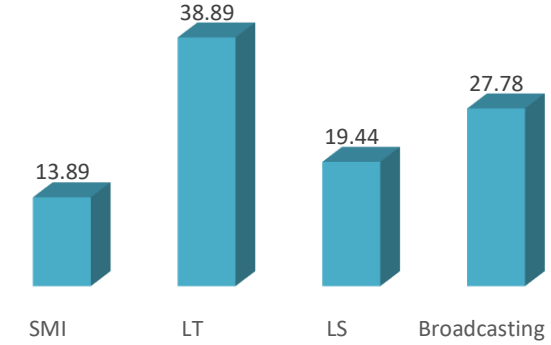
Fig 3.3: Quality of the seeds being used by the Sample HHs (in %)



3.11 Method of Millets Cultivation

Fig. 3.4 indicates the package of practices, analysis that the majority of millet farmers practice the Line Transplantation. 14 Sample HHs (38.89 per cent) practice the Line Transplantation (LT) method. 10 Sample HHs (27.78 per cent) practice the Broadcasting method of cultivation. 7 Sample HHs (19.44 per cent) also

Fig 3.4: Method of Millets cultivation by the Sample HHs (in %)

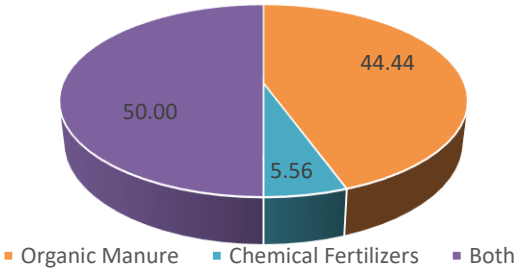


practice the Line Showing (LS) method of cultivation and 5 sample HHs (13.89 per cent) follow the System of Millet Intensification (SMI) method of cultivation. Thus, the highest sample HHs of millet farmers practice the Line Transplantation (LT) method of cultivation only in the Kharif season in Ramanaguda Block of Rayagada District.

3.12 Use of fertilizer by the Sample HHs

The use of fertilizer among farmers seems to be important for cultivation. It is also found that both organic manure and chemical fertilizer are being used. The Baseline Survey (Fig 3.5) reveals that 18 sample HHs (50 per cent) of the millets cultivating HHs used both organic and chemical fertilizer. Whereas 16 sample HHs (44.44 per cent) are using organic (manure and 2 sample HHs (5.56 per cent) are using chemical fertilizer for millets production in the study area.

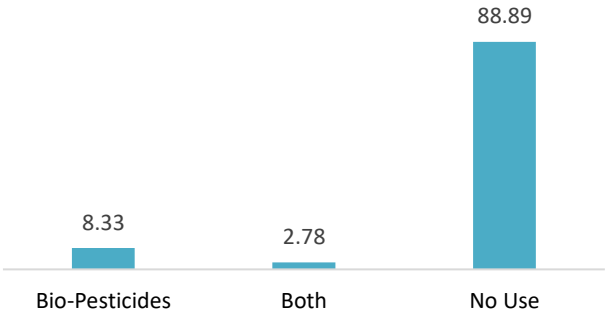
Fig 3.5: Use of fertilizer by the Sample HHs (in %)



3.13 Use of Pesticides by the Sample HHs

The use of pesticides among sample household farmers seems to be important for the protection of cultivation. Fig 3.6 shows on use of pesticides by millets sample HHs, which indicates 32 sample HHs (88.89 per cent) do not use any pesticides. Further, 3 sample HHs (8.33 per cent) millets cultivating farmers use Bio-pesticides, and only 1 sample HH (2.78 per cent) used both the pesticides during millet cultivation. The highest number of farmers do not use any types of pesticides for millets cultivation in the study area.

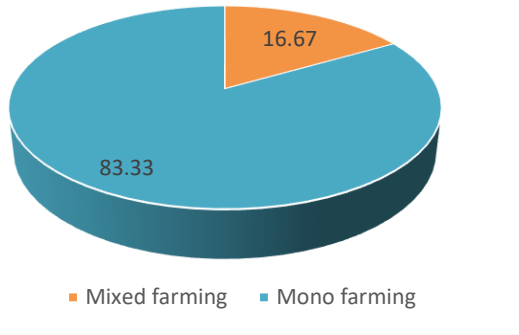
Fig 3.6: Use of Pesticides by the Sample HHs (In %)



3.14 Type of Millets Farming by the Sample HHs

Fig 3.7 shows that the sample Household farmers adopt two types of Millets farming i.e., mono, and mixed. 30 sample HHs (83.33 percent) farm under the mono farming system and only 6 sample HHs (16.6 per cent) follow the mix farming system in the Ramanaguda block.

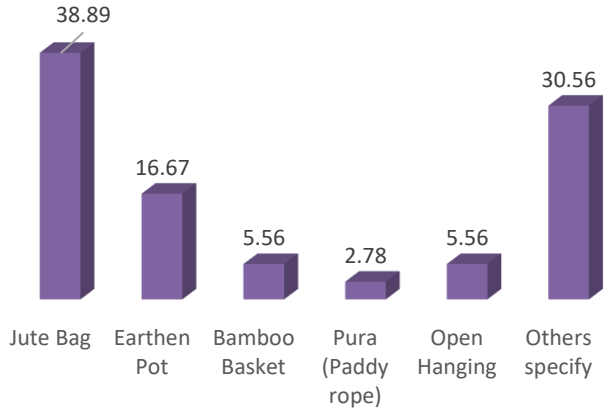
Fig 3.7: Type of Millets farming by the Sample HHs (in %)



3.15 Storage of Seeds

Fig 3.8 indicates that majority of the sample households 14 HHs (38.89 per cent) prefer the Jute bag for the storage of their seeds, followed by 6 HHs (16.67 per cent) are using the Earthen pots; 2 HHs (5.56 per cent) are storing their seeds in the Bamboo Basket. Similarly, 2 HHs (5.56 per cent) are keeping their seeds as Open and Hanging and only 1 HH (2.78 per cent) keep as Pura (paddy rope).

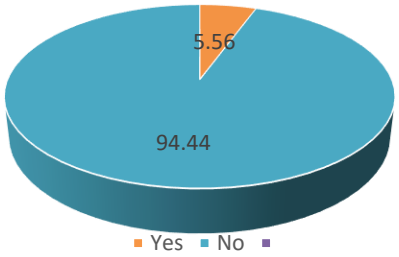
Fig 3.8: Storage of seeds by the Sample HHs (in %)



3.16 Preservation of the Seeds

Fig 3.9 presents that as many as 34 sample HHs (94.44 per cent) reported that they didn't experience any seeds damage during the year 2022, and only 2 sample HH (5.56 per cent) revealed that during the period their seeds got damaged due to lack of knowledge on preservation of millets seeds.

Fig 3.9: Preservation of the seeds by the Sample HHs (In %)



3.17 Weeding Practices by the Sample HHs

Table 3.5 presents that 24 HHs (66.66 per cent) that they are weeding manually, 3 sample HHs (8.33 per cent) followed both manual as well as Machine and the remaining 1 HH (2.77 per cent) used the Weeding Machine to get rid of the weeds.

Table 3.5: Sample HHs by their wedding practices

Block	Manually		Weeder		Both		Not Weeding	
	N	%	N	%	N	%	N	%
Ramanaguda	24	66.66	1	2.77	3	8.33	11	30.55

Source: Baseline Survey 2023

3.18 Reasons for not Cultivating Millets

Table 3.6 presents that the sample HHs are not cultivating millets due to several reasons, such as – it is not profitable, they have shortage of land, and due to non-availability of seeds. As many as 22 sample HHs (50.00 per cent) reported that millets cultivation is not profitable, 8 sample HHs (18.18 per cent) reported that non-availability of seed is the major reason, another 6 sample HHs (13.63 per cent) reported as lack

of irrigation and the remaining 9 sample HHs (20.45 per cent) reported lack of marketing facility as the reason.

Table 3.6: Reasons for not Cultivating Millets by the Sample HHs

Block	Not Profitable		Shortage of land		Non-availability of seeds		Lack of irrigation		Others (Marketing)	
	N	%	N	%	N	%	N	%	N	%
Ramanaguda	22	50.00	0	0	8	18.18	6	13.63	9	20.45

Source: Baseline Survey 2023

3.19 Conclusion

Among the sample surveyed households, only 36 farmers produced millets during the baseline year 2023. More than one-third of HHs use good quality seeds, nearly two-thirds use average quality seeds and a small number of HHs use low quality seeds. Most HHs cultivated millets through line sowing or line transplanting and some by broadcasting. They do weed manually and most of the sample HH's millet farmers use jute bags for the storage of seed. The basic reason for not cultivating millets is that they don't get profit from that than other crops like paddy and vegetables.

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 analyze how the households that participated in the survey vary in their millet 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 Rayagada district, which is one of the focus areas of SAA.

4.2 Consumption of Millets by the Sample HHs

According to the Baseline Survey, the pattern of millets consumption in Ramanaguda block is that out of the total sample population, 324 (92.05 per cent) are consuming millets in Ramanguda Block of Rayagada district. The average household consumption of millets in the Block is found to be 28.48 Kg.

4.3 Millets Consumption by the Sample HHs across their Age Group

Table 4.1 indicates that the distribution of millet consumption among the population (in different age groups) in the sample households across the Ramanaguda block of Rayagada district is shared. It shows that out of a total 352 persons, 324 people consume millets in the study area. The rates of millet consumption are higher among the old age population (100 per cent) and followed by 130 sample population (98.31 per cent) consume millet by the Middle Age groups. Moreover, 37 sample population (94.87 per cent) Adolescents consume and the rate of millet consumption among the Children is 88.00 per cent, Pre-school is 72.73 per cent and 53.33 per cent among the Infants consume millets.

Table 4.1: Millets Consumption by the Sample Population across their Age Groups

Sl.	Age Groups	Total No. of Sample Population		No. of Sample Population Consuming Millets	
		N	%	N	%
1	Infants	15	4.26	8	53.33
2	Pre-School	22	6.25	16	72.73
3	Children	25	7.10	22	88.00
4	Adolescent	39	11.08	37	94.87
5	Adults	139	39.49	130	93.53
6	Middle Age	59	16.76	58	98.31
7	Old Age	53	15.06	53	100.00
Total		352	100.00	324	92.05

Source: Baseline Survey 2023

4.4 Millets Consumption during Different Meals of the Day

Table 4.2 indicates that 52 sample HHs (65.00 per cent) are consuming millets during their lunch. It is being followed by Breakfast by as many as 49 (61.25 per cent) who consume millets during their breakfast. While 10 (12.50 per cent) of the sample HHs consume millets during their dinner and only 16 sample HHs (20 per cent) consume millets as their Evening Snacks

Table 4.2: Millets Consumption by the Sample HHs during Different Meals of the Day

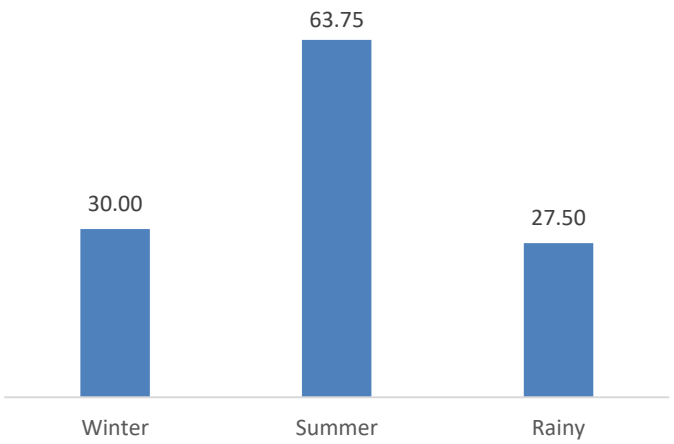
Block	Breakfast		Lunch		Evening Snacks		Dinner	
	N	%	N	%	N	%	N	%
Ramanaguda	49	61.25	52	65.00	10	12.50	16	20

Source: Baseline Survey 2023

4.5 Millets Consumption across Seasons

Fig 4.1 indicates that consumption of millet in the three seasons is more in the summer season in comparison with the rainy and winter seasons. Out of the total millet consuming HHs, 51 sample HHs (63.75 per cent) consume in the summer season mainly to get rid of body hydration. They use millets as a Summer Drink. It is also found that 24 sample HHs (30.00 per cent) consume millets during the winter season. Another 22 HHs (27.50 per cent) consume during the rainy season.

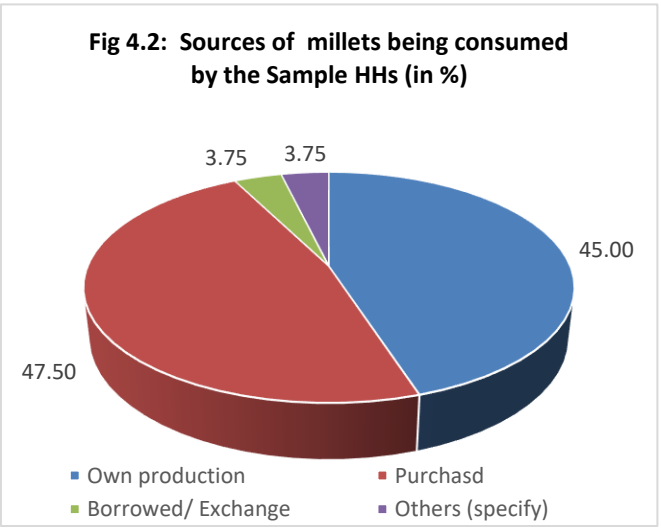
Fig 4.1: Comsumption of Milets across sesons by the Sample HHs (in %)



4.6 Sources of Millets being Consumed by the Sample HHs

Fig 4.2 presents the sources of the millets being consumed by the sample population are from their own production, purchased from the market, borrowed from others, or even exchanged. 36 sample HHs (45.00 per cent) consume millets from their Own Production. Whereas 38 HHs (47.50 per cent) of HHs consume purchased food, and 3 HHs (3.75 per cent) of HHs consume millets through borrowing/exchange of millets, 3 sample HHs (3.75 per cent) through other sources.

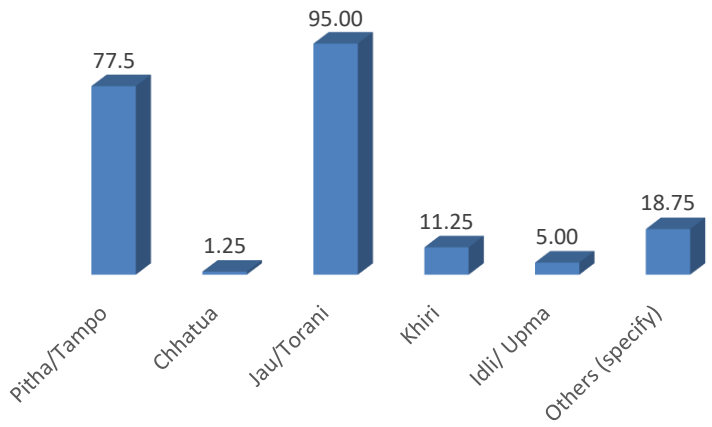
Fig 4.2: Sources of millets being consumed by the Sample HHs (in %)



4.7 Consumption of Millet Recipes by the Sample HHs

From the baseline study (Fig 4.3) it is found that out of the total sample 76 HHs (95.00 per cent) are consuming millet Jau/Torani. It is being followed by Pitha/ Tampo, which is consumed by 62 HHs (77.50 per cent). While another 9 sample HHs (11.25 per cent) consume millets *Khiri*, and 4 sample HHs (5.00 per cent) consume Idli/ Upma being prepared from millets. Millets Chhatua is being consumed by only one HH (1.25 per cent) and another 11 HHs (18.75 per cent) consume Millets Pitha, and Millets Ladu.

Fig 4.3: Consumption of different Millet recepies by the Sample HHs (in %)



4.8 Purchase of Millet-based items from Market

Fig 4.4 indicates that the sample HHs even purchased Millet-based items from the local market for their own consumption. While discussion, it is also revealed that as many as 11 sample HHs (13.75 percent) purchase millet-based items from the market for consumption. It is also found (Table 4.3) that as and when required, the sample households purchase the following millet-based items from the market for their consumption. Out of the total 1 sample HH (9.09 per cent) consume Biscuits and Mixture being prepared from millets. Millet *Idli* and *Upma* are purchased and consumed by one sample HH (9.09 per cent). Chhatua is purchased by as many as 9 sample HHs (81.82 per cent), and 11 sample HHs (13.75 per cent) purchase and eat other items like *Ladu, Roti, Chakuli, and Tampo* from the Market in Ramanguda block of Rayagada district.

Fig. 4.4: Purchase of millet-based items from market by the Sample HHs (in %)

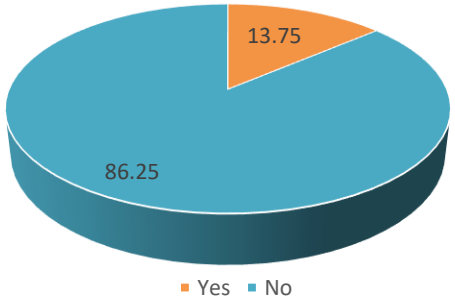


Table 4.3: Purchase of Millet-based items from Market by the Sample HHs

Block	Biscuit/ Mixture		*Idli/ Upma*		*Chhatua*		Others (Specify)	
	No	%	No	%	No	%	No	%
Ramanaguda	1	9.09	1	9.09	9	81.82	11	13.75

Source: Baseline Survey 2023

4.9 Conclusion

It is revealed that in the Baseline Survey, 2023 a number of millets recipes and value-added items are being consumed by most of the sample population in Ramanaguda block. As found, most of the sample households are purchasing millets from the market for their consumption. Among the sample population, millets-based items are more consumed in the summer season, especially during their breakfast. Mostly old and middle-aged people consume more millet-based items than the young. In addition to that it is also found that Pitha/ Tampo is the most common millet recipe being consumed by the sample population across the block of Rayagada district.

Chapter V

PROCESSING AND MARKETING OF MILLETS

5.1. Introduction

The extent of marketing of millets and millets-based items largely depends on the extent of millets being produced in the locality and the other accessible places. Based on the findings of the Baseline Survey 2023, in Ramanaguda Block of Rayagada District, this Chapter discusses the various methods being adopted by the sample HHs, its processing, availability and the distance being covered by the sample households to reach their respective processing and milling units. In the chapter, the various modes of marketing millets as well as its selling points are discussed.

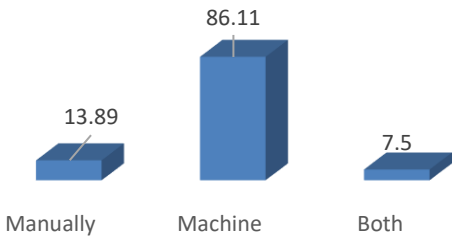
5.2. Processing of Millets

Millet processing is an important aspect of millet production and consumption as a whole. From Baseline Survey it is found that there are two types of processing being practiced by the sample population in the block i.e. processing manually in a traditional manner, and the other one is processing through the Machines. As the survey found millet processing is being done by all 36 millet cultivating sample households are found to be processing their millets.

5.3. Methods of Processing of Millets

Fig 5.1 presents that 5 sample HHs (13.89 per cent) follow traditional method i.e Manually, 31 sample HHs (86.11 per cent) use Machine and another 6 sample HHs (7.5 per cent) are using both the methods to process their millets.

Fig 5.1 Methods of Processing of Millets by the Sample HHs (in %)



5.4. Marketing of Millets by the Sample HHs

Higher production and timely processing of millets help people to keep a portion for their day-to-day consumption and the remaining they go for selling in the open market or even in the Government Mandi with a higher price. It's a fact and also almost the same is revealed by the sample HHs that, out of the total 36 millet producing sample HHs, as many as 5 sample HHs (13.88 per cent) are selling millets.

5.5. Millets Selling Points

Selling point is the core part in marketing and in this context of millets selling point, it is found that out of the total five millets selling HH, four sample HHs (80.00 per cent) are selling their produce in the local market. The remaining one HH sell his produce to the middlemen/ local businessmen.

5.6. Mode of Millets Transportation

Table 5.1 presents that as many as 3 sample HHs (70 per cent) carried their produce by using Cycle, and another 2 HHs (30 per cent) by using vehicle.

Table 5.1: Mode of Millets transportation by the Sample HHs												
Particulars	Head load		Cycle		Bullock Cart		Own Vehicle		Public Transport		Others	
Ramanaguda	N	%	N	%	N	%	N	%	N	%	N	%
	0	0	3	60	0	0	2	33	0	0	0	0

Source: Baseline Survey 2023

5.7 Distress Sale

In Rayagada district, out of the total millets selling households in the Ramanguda block, only 1 HH (20 per cent) committed distress sale i.e. sold his produce in less than the Govt price. The sample HH also revealed that to meet his family's emergency requirement, he sold his produce to the middleman.

5.8 Conclusion

The processing and marketing of millets in the sample households across the Ramanaguda block of Rayagada district under Baseline Survey 2023, Phase VII, reveals that most households process millets by using the machine. Processing of millets through Pulverize is the most used processing units, which are situated in nearby villages. Further, most households sell their surplus produce of millets. Among whom most of them sell their millets to the middleman. Most of the households reported the incidence of distress sales of their millets.

Annexure 1:

Mapping of Baseline Survey Data - Rayagada District

Sl.	Indicators	Unit	Ramanaguda (Total)
1	% of Sample households Cultivating Millets	%	45
2	Types of Millets Cultivated (2022)		
	a) Mandia	%	45
3	Area under Millets/ HH (Acre)	Acre	38.55
4	Production Millets HHs	Qtls.	43.10
5	Package of Practice		
	a) Broadcasting	%	27.78
	b) LS	%	19.44
	c) LT	%	38.89
	d) SMI	%	13.89
6	Yield Rate (Qtls. / Acre)	Qtls.	1.12
7	Percentage of Population Consuming Millets	%	100
	a) Breakfast	%	61.25
	b) Lunch	%	65.00
	c) Evening Snacks	%	12.50
	d) Dinner	%	20.00
8	Popular Millets Recipes (% of HHs)		
	a) Tampo/ Pitha	%	77.50
	b) Jau/ Torani	%	95.00
	c) Khiri	%	11.25
	d) Idli/Upma	%	5.00
	e) Chhatua	%	1.25
	f) Others	%	18.75
9	Percentage of HH Processing Millets		45.00
	a) Manually	%	13.89
	b) Machines	%	86.11
	c) Both	%	7.5
10	Percentage of HHs Selling Millets/ Ragi		13.88
	a) Middleman/ Local Businessman	%	20.00
	b) Local Market	%	80.00
11	% of Distress Sale (% of Households)	%	20.00

Annexure 2:

Confidential and to Be Used for Research Purpose Only

Household Schedule for

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

Serial No.…… Date……..

1 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)							
2	Households Expenses							
3	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 sample or mono sample 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**

2 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

3 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)

1. 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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