BASELINE SURVEY:

RAYAGADA DISTRICT-2016-17, Phase 1

(Special Programme for Promotion of Millets in Tribal Areas of Odisha or Odisha Millets Mission, OMM)

Nabakrushna Choudhury Centre for Development Studies, Bhubaneswar, Odisha
(an ICSSR Institute in Collaboration with Government of Odisha)

2019

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FOREWORD

The seeds for the "Special Programme for Promotion of Millets in Tribal Areas of Odisha" (or, Odisha Millets Mission, OMM) were sown at a consultation meeting held on 27 January 2016 at Nabakrushna Choudhury Centre for Development Studies (NCDS) under the Chairmanship of the Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS), Government of Odisha, and Chairperson, NCDS, Mr. R. Balakrishnan. The consultation meeting had representatives from different line departments of the Government of Odisha, members of different civil society groups from across the country and from within the state (which, among others, included the Alliance for Sustainable and Holistic Agriculture (ASHA), the Millets Network of India (MINI), the Revitalizing Rainfed Agriculture (RRA) Network of India), that brought in their experiences, and the academia that included among others Dr. T. Prakash, Chairperson, Karnataka Agricultural Price Commission.

As per the decision taken at the consultation meeting, NCDS submitted a proposal to the Government of Odisha on the revival of millets. Lo and behold, there was an announcement in the budget speech of 18 March 2016 conveying that the Government of Odisha intends to revive millets. This led to a series of interactions and a memorandum of understanding (MoU) was signed on 27th February 2017 between the Directorate of Agriculture and Food Production (DAFP) as the state level nodal agency that would monitor and implement the programme, NCDS as the state secretariat that would also anchor the research secretariat, and Watershed Support Services and Activities Network (WASSAN) that would anchor the programme secretariat as part of the state secretariat.

It was in 2017-18 that budget was apportioned and after the selection of facilitating agencies, the programme was implemented first time in *kharif* 2017 in 27 of the 30 blocks that were selected to be part of OMM. To help us better assess OMM, the baseline scenario of 2016-17, that is, prior to intervention in *kharif* 2017 is important.

After obtaining a list of farmer's households (HHs) that were growing millets, as part of the programme in *kharif* 2017, a survey design was firmed up, and a baseline survey was conducted among 7000+ HHs during October/November of 2017. The information collected from these HHs in 27 blocks spreads across seven districts are being put up as baseline reports.

The current baseline report is that of Rayagada and the lead author for this has been Mr. Arakshit Patra, Research Assistant, Dr. Chita Ranjan Das, Senior Research Officer and Dr. Biswabas Patra, Research Officer, NCDS. As Principal Investigator, I compliment them and all the members of the team for taking up this arduous work and in bringing the results into completion.

The preliminary results from the baseline survey and the outcome from *kharif* 2017 has been encouraging. Production, yield and returns from millets have more than doubled in areas under OMM. It is this and a demand from the communities that led the government to increase the scope of OMM from 30 blocks in 2017-18 to 55 blocks (an addition of 25 blocks in the second phase) in 2018-19 and will have 72 blocks (a further addition of another 17 blocks in the third phase) in 2019-20. It is for this that the seven district-specific baseline survey reports and an aggregate state-level report are being referred to as first phase baseline survey reports.

Concurrently, the scope of OMM has also led to convergence with other departments. Some of these being the involvement of women self-help groups (SHGs) in putting up a stall of *Mandia* Café at the Hockey World Cup 2018, the procurement of *ragi* (finger millets) in *kharif* 2018, the plans to pilot millet meals and provide millet *ladoos* in *Aanganwadis* in 2019. There has been interest in OMM from the central as also other state governments. OMM has also raised curiosity among scholars within the country as also abroad. And, so they say, the proof of OMM is in its reverberation.

Srijit Mishra
Director, NCDS

ACKNOWLEDGEMENTS

Preparation of this report required concerted efforts of a number of individuals and institutions. First and foremost, we would like to express our sincere gratitude to farmers, farmers' representatives/associations, senior officers from the state Government, particularly to Mr. R. Balakrishnan, Indian Administrative Service (IAS), former Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS) and former Chairman, Nabakrushna Choudhury Centre for Development Studies (NCDS); Mr. Asit Kumar Tripathy, IAS, DC-cum-ACS, Government of Odisha and Chairman, NCDS; Mr. Manoj Ahuja, IAS, former Principal Secretary, Department of Agriculture and Farmers' Empowerment (DAFE); Dr. Saurabh Garg, IAS, Principal Secretary, DAFE; Mr. Bhaskar Jyoti Sarma, IAS, Special Secretary, DAFE; Mr. Hari Ballav Mishra, IAS, former Director, Directorate of Agriculture and Food Production (DAFP); Dr. M. Muthukumar, IAS, Director, DAFP; Ms. Guha Poonam Tapas Kumar, IAS, former Collector, Mr. Pramod Kumar Behera, OAS (SAG) Collector, Rayagada District, Mr. Laxmikanta Behera, former ADM, Mr. Sudhakar Sabar, present ADM, Mr. Kashinath Khuntia, Joint Director Agriculture (JDA), Millets & Integrated Farming, DAFP; Dr. Ananda Chandra Sasmal, Agronomist, DAFE; Mr. Ansuman Pattnayak, Assistant Agriculture Officer (AAO), Farm, Millets, DAFP; and Mr. Sanjay Kumar Pani, AAO, DAFP.

We also express our sincere thanks and gratitude to district level officers of Rayagada District, particularly to Mr. Rabindranath Khuntia, Deputy Director Agriculture; Mr. Krushna Chandra Singh, District Agriculture Officer; Mr. Bhibudendu Dey, Scheme Officer; Mr. Dushmanta Swain, Assistant Agriculture Officer, Rayagada Block; Mr. Priyanatha Patra, Assistant Agriculture Officer, Gunupur Block; Mr. Sanatana Behera, Assistant Agriculture Officer, Gudari Block.

We express our gratitude to Mrs. Sumati Jani (OFS), Secretary, NCDS; Mr. Srikanta Rath, former Administrative Officer, Mrs. S. M. Pani, Computer Programmer; Mr. D. B. Sahoo, P.A to Director; Mr. P. K. Mishra, Senior. Assistant; Mr. P. K. Mohanty, Junior. Accountant; Mr. N. K. Mishra, Junior Stenographer and Mr. P. K. Mallia, Computer Literate Typist, Mr. Niranjan Mohapatra, Librarian; Mr. S. B. Sahoo, Xerox Operator, for their support, help and cooperation.

Special thanks to the members of the Programme Secretariat, Watershed Support Services and Activities Network (WASSAN), particularly to Mr. Dinesh Balam, Consultant, Programme Secretariat; Mrs. Aashima Choudhury, State Coodinator; Mr. Ramani Ranjan Nayak, Regional Coodinator; Mr. Niranjan Gouda, former Coordinator in Rayagada District and Mr. Raghunath Sahu, present District Coordinator, who have helped in data collection and in addressing other queries.

Last but not the least, credit and special thanks are due to the members of the Facilitating Agencies (FA) working in these four blocks of the district, namely, Jagaran, Accredited Social Health Activist (ASHA) and Orissa Professional Development Service Consultants (OPDSC) who have supported a lot during data collection.

We thank Mr. Sarat Kumar Khandai who has helped in data entry work. We also thank Mr. Manoranjan Mishra, Ms. Rajadarshini Patra and Mr. Lokanath Sahoo, who worked in the Project as Research Assistants. We would like to sincerely thank all farmer households, without their cooperation, collection of data would not have been possible. Our sincere thanks to all of them.

Arakshit Patra
ChitaRanjan Das
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EXECUTIVE SUMMARY

§1 Study Area

Rayagada is one of the seven districts where the "Special Programme for Promotion of Millets in Tribal Areas of Odisha (hereafter, Odisha Millets Mission, OMM)" was started in *kharif* 2017 in three blocks of the district, namely, Gunupur, Rayagada and Gudari.

§2 Socio-Economic Profile

§2.1 From 542 Households (HHs), 507 HHs belongs to ST (93.5%), 8 HHs belong to SC (1.5%), 26 HHs belongs to OC (4.8%) and only one HH (0.2%) belong to general category. These three blocks of Rayagada districts are major tribal dominant area**.** Block-wise data reveals that highest Millet HHs in Gunupur block (41.0%), and remaining 39.1 per cent HHs in Rayagada block and 19.9 per cent HHs in Gudari block.

§2.2 It is evident that 51.3 per cent HHs are engaged in agriculture activities, 24.6 per cent are engaged in minor forest collection. 20.3 per cent HHs are engaged in non-agricultural labour activities and only 1.6 per cent HHs are engaged in other activities.

§2.3 From total surveyed HHs in the district, 10 per cent have *pucca* houses. The percentage of *pucca* houses is highest in Gunupur block. The percentage of *kutcha* houses is also lowest in this block.

§3 Production

§3.1 Broadly, there are three types of millets cultivated in Rayagada district during 2016-17. These are *ragi*, *janha* and *kangu*. The total production of different types of millets by the 453 HHs from total production of 543.1 quintals, the share of *ragi* is 539.1 quintals, *janha* 2.1 quintal and *kangu* 1.2 quintal. From total cultivated area, *ragi* was cultivated in 140.5 hectares of land, *janha* was cultivated in 0.1 hectare of land and *kangu* was in 0.2 hectares of land. .The yield rate of *ragi* was 3.8 qtls/ha, whereas 5.2 qtls/ha and 1.5 qtls/ha yield rate of *janha* and *kangu* respectively. Per HH production of *ragi* was 1.2 qtls/HH and that of the *janha* was 2.1 qtls/HH and *kangu* was 0.4 qtls/HH. It is observed that *janha* and *kangu* cultivation is very small. It is found that only three HHs cultivated two varieties of millets.

§3.2 It is observed from Gudari block that 22 HHs (95.6 %) have cultivated *ragi* and only one HH has cultivated *janha*. Out of total production (22.5 quintals), the production of *ragi* was 20.3 quintals and the production of *jahna* was 2.1 quintals. The total productivity was 3.4 qtls/ha, out of that the productivity of *ragi* was 3.3 qtls/ha and *jahna* was 5.2 qtls/ha. Per HH productivity of *ragi* and *jahna* was 0.9 qtls and 2.1 qtls respectively in Rayagada district.

§3.3 It is evident from Gunupur block that 222 HHs (98.7%) have cultivated *ragi* and only three HHs have cultivated *kangu*. Out of total area (47.8 hectares of land), *ragi* was cultivated in 47 hectares of land and *kangu* was cultivated in 0.8 hectare of land. In case of production, out of total production (153.5 qtls), production of *ragi* was 152.5 quintals and production of *kangu* was 1.2 quintals. In the context of productivity, the total productivity was 3.2 qtls/ha, out of that the productivity of *ragi* was 3.2 qtls/ha and *kangu* was 1.5 qtls/ha. Per HH productivity of *ragi* and *Kangu* was 0.7 qtls and 0.7 qtls respectively in Rayagada district.

§3.4 From the total 208 millets cultivated HHs, all HHs have cultivated *ragi* and no other variety of millets were cultivated by them. In these blocks, HHs cultivated *ragi* in 87.3 hectare of land with 367.2 quintals production, 4.2 qtls/ha and 1.77 qtls/HH.

.**§4 Package of Practices**

§4.1 It is observed that highest 57.7 per cent HHs used average quality seeds for their millet cultivation, 35.7 per cent HHs used good quality seeds and 6.6 per cent HHs have used bad quality seeds in Rayagada district.

§4.2 In *ragi* cultivation, 218 HHs adopted broadcasting method in 88.1 ha of land with production 369.5 quintals and yield rate 4.2 qtl/ha, 203 HHs cultivated through transplant method in 43.3 ha of land with production 139.2 qtls and yield rate 3.2 qtl/ha, 21 HHs cultivated through line showing in 6.3 hectares of land with production 18.1 quintals and yield rate 2.9 qtls/ha and similarly, only one HH has used SMI Method in 0.2 hectare land with 0.6 quintal production and with yield rate 3.0 qtls/ha. Beside those methods, some HHs have used all method for the cultivation millets as 10 HHs cultivated in 2.6 hectares land with 12.5 quintal production and with yield rate 4.7 qtls/ha in Rayagada district.

§4.3 In *jahna* cultivation only one HH cultivated *jahna* and produced 2.1 quintals in 0.4 hectare of land with 5.2 qtls/ha yield rate.

§4.4 In *kangu* cultivation, only three HHs have cultivated *Kangu* and produced 1.2 quintals in 0.8 hectares of land with 1.5 qtls/ha yield.

§4.5 The consumption of millet is more in summer season compared to rainy and winter seasons.

§4.6 It is seen that 44.28 per cent HHs processed millet by using machine and 1.48 per cent HHs processed by using both manual and machine.

§4.7 It is observed that 40.3 per cent HHs sold their millet in local haat, 27.4 per cent HHs sold their millet to local traders, 25.3 per cent HHs sold their millet to money lender, 5.6 per cent HHs sold their millet to mill owners and only 1.4 per cent HHs sold their millet to middlemen.

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ABBREVIATIONS

AL	: Agricultural Labour
AP	: Andhra Pradesh
ASHA	: Alliance for Sustainable and Holistic Agriculture
ATMA	: Agricultural Technology Management Agency
CCD	: Centre for Community Development
CCI	: Cotton Corporation of India
DAFP	: Directorate of Agriculture and Food Production
FGD	: Focused Group Discussion
FCI	: Food Corporation of India
ha	: Hectare
HH	: Households
Km	: Kilometre
MINI	: Millets Network of India
MT	: Metric Tonne
MSP	: Minimum Support Prices
MoU	: Memorandum of understanding
NAL	: Non Agricultural Labour
NTFP	: Non Timber Forest Produce
OBC	: Other Backward Classes
OC	: Other Caste
OFS	: Odisha Finance Service
OPDSC	:Orissa Professional Development Service Consultants
PDS	: Public distribution system
qtl	: Quintal
RRA	: Revitalizing Rain fed Agriculture
SC	: Scheduled Caste
SHGs	: Self-help groups
SMI	: System of Millet Intensification
ST	: Scheduled Tribe
SP	: Sale Price
WASSAN	: Watershed Support Service and Activities Network

1

INTRODUCTION

Background

Millets, probably the earliest of cereal grains that humans started domesticating, are making a comeback. Until the large scale investments in paddy and wheat promotion through the green revolution, millets were the staple grains of large sections of the population that did not have access to assured irrigation for their lands.

An important feature of these crops is that millets require much less water to grow than rice and wheat and can be successfully cultivated in semi-arid tropics and on poor soils. The biggest factor is that these crops are innately more efficient converter of energy and plant nutrients into biomass, including grains. Many among them are, therefore, capable of delivering higher tonnage per hectare than wheat and rice with modern agronomic technology and improved crop varieties, including hybrids, which are, thankfully, available in large number now. Apart from these benefits, promoting millet and other coarse cereals would also be needed given that crop yields in irrigated areas have almost reached a plateau. If India is to meet the rising demand for nutritious food and if rain fed agriculture has to experience a revolution in productivity, this is where research in agriculture and price policy should focus. Water-guzzling crops like rice and wheat should, in fact, give way to millet and other coarse cereals in areas where the HHs are irrigated with groundwater, causing rapid depletion of underground water aquifers, to prevent today's grain bowls from becoming tomorrow's deserts.

Despite the nutritional qualities of millet and climate resilience , the consumption of finger millets in India declined by 47 per cent, while intake of other small millets fell by 83 per cent in the last five decades, according to Development of Human Action (DHAN) Foundation. The reason for the decline has been attributed to easy availability of rice and wheat through PDS that resulted in food consumption away from the small millets in the producing regions, during 1961-2009 (Times of India, Coimbatore, August, 12, 2014).

The Central government launched the Initiative for Nutritional Security through Intensive Millet Promotion (INSIMP) in 2011-12 to promote millets as **"**nutri-cereals**"**. The scheme aims to catalyse increased production of millets in the country. The key aspect of the scheme is the post-harvest handling of millets, involving establishment of

units for processing and value-addition. Composite millet processing centres costing Rs. 4, 00,000 that handle de-stoning, de-hulling, flaking and rava-making, are to be established across the country towards this end.

District Profile

Rayagada district is known as the most famous region of the state because of its longest human history. The district came into existence on 2nd October 1992 between the hilly tracks, Bansadhara and Nagabali Rivers are flowing in this district. Rayagada is a district of meadows, forests, waterfalls and terraced valleys, peopled by many primitive tribal groups. The scenic beauty and heritage on the land is an unexplored paradise.

The district has an area of 7073 sq.kms with 9.7 lakhs of population as per 2011 census. The district accounts for 4.54 per cent of the state's territory and shares 2.31 per cent of the state's population. The density of population of the district is 137 per sq.kms as against 270 persons per sq.kms of the state. It has 2667 villages (including 200 un-inhabited villages) covering 11 blocks, 11 Tahasils and 2 subdivisions. As per the 2011 census the SC population is 139514 (14.4%) and ST population 541905 (56.0%).

Rayagada district is one of the Southern located districts in Odisha. It lies between 82^{o} 54' to 84^{o} 2' East longitude and between 19^{o} 0' to 19^{o} 58' North latitude. It is bounded by the Kandhamal district in north, Andhra Pradesh in south, Rayagada district in the east and Koraput district in the west.

The climate condition of the district 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 1165.8 mm in 2011, which is lower than the normal rainfall (1285.9 mm).

The geographical area of the district is 7073 sq.kms and 9.7 lakhs of population as per 2011 census. The district accounts for 4.54 per cent of the state's territory and shares 2.31 per cent of the state's population. The density of population of the district is 137 per sq.kms against 270 people per sq.km of the state. It has 2667 villages (including 200 un-inhabited villages) covering 11 blocks, 11 Tahasils and 2 Subdivisions. As per 2011 census the schedule caste population is 139514 (14.4 %) and schedule tribe population 541905 (56.0%) The literacy percentage of the district covers 49.8 against 72.9 of the state.

Table 1.1: Key Indicators 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	1051
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 Labourers 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 ('000 ha)	71.6
Irrigation, Rabi ('000 ha)	28.1
Other Information	
Proportion of Villages Electrified (as on March 2014)	28.8
Credit Deposit Ratio (as on December 2015)	38.2
No. of Aanganwadi Centres, 2014-15	191257
No. of Job Card Issued (cumulative, March 2015)	184488
HH provided employment through MGNREGS, cumulative 2014-15	75826

Source: *District Statistical Hand Book, Rayagada, 2011*
*District at a Glance-2016
Note: MGNREGS is Mahatma Gandhi National Rural Employment Guarantee Scheme

Objectives

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

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

Methodology

Universe

All the HHs are covered under OMM, as per the list provided by Programme Secretariat, formed the universe. Three blocks namely Gudari, Gunupur and Rayagada have been surveyed. From the 664 HHs covered under the programme, 542 HHs have been surveyed. From these, 453 HHs (83.6%) have cultivated millets and 89 HHs (16.4%) did not cultivate millets in 2016-17, that is, in the year before the intervention under OMM. Out of total 542 HHs surveyed, 108 HHs (50%) are from Gudari block, 222 HHs (30%) are from Gunupur block and 212 HHs (20%) are from Rayagada block, Table 1.2.

Table 1.2: HHs Surveyed in Rayagada District

Block	Programme HHs	Surveyed HHs	HHs Cultivated Millets in 2016-17	HHs did not Cultivate Millets in 2016-17	% of HHs covered
Gudari	108	108	23	85	100.0
Gunupur	309	222	222	0	71.8
Rayagada	247	212	208	4	85.8
Total	664	542	453	89	81.6

Source: WASSAN and Field Survey

Data Collection

The survey is primarily collected from the selected blocks by using pre-tested interview schedule. Two types of schedules are used to collect the information. The basic information from all the intervened HHs was collected through structured interview schedule, Focus Group Discussion (FGD). The secondary data was also used to get the

geographical information, population details, agricultural, education, irrigation, primary Agricultural Societies and forest from district statistical Hand Book 2011.

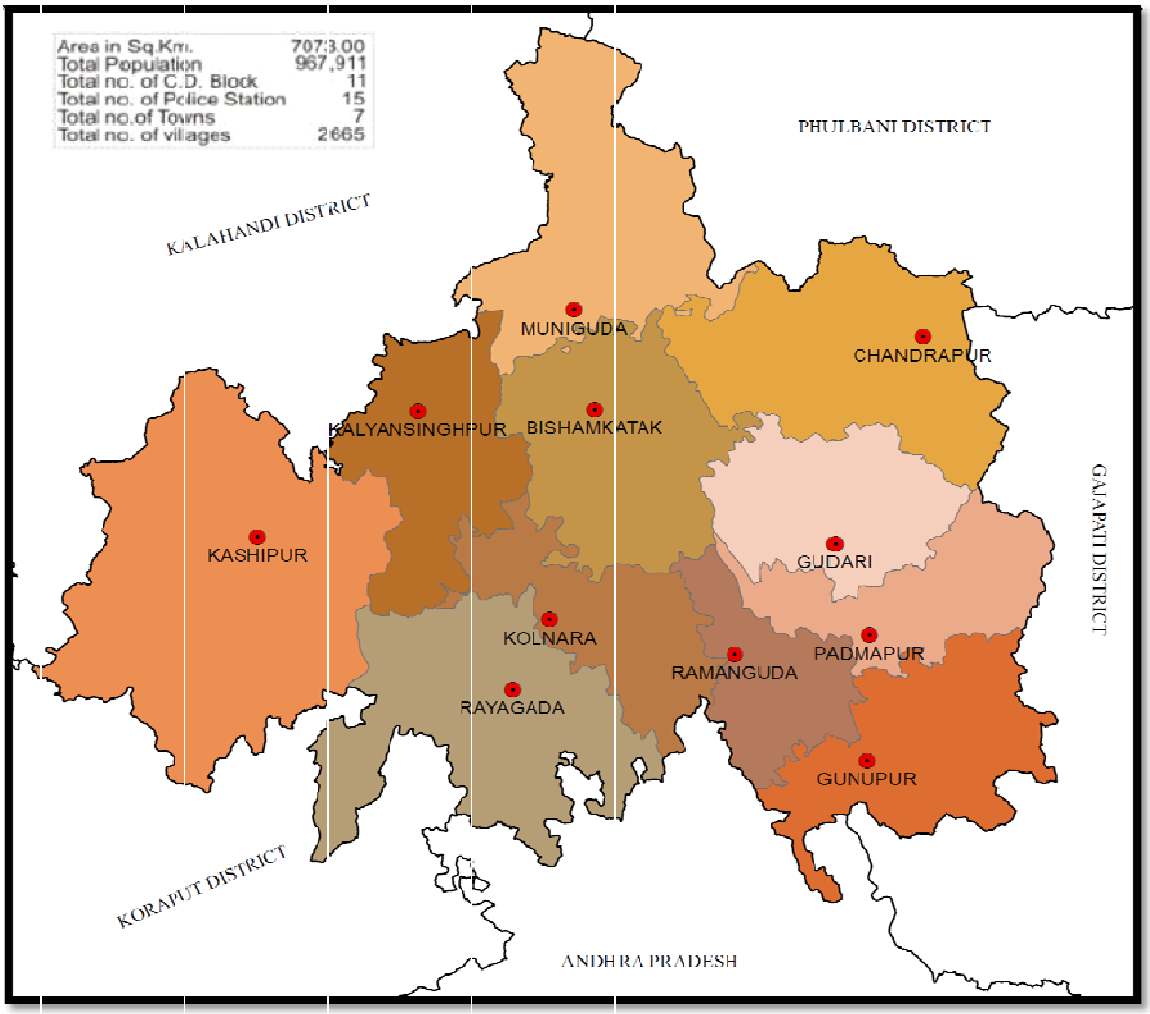
Limitation

The study is limited to the three blocks of Rayagada district. We could not get information of 89 HHs due to various reasons. The most important reason is non availability of respondents during period of survey.

Chapterization

The baseline survey has been divided into six chapters including the current introductory chapter, which provides district profile, objectives, methodology and limitations. Chapter 2 provides socio-economic profile of HHs surveyed. Chapter 3 provides details on production and productivity of millets. Chapter 4 discusses consumption pattern of millets. Chapter 5 elucidates on processing and marketing of millets. Chapter 6 summarizes the findings.

Fig-1.1: Map of Rayagada District with Blocks



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

2

SOCIO-ECONOMIC PROFILE OF HOUSEHOLDS SURVEYED

2.1 Introduction

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

2.2 Demographic Profile

Out of eleven blocks in Rayagada district, millet mission programme included three blocks such as Gudari, Gunupur and Rayagada blocks. From 542 HHs, 507 HHs belongs to ST (93.5%), 8 HHs belong to SC (1.5%) and 27 HHs belong to OC (5.0%). The above scenario shows that these three blocks of Rayagada districts are major tribal dominant area**.** Block-wise data reveals that 41.0 per cent millet growing HHs are found in Gunupur block, 19.9 per cent in Gudari block and 39.1 per cent in Rayagada block (Fig-2.1).

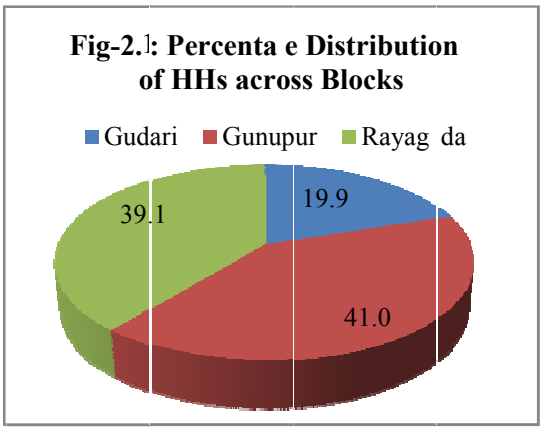


Table 2.1: Distribution of HHs by Social Group across Blocks

Social Groups	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
SC	6	5.6	0	0.0	2	0.9	8	1.5
ST	101	93.5	222	100.0	184	86.8	507	93.5
OC	1	0.9	0	0.0	26	12.3	27	5.0
Total	108	100.0	222	100.0	212	100.0	542	100.0

y

Note: ST is Scheduled Tribe, SC is Scheduled Caste and OC is Other Caste

The total population as per the surveyed HHs comes to around 1815, out of which 20.6 per cent belongs to Gudari block, 43.6 per cent belong to Gunupur block and 35.8 per cent belong to Rayagada block. The share of female population (50.4%) is little more than the male population (49.6%).

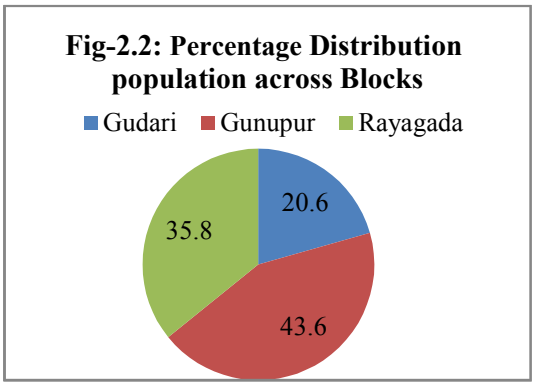


Table 2.2: Distribution of Population by Gender across Blocks

Sex	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Male	191	51.1	401	50.7	309	47.5	901	49.6
Female	183	48.9	390	49.3	341	52.5	914	50.4
Total	374	100.0	791	100.0	650	100.0	1815	100.0

Source: Field Survey

People from two religious communities are found in the three blocks of Rayagada district. The major religious community is Christian whose share is 52 per cent and the next religious community is Hindu whose share is 48 per cent. Block-wise information indicate that highest 99.1 per cent Hindus are found in Rayagada block but Christians are found highest in Gunupur block (94.6%) in Rayagada district. The religious community wise distribution of HHs in different blocks of the district has been shown in the table 2.3.

Table 2.3: Distribution of HHs by Religion across Blocks

Religion	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Hindu	38	35.2	12	5.4	210	99.1	260	48.0
Christian	70	64.8	210	94.6	2	0.9	282	52.0
Total	108	100.0	222	100.0	212	100.0	542	100.0

Source: Field Survey

Poverty Status

Our field survey data also shows that poverty is very high in Rayagada district as more than two third of the population live below poverty line (BPL) (83.9%). The poverty is highest in Rayagada block (90.6%) closely followed by Gunupur block and Gudari Block. However the situation is relatively better in Gunupur block, whereas 29.3 per cent live above poverty line (APL). The block wise distribution of BPL and APL HHs has been given in table 2.4.

Table 2.4: Distribution of HHs by Poverty Status across Blocks

Economic Category	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
BPL	106	98.1	157	70.7	192	90.6	455	83.9
APL	2	1.9	65	29.3	20	9.4	87	16.1
Total	108	100.0	222	100.0	212	100.0	542	100.0

Source: Field Survey

Note: BPL is below poverty line and APL is above poverty line

Economic Activities

Economic activities of surveyed HHs have revealed in table 2.5. Multiple option of beneficiary has undertaken to analyses the data. It is evident that highest 51.3 per cent HHs are engaged in agriculture activities, and 24.6 per cent are engaged in Minor Forest collection (MFP). 20.3 per cent HHs are engaged in non-agricultural labour (NAL) activities and remaining 1.6% HHs are engaged in other activities. The data reveal that agriculture is the main occupation of HHs in all blocks, among them highest is observed in Rayagada block (81.2%), and remaining 51.9 per cent in Gudari block and 24.6 per cent in Gunupur block. Other activities are very less in all blocks.

Table 2.5: Distribution of HHs by Economic Activities across Blocks

Economic Activity	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Agriculture	108	51.9	71	24.6	207	81.2	386	51.3
NAL	1	0.5	151	52.2	1	0.4	153	20.3
Service holder	1	0.5	0	0.0	15	5.9	16	2.1
Business	0	0.0	0	0.0	0	0.0	0	0.0
MFP	87	41.8	67	23.2	31	12.2	185	24.6
Others	11	5.3	0	0.0	1	0.4	12	1.6
Total	208	100.0	289	100.0	255	100.0	752	100.0

Source: Field Survey

Note: Nos and figures are rounded up to the first decimal, and hence, may not add up to all values across activities.

Structure of House

House structure is another important indicator to assess the economic condition of the HHs. Out of the total surveyed HHs in the district, 10 per cent have *pucca* houses. The percentage of *pucca* house is highest in Gunupur block. The percentage of *kutcha* house is also lowest in this block. It can be noted here that the average annual income of other two blocks are very low. Semi-*pucca* house is constituted of 69.4 per cent and *kutcha* house 20.7 per cent.

Table 2.6: Distribution of HHs by House Structure across Blocks

House Type	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Pucca	3	2.8	17	7.7	34	16.0	54	10.0
Semi-Pucca	36	33.3	184	82.9	156	73.6	376	69.4
Kutcha	69	63.9	21	9.5	22	10.4	112	20.7
Total	108	100.0	222	100.0	212	100.0	542	100.0

Source: Field Survey

2.6 Conclusion

The socio-economic conditions of the HHs surveyed indicate that highest Millet HHs in Gunupur block (41.0%), 19.9% in Rayagada block and 39.1 per cent in Gudari block. The poverty is highest in Rayagada block (90.6%) closely followed by Gunupur block and Gudari Block. agriculture is the main occupation of HHs in all blocks, among them highest are observed in Rayagada block (81.2%), 51.9 per cent in Gudari block and 24.6 per cent in Gunupur block. Other activities are very less in all blocks. The percentage of *pucca* house is highest in Gunupur block. The percentage of *kutcha* houses is also lowest in this block. The next chapter, Chapter 3, looks into aspects of production and productivity of millets.

3

PRODUCTION

3.1 Introduction

In this chapter an attempt has been made to throw some light on the status of production and productivity of millets, usage of seeds, and package of practices in Rayagada district. These are based on baseline data for 2016-17 from HHs surveyed in Gudari, Gunupur and Rayagada blocks where OMM has been operational since *kharif* 2017.

3.2 Area, Production and Yield Rate

Broadly there are three types of millets cultivated in Rayagada District during 2016-17. These are *ragi*, *janha* and *kangu*. The total production of different types of millets by the 452 HHs who are covered under the OMM Programme comes to around 543.10 quintals. Maximum number of HHs cultivated r*agi* amounts to 452 HHs. There are different types of *mandia (ragi)* such *as badamandia, sanamandia, kalamandia*, etc. are cultivated in the district. The next important millet produced by the people was *janha*. Only one household have cultivated *janha* and only three HHs have cultivated k*angu*. Out of the total production, the share of r*agi* is highest 539.8 quintals, whereas *janha* 2.1 quintal and *kangu* 1.2 quintal. It is observed that out of total cultivated area, r*agi* was cultivated in 140.5 hectares of land, *janha* was in 0.4 hectare of land and *kangu* was in 0.8 hectare of land.

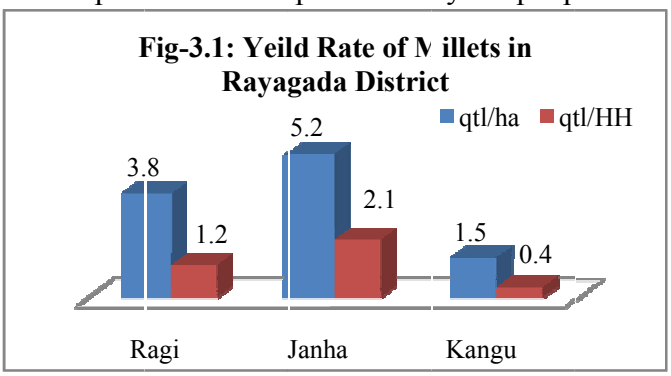


Table 3.1: Area, Production and Yield of Millets in Rayagada District

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtl	%	qtl/ha	qtl/HH
Ragi	452	99.1	140.5	99.1	539.8	99.4	3.8	1.2
Janha	1	0.2	0.4	0.1	2.1	0.4	5.2	2.1
Kangu	3	0.7	0.8	0.2	1.2	0.2	1.5	0.4
Total	453	100.0	141.7	31.1	543.1	100.0	3.8	1.2

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops.

Per hectare production reveals that the yield rate was 3.8 qtls/ha, whereas 5.2 qtls/ha and 1.5 qtls/ha yield rate of *janha* and k*angu* respectively. Per HH production of *ragi* was 1.2 qtls and that of the j*anha* was 2.1 qtls and *kangu* was 0.4 qtls. It is observed that *janha* and *kangu* cultivation is very small. It is found that only three HHs cultivated two varieties of millets

Production and productivity of millets in Gudari block has been shown in Table-3.2. It is observed that out of total millets cultivated HHs, 22 HHs (95.7%) have cultivated *ragi* and only one HH have cultivated *janha.* In case of area cultivated, out of total area (6.6 ha of land), *ragi* was cultivated in 6.2 ha of land and *jahna* was cultivated in 0.4 hectare of land. In case of production, out of total production (22.5 qtls), production of *ragi* was 20.4 quintals and the production of *jahna* was 2.1 quintals. In the context of productivity, the total productivity was 3.4 qtls/ha, out of that the productivity of *ragi* was 3.3 qtls/ha and *jahna* was 5.2 qtls/ha. Per HH productivity of *ragi* and *jahna* was 0.9 qtls and 2.1 qtls respectively in Rayagada district.

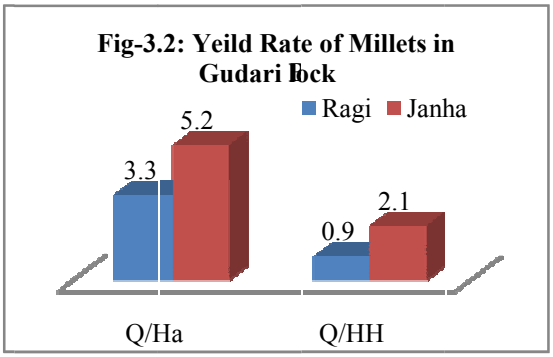
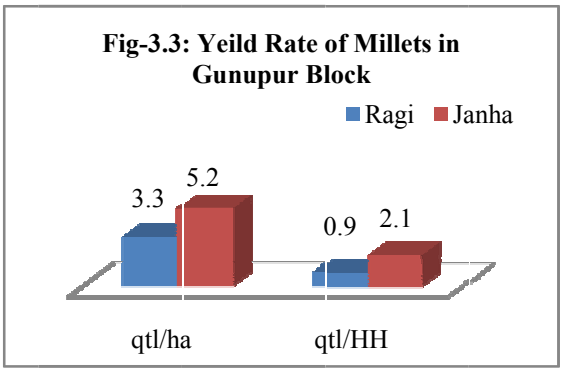


Table-3.2: Area, Production and Yield of Millets in Gudari Block

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtl	%	qtl/ha	qtl/HH
Ragi	22	95.7	6.2	93.9	20.4	90.6	3.3	0.9
Janha	1	4.3	0.4	6.1	2.1	9.4	5.2	2.1
Total	23	100.0	6.6	99.9	22.5	100.0	3.4	0.98

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops

Production and productivity of millets in Gunupur block has been shown in table-3.3. It is evident that out of total 222 millets cultivated HHs, all HHs have cultivated *ragi* and only three HHs have cultivated k*angu* in this block. In case of area cultivated, out of total area (47.8 ha of land), *ragi* was cultivated in 47 hectares of land and k*angu* was cultivated in 0.8



hectare of land. In case of production, out of total production (153.5 qtls), the production of *ragi* was 152.3 quintals and the production of *kangu* was 1.2 quintals. In the context of productivity, the total productivity was 3.2 qtls/ha, out of that the productivity of *ragi* was 3.2 qtls/ha and *kangu* was 1.5 qtls/ha. Per HH productivity of *ragi* and *kangu* was 0.7 quintal and 0.4 quintal respectively in Rayagada district.

Table-3.3: Area, Production and Yield of Millets in Gunupur Block

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtl	%	qtl/ha	qtl/HH
Ragi	222	100.0	47.0	98.3	152.3	99.2	3.2	0.7
Kangu	3	1.4	0.8	1.7	1.2	0.8	1.5	0.4
Total	222	100.0	47.8	99.9	153.5	100.0	3.2	0.7

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to all values across crops

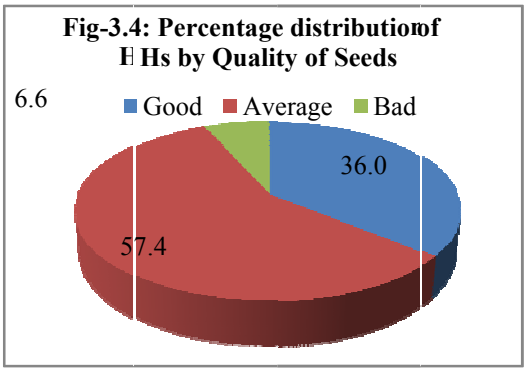
Production and productivity of millets in Rayagada block has been shown in table 3.4. It is evident that out of total 208 millets cultivated HHs, all HH have cultivated *ragi* and no other varieties of millets were cultivated by them. In this blocks, HHs were cultivated *ragi* in 87.3 hectare of land with 367.2 quintals production, 4.2 qtls/ha and 1.77 qtls/HH productivity.

Table-3.4: Area, Production and Yield of Millets in Rayagada Block

Millets	HHs		Area		Production		Yield	
	No.	%	Ha	%	qtl	%	qtl/ha	qtl/HH
Ragi	208	100.0	87.3	100.0	367.2	100.0	4.2	1.77
Total	208	100.0	87.3	100.0	367.2	100.0	4.2	1.77

Perception on Quality of Seeds Used

Seed is an important component of production process. The volume of production and quality of production are very much dependent on the quality of the seed. HHs in the Rayagada district used the traditional varieties of seeds as Government does not supply any seed to them. All HHs reported about the quality of seed used in their fields for millet cultivation.



It is observed that highest 57.4 per cent of HH used average quality seeds for their millet cultivation, 36 per cent of HH used good quality seeds and 6.6 per cent of

HHs has used bad quality seeds in Rayagada district. The qualities of seeds used by HHs are completely based on the locally availability and accessibility.

Table-3.5: Perception of Respondents regarding Quality of Seeds Used

Quality	Gudari		Gunupur		Rayagada		Total	
	No.	%	No.	%	No.	%	No.	%
Good	5	21.7	27	12.2	131	63.0	163	36.0
Average	18	78.3	165	74.3	77	37.0	260	57.4
Bad	0	0.0	30	13.5	0	0.0	30	6.6
Total	23	100.0	222	100.0	208	100.0	453	100.0

Package of Practices

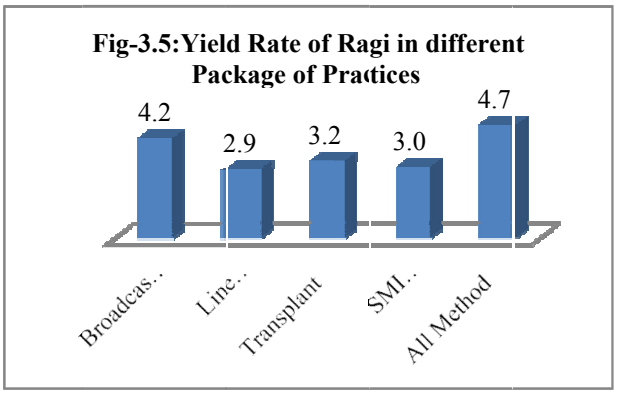
In this section the different agronomic practices used by the HHs in the surveyed blocks of Rayagada district, such as broadcasting, line sowing, transplanting, SMI method etc. has been shown in table-3.6.

Table-3.6: Package of Practices for *ragi* cultivation in Rayagada District

Package of practice	HHs		Area		Production		Yield
	No.	%	ha.	%	qtl	%	qtl/ha
Broadcasting	218	48.2	88.1	62.7	369.5	68.4	4.2
Line Showing	21	4.6	6.3	4.5	18.1	3.4	2.9
Transplant	203	44.9	43.3	30.8	139.2	25.8	3.2
SMI method	1	0.2	0.2	0.1	0.6	0.1	3.0
All Method	10	2.2	2.6	1.9	12.5	2.3	4.7
Total	453	100.2	140.5	100.0	539.8	100.0	3.8

Note: The area and production figures are rounded up to the first decimal, and hence, may not add up to the total values across package of practices

Out of the total sample of 453, 452 HHs (99.8%) cultivated *ragi* in 140.5 hectares of land, 218 HHs adopted broadcasting method in 88.1 hectares of land with production 369.5 quintals and yield rate 4.2 qtls/ha, 203 HHs cultivated through transplant method in 43.3 hectares of land with production 139.2 quintals and yield rate 3.2 qtls/ha, 21 HHs cultivated through line showing in 6.3 hectares of land with production 18.1 quintals and yield rate 2.9 qtls/ha and similarly, only one HH has used SMI method in 0.2 hectare land with 0.6 quintal production and with yield rate 3 qtls/ha. Beside those methods, some HHs have used all methods for the cultivation millets as 10 HHs



cultivated in 2.6 hectare land with 12.5 quintals production and with yield rate 4.7 qtls/ha in Rayagada district.

Table-3.7: Package of Practices for Janha Cultivation in Rayagada District

Package of practice	HHs		Area		Production		Yield
	No.	%	ha	%	qtl	%	qtl/ha
Broadcasting	1	100.0	0.4	100.0	2.1	100.0	5.2
Total	1	100.0	0.4	100.0	2.1	100.0	5.2

Source: Field Survey

One HH in Rayagada district adopted broadcasting package of practices for *janha* cultivation. It is observed that production was 2.1 quintals in 0.4 hectare of land with 5.2 qtls/ha yield rate. (Table-3.7)

Table-3.8: Package of Practices for Kangu Cultivation in Rayagada District

Package of practice	HHs		Area		Production		Yield
	No.	%	ha.	%	qtl	%	qtl/ha
Transplant	3	100.0	0.8	100.0	1.2	100.0	1.5
Total	3	100.0	0.8	100.0	1.2	100.0	1.5

Source: Field Survey

Three HHs in Rayagada district have adopted transplant package of practices for *kangu* cultivation. It is observed that production was 1.2 quintals in 0.8 ha of land with 1.5 qtls/ha yield (Table-3.8)

3.5 Conclusion

Three types of millets, viz, *ragi*, *jahna* and *kangu* were cultivated in Rayagada during the period covered under baseline survey, 2016-17. *Ragi* was cultivated in 140.5 hectares of land; Janha was cultivated in 0.1 hectare of land and *kangu i*n 0.2 hectares of land. It is observed that highest 57.4 per cent HHs used average quality seeds for their millet cultivation, 36 per cent HHs used good quality seeds and 6.6 per cent HHs have used bad quality seeds in Rayagada district. Only one HH has used SMI method in 0.2 hectare land with 0.6 quintal production and with yield rate 3.0 qtls/ha. In the next chapter we discuss consumption of millets.

4

CONSUMPTION

4.1 Introduction

This chapter deals with consumption pattern of millets in different season, in different time of the day and different types of millet recipes has discussed. Besides marketing, consumption is the important. It gives nutritional benefit greatly. Now-a-days, urban people are consuming millets to escape from fatal diseases like diabetics and other nutritional deficiencies.

4.2 Consumption Pattern of Millets

The consumption of millet is more in summer season (91.3%) compared to rainy (57.9%) and winter seasons (34.1%). This may be due to the fact that a person who consumes millet requires less amount of water and do not feel thirsty. It is a well-known fact that availability of drinking water reduces to a great extent during the summer season in Rayagada district. During summer season availability of other food item reduces and the consumption of millets give people more energy and they do not feel hungry (Table-4.1 and Fig-4.1)

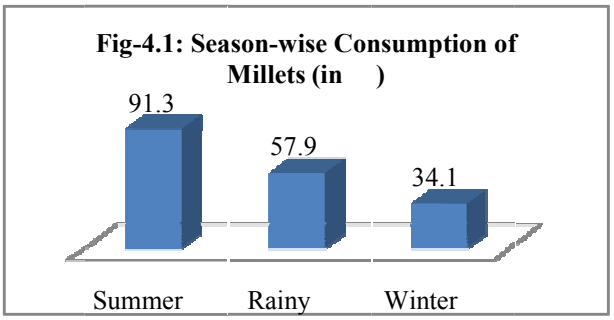
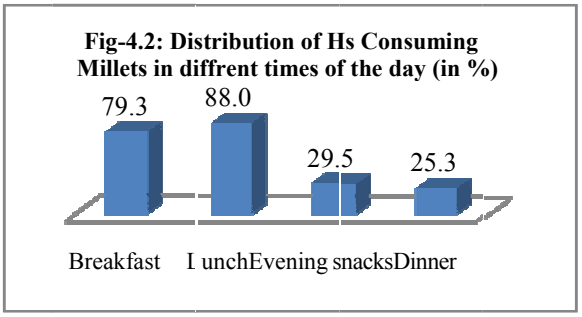


Table-4.1: Season-wise Consumption of Millets

Food Pattern	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Summer	108	100.0	222	100.0	165	77.8	495	91.3
Rainy	36	33.3	83	37.4	195	92.0	314	57.9
Winter	36	33.3	77	34.7	72	34.0	185	34.1
Total	108	100.0	222	100.0	212	100.0	542	100.0

Note: Column totals are not additions across seasons, as household can consume millets in all seasons.

The HHs in Rayagada district are found habituated to consume millet. It may be that tribal people have consumed more millet as compared to others. In the district, around 79.3 per cent HHs consume millet items in their breakfast,



88 per cent HHs consume in their lunch, 29.5 per cent HHs consume millets as dinner in their evening snacks and 25.3 per cent HHs consume millets as items in their dinner.

Table-4.2: Distribution of HHs consume during different Meals of the Day

Food Pattern	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Breakfast	40	37.0	222	100.0	168	79.2	430	79.3
Lunch	107	99.1	222	100.0	148	69.8	477	88.0
Evening snacks	29	26.9	57	25.7	74	34.9	160	29.5
Dinner	28	25.9	50	22.5	59	27.8	137	25.3
Total	108	100.0	222	100.0	212	100.0	542	100.0

Note: Column totals are not additions across meals, as a household can consume millets during all meals of the day.

4.3 Millet Recipes

Consumption of millet in Rayagada district is a year old ancient traditional practices by which the millet cultivation is still alive as it is consumed as a major food in their daily diet. People are consuming millets in several ways in the form of porridge, bread, cake, snack, steamed goods and beverage. But specifically this study covered major millet dishes used by different HHs in Rayagada district. Around 99.6 per cent of HHs consumes millets as porridge, locally called as *jau* which is very popular in Odisha *mandia jau* (finger millet porridge*).* More than half of the people (61.3%) consume millet in the form of cake/bread. Basically finger millet is used to make flat bread and cake. Locally it is called *pitha.* Around 39.5 per cent HHs consume millet in the form of *tampo.* It is a semi liquid recipe prepared by adding sugar, jaggery, coconut chips, etc. People of all ages particularly children prefer this recipe compared to other food items. Another popular millet food recipe is 'water finger millet'. This recipe is prepared by adding water to the cooked finger millet which is locally called as *mandia torani.* It *is* a common food for 49.4 per cent of HHs of Rayagada district and very few people are using millet as beverages in the form of *millet beer* locally called *handia*. It is prepared by adding different types of herbs to the cooked *mandia* and kept for few days for fermentation (Table-4.3 and Fig-4.3).

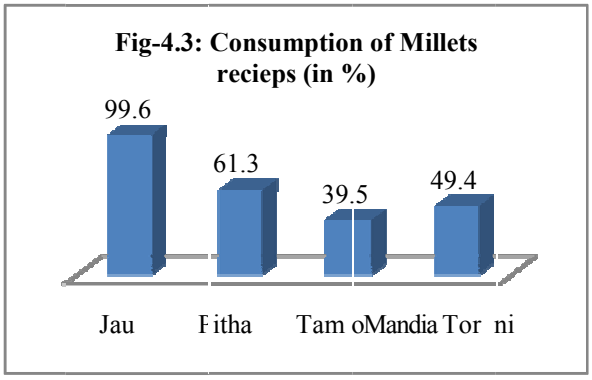


Table-4.3: Consumption of Millet Recipes

Recipes	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Jau	108	100.0	220	99.1	212	100.0	540	99.6
Pitha	104	96.3	46	20.7	182	85.8	332	61.3
Tampo	6	5.6	31	14.0	177	83.5	214	39.5
MandiaTorani	18	16.7	204	91.9	46	21.7	268	49.4
Total	108	100.0	222	100.0	212	100.0	542	100.0

Source: Field Survey
Note: Column totals are not additions across recipes, as a household can prepare all recipes.

4.4 Conclusion

Millets are consumed across all seasons, but relatively more in summer. There are different recipes that are popular and millets are consumed at all meal times. Around 79.3 per cent HHs consume millet items in their breakfast, 88 per cent HHs consume in their lunch and 25.3 per cent HHs consume millet items in their dinner. The next chapter looks into processing and marketing of millets.

5

PROCESSING & MARKETING

5.1 Introduction

This chapter looks into processing of millets by traditional manual methods and by machines, and the mode by which millets are sold. It also attempts to make an analysis of millets produced, consumed, sold and stored.

5.2 Processing Units

Millet processing is an important aspects after cultivation to prepare the final product which leads to address the market and consumption. There are two types of process to produce the final product of millets i.e. by machine and manually. As the geographical area of Rayagada district is a remote rural tribal belt with surrounded by mountains, processing of millet manually is normal for more than 50 per cent HHs processed millets manually. In fact 44.3 per cent of HHs processed millet by using machine and 1.5 per cent of HHs processed by using both manual and machine (Table 5.1 and Fig 5.1)

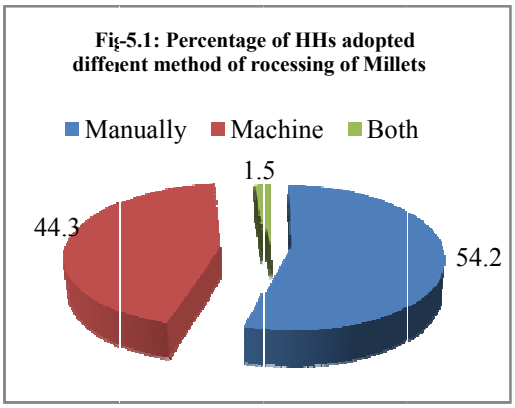
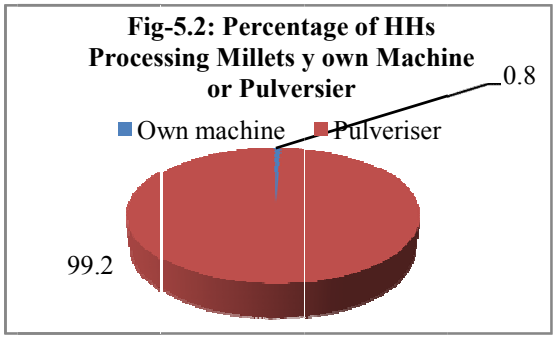


Table-5.1: Method of Processing Units

Processing	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Manually	52	48.1	40	18.0	202	95.3	294	54.2
Machine	56	51.9	175	78.8	9	4.2	240	44.3
Both	0	0.0	7	3.2	1	0.5	8	1.5
Total	108	100.0	222	100.0	212	100.0	542	100.0

Millet processing is little difficult in Rayagada district, lack of proper processing unit and long distance are the major problems for the accessibility for millet HHs. It is observed that out of total HHs, 99.2 per cent HHs are going to other pulveriser for processing their product and only 0.8 per cent HHs have own machine in Rayagada district. Block-wise performance indicates that only one HH from each block



i.e. Gudari and Rayagada block have access to machine and rest HHs are going outside for processing their millets as 55 HHs (98.2%) in Gudari block, cent per cent in Gunupur block and 90 per cent HHs in Rayagada block. (Table 5.2 and Fig 5.2)

Table-5.2: Availability of Processing Unit

Processing units	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Own machine	1	1.8	0	0.0	1	10.0	2	0.8
Other pulveriser	55	98.2	182	100.0	9	90.0	246	99.2
Total	56	100.0	182	100.0	10	100.0	248	100.0

The accessibility of machine for millet processing in Rayagada district is quite difficult, less than half of the total surveyed HHs used machine i.e. also available far from their village. It is observed that out of 248 HHs, 35.9 per cent farmer access processing unit within 10 km radius. 49.6 per cent farmer access within 11-20 km distance and 14.5 per cent farmer used machine which is more than 20 km distance from their village (Table 5.3 and Fig 5.3)

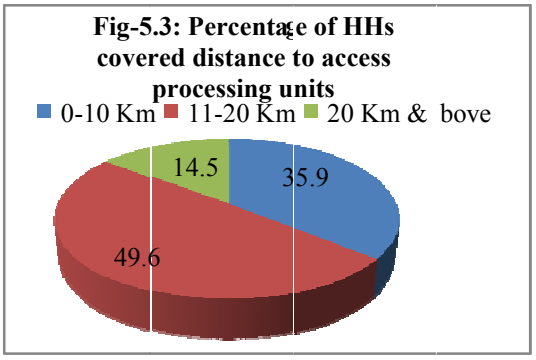
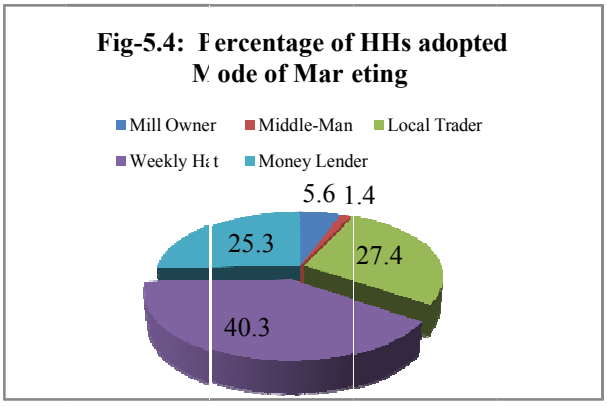


Table-5.3: Distance to Access Processing Unit

Distance(In Km)	Gudari		Gunupur		Rayagada		T tal	
	No	%	No	%	No	%	No	%
0-10 Km	56	10.0	31	17.0	2	20.0	89	35.9
11-20 Km	0	0.0	123	67.6	0	0.0	123	49.6
20 Km &Above	0	0.0	28	15.4	8	80.0	36	14.5
Total	56	10.0	182	100.0	10	100.0	248	100.0

5.3 Marketing

Except consumption, production is meaningless without marketing. Efficiency of market extends the production and productivity which ultimately increase income and shall help to reduce poverty. The households of Rayagada district were selling millets in different markets. It is observed that highest (40.3%) farmer sold their millet in local



haat, followed by 27.4 per cent farmers sold their millet to local traders, 25.3 per cent HHs sold their millet to money lender against loan taken, 5.6 per cent farmer sold their millet to mill owner and only 1.4 per cent farmer sold their millet to middlemen. Block-wise data reveals that 8.9 per cent HHs have sold to mill owner in Rayagada block and no one has sold to mill owners in Gudari and Gunupur block, 2.2 per cent HHs have sold to middlemen in Rayagada block and no one has sold to mill owners in Gudari and Gunupur block, 68.3 per cent HHs have sold to local traders in Gudari block, 75 per cent HHs have sold in weekly haat in Gunupur block and 62.8 per cent HHs have sold in weekly hat in Rayagada block, 31.7 per cent HHs have sold to money lender in Gudari block and 22.2 per cent HHs have sold to money lenders in Rayagada block.

Table-5.4: Distribution of HHs by different mode of marketing across Blocks

Block	Gudari		Gunupur		Rayagada		Total	
	No	%	No	%	No	%	No	%
Mill Owner	0	0.0	0	0.0	16	8.9	16	5.6
Middle-Man	0	0.0	0	0.0	4	2.2	4	1.4
Local Trader	71	68.3	1	25.0	7	3.9	79	27.4
Weekly Haat	0	0.0	3	75.0	113	62.8	116	40.3
Money Lender	33	31.7	0	0.0	40	22.2	73	25.3
Total	104	100.0	4	100.0	180	100.0	288	100.0

Source: Field Survey

Note: The row totals are not additions across mode of selling millets, as a household can sell in multiple ways.

5.4 Conclusion

During baseline survey, before implementation of Odisha Millets Mission, 44.3 per cent of HHs processed millet by using machine and 1.5 per cent of HHs processed by using both manual and machine (particularly for dehusking and grinding). 40.3 per cent farmer sold their millet in local hat, followed by 27.4 per cent farmer sold their millet to local traders, 25.3 per cent HHs sold their millet to money lender, 5.56 per cent farmer sold their millet to mill owner and only 1.4 per cent farmer sold their millet to middlemen

6
MAJOR FINDINGS

In Rayagada District, out of 542 HHs, 453 HHs have cultivated millets.

23 HHs have cultivated millets out of 108 millet HHs in Gudari block

51.3 per cent HHs are engaged in agriculture activities, 24.6 per cent are engaged in minor forest collection. 20.3 per cent HHs are engaged in non-agricultural labour activities and only 1.6 per cent engaged in other activities.

Per HH production of *ragi* was 1.2 qtls/HH and that of the *janha* was 2.1 qtls/HH and *kangu* was 0.4 qtls/HH. It is observed that *janha* and *kangu* cultivation is very less.

It is found that only three HHs cultivated two varieties of millets.

In *ragi* cultivation, only one HHs have used SMI method in 0.2 hectare land with 0.6 quintal production and with yield rate 3.0 qtls/ha.

The consumption of millet is more in summer season compared to rainy and winter seasons.

It is found that more than 50 per cent HHs processed millets manually.

Highest 40.3 per cent farmer sold their millet in local hat in comparison to other mode of marketing.

ସଂଯୁକ୍ତ ଗୃହ - ୧

ଓଡିଶାର ଆଦିବାସୀ ଅଞ୍ଚଳରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ବିକାଶ ନିମିତ୍ତ ସ୍ୱତନ୍ତ୍ର କାର୍ଯ୍ୟକ୍ରମ

ପରିବାର ସମ୍ବନ୍ଧୀୟ ପ୍ରଶ୍ନାବଳୀ

୧. ପରିବାରର ଚିହ୍ନଟ: ସାଙ୍କେତିକ ସଂଖ୍ୟା:

(କ) ଚାଷୀଙ୍କ ନାମ:

ଉତ୍ତରଦାତାଙ୍କ ନାମ:

(ଖ) ଗ୍ରାମ: ଗ୍ରାମପଞ୍ଚାୟତ: ବ୍ଲକ: ଜିଲ୍ଲା:

(ଗ) ବର୍ଗ: (i) ହରିଜନ (ii)ଆଦିବାସୀ (iii) ଅନ୍ୟାନ୍ୟ ପଛୁଆବର୍ଗ(iv) ସାମାଜିକ ଏବଂ ଆର୍ଥିକ ଅନଗ୍ରସର ଶ୍ରେଣୀ (v ସାଧାରଣ(ଉଲ୍ଲେଖକର)

(ଘ) ଉପଜାତି (ଉଲ୍ଲେଖକର) _____

ଙ) ଧର୍ମ: (i) ହିନ୍ଦୁ (ii) ମୁସଲମାନ (iii) ଖ୍ରୀଷ୍ଟିଆନ(iv) ଅନ୍ୟାନ୍ୟ(ଉଲ୍ଲେଖକର)

(ଚ) ବି. ପି.ଏଲ ଶ୍ରେଣୀରେ ଅନ୍ତର୍ଭୁକ୍ତକି ? ହଁ/ ନା

(ଛ) ଘରପ୍ରକାର ଏବଂ କୋଠାରୀ ସଂଖ୍ୟା: ପକ୍କା- ଆଶିଂକପକ୍କା - ମାଟି-

୨. ସରକାରଙ୍କ କ୍ଷୁଦ୍ରଶସ୍ୟ ମିଶନରେ ଭାଗୀଦାର ଅଛନ୍ତିକି? ହଁ/ ନା

୩. ପରିବାରର ମୋଟ ସଦସ୍ୟଙ୍କ ସଖ୍ୟା:

ଲିଙ୍ଗ	ବୟସବର୍ଗ(ବର୍ଷରେ)		
	୧୪ବର୍ଷ ପର୍ଯ୍ୟନ୍ତ	୧୫-୬୦ବର୍ଷ ମଧ୍ୟରେ	୬୦ବର୍ଷରୁ ଉର୍ଦ୍ଧ୍ୱ
ମହିଳା			
ପୁରୁଷ			

୪. ପରିବାରର ଅର୍ଥନୈତିକ କାର୍ଯ୍ୟକ୍ରମ (ଗତବର୍ଷ):

(କ) ଚାଷ/ଆନୁସଂଗିକ କାର୍ଯ୍ୟ/ ଚାକିରୀ (ସରକାରୀ/ଘରୋଇ)/ବ୍ୟବସାୟ/ଜଙ୍ଗଲଜାତ ଦ୍ରବ୍ୟ ସଂଗ୍ରହ/ଅନ୍ୟାନ୍ୟ (ଉଲ୍ଲେଖକର)

(ଖ) ପରିବାରର ଆନୁମାନିକ ବାର୍ଷିକ ଆୟ (ଟଙ୍କାରେ):_____

୫. ଆପଣ କୌଣସି ଠାରୁରଣ କରିଛନ୍ତିକି? ହଁ/ ନା

ଯଦି ହଁ, କେତେ ଟଙ୍କା ---------- କେଉଁ ସଂସ୍ଥାରୁ ଆଣିଛନ୍ତି ? ----------

୬. ମୋଟ ଜମିର ପରିମାଣ (ଗତବର୍ଷ) (ହେକ୍ଟରରେ):

(କ) ନିଜସ୍ୱ----------ସ୍ଥାନୀୟ ଏକକ----------

(ଖ) ଚାଷ କରିଥିବା ଜମିର ପରିମାଣ (ସ୍ଥାନୀୟ ଏକକରେ) ----------

(ଗ) ମୋଟ ଜଳସେଚିତ ଜମିର ପରିମାଣ (ସ୍ଥାନୀୟ ଏକକରେ) ----------

୭. କ୍ଷୁଦ୍ରଶସ୍ୟ କିପରି ଚାଷ କରିଥିଲେ? (କ) କେବଳ ଗୋଟିଏ ଶସ୍ୟ (ଖ) ଅନ୍ୟଶସ୍ୟ ସହିତ (ଅନ୍ୟଶସ୍ୟର ନାମଲେଖ)

୮. ବିହନର ବ୍ୟବହାର (ଗତବର୍ଷ)

(କ) ବ୍ୟବହାର କରିଥିବା ବିହନର ପରିମାଣ (କିଲୋଗ୍ରାମରେ) ----------

(ଖ) ବିହନର ପରିମାଣ ଯଥେଷ୍ଟଥିଲା କି? ହଁ/ ନା

(ଗ) ବିହନକୁ ବିଶୋଧନ କରିଥିଲେ କି? ହଁ/ ନା

(ଘ) ବିହନରମାନ କିପରିଥିଲା? i) ଭଲii) ସାଧାରଣiii) ଖରାପ

୯. କ୍ଷୁଦ୍ରଶସ୍ୟଚାଷପ୍ରଣାଳୀ(ଗତବର୍ଷ)

ଚାଷ ପ୍ରଣାଳୀ	ଠିକ ଚିହ୍ନ ଦିଅନ୍ତୁ	ଚାଷ ପ୍ରଣାଳୀ	ଠିକ ଚିହ୍ନ ଦିଅନ୍ତୁ
ଅଙ୍କୁରୋଦ୍ଗମ ପରୀକ୍ଷଣ		ମେସିନ୍ ଦ୍ୱାରାଘାସବଛା	
ଛଟାବୁଣା		କେତେଥର ଘାସବଛା ହୋଇଥିଲା(ସଂଖ୍ୟାରେ)	
ଧାଡିବୁଣା		ଜୈବିକ ସାରର ବ୍ୟବହାର	
ରୁଆ		ଜୈବିକ କୀଟନାଶକର ବ୍ୟବହାର	
ଏସ.ଏମ.ଆଇ ପ୍ରଣାଳୀ		ରାସାୟନିକ ସାରର ବ୍ୟବହାର	
ହାତରେ ଘାସବଛା		ରାସାୟନିକ କୀଟନାଶ କରବ୍ୟବହାର	

୧୦ .କ୍ଷୁଦ୍ରଶସ୍ୟରଉତ୍ପାଦନଏବଂବ୍ୟବହାର(ଗତବର୍ଷ)

କ୍ଷୁଦ୍ରଶସ୍ୟର ପ୍ରକାର	କେତେ ଜମିରେ ହୋଇଥିଲା (ଏକରରେ)	ମୋଟଉତ୍ପାଦନ (କ୍ୱିଣ୍ଟାଲରେ)	ଘରେ ବ୍ୟବହୃତ (କ୍ୱିଣ୍ଟାଲରେ)	ବିହନପାଇଁରଖିଥିବା ପରିମାଣ (କିଲୋଗ୍ରାମରେ)	ବିକ୍ରିକରିଥିବା ପରିମାଣ (କ୍ୱିଣ୍ଟାଲରେ)	ମୂଲ୍ୟ (କ୍ୱିଣ୍ଟାଲପିଛା/ ଟଙ୍କାରେ)

୧୧. ଗତବର୍ଷ ଆପଣଙ୍କ ଘରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ପରିମାଣ ଯଥେଷ୍ଟ ଥିଲା କି? ହଁ/ ନା

(କ) ହାରାହାରି ବାର୍ଷିକ ବ୍ୟବହୃତ ପରିମାଣ ---------- ଖ) ହାରାହାରି ବାର୍ଷିକ ଆବଶ୍ୟକତା----------

୧୨. କେଉଁ ସମୟରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ବ୍ୟବହାର କରିଥାଆନ୍ତି? i) ସକାଳେ ii) ଖରାବେଳେ iii) ସଂଧ୍ୟାବେଳେ iv) ରାତିରେ

୧୩. କେଉଁ ଋତୁରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ବ୍ୟବହାର କରିଥାଆନ୍ତି? i) ଗ୍ରୀଷ୍ମଋତୁ ii) ବର୍ଷାଋତୁ iii) ଶୀତଋତୁ

୧୪. ଆବଶ୍ୟକ ପଡିଲେ କେଉଁଠାରୁ କ୍ଷୁଦ୍ରଶସ୍ୟ କିଣିଥାଆନ୍ତି?

i) ବାହାରୁ ii) ପଡୋଶୀ/ ସାଙ୍ଗସାଥୀ/ ସମ୍ପର୍କୀୟଠାରୁiii) ଅନ୍ୟାନ୍ୟ(ଉଲ୍ଲେଖକର)

୧୫. ଆପଣ କ୍ଷୁଦ୍ରଶସ୍ୟକୁ କିପରି ପ୍ରସ୍ତୁତ କରନ୍ତି? i) ହାତରେii) ମେସିନ୍ ସାହାଯ୍ୟରେ

ଯଦି ଉତ୍ତର, ମେସିନ୍ ସାହାଯ୍ୟରେହୋଇଥାଏ ? ନିଜର ମେସିନ୍ ଅଛି କି? ହଁ/ ନା

୧୬. ଆପଣ କ୍ଷୁଦ୍ରଶସ୍ୟରେ କିପ୍ରକାରର ଖାଦ୍ୟ ପ୍ରସ୍ତୁତି କରିଥାଆନ୍ତି ?

ଜାଉ-୧, ପିଠା-୨, ତମ୍ବୋ-୩, ମାଣ୍ଡିଆ-ତୋରାଣୀ-୪, ହାଣ୍ଡିଆ-୫, ଅନ୍ୟାନ୍ୟ (ଉଲ୍ଲେଖକର)-୬

୧୭. ମହିଳାମାନେ କ୍ଷୁଦ୍ରଶସ୍ୟ ପ୍ରସ୍ତୁତି କରିବାରେ କିଛି ଅସୁବିଧାର ସମ୍ମୁଖୀନ ହେଉଛନ୍ତିକି? ହଁ/ ନା

୧୮. କ୍ଷୁଦ୍ରଶସ୍ୟର ବିକ୍ରୟ ପ୍ରଣାଳୀ:

i) ମିଲ୍ଲମାଲିକଙ୍କୁ ii) ମଧ୍ୟସ୍ଥଙ୍କୁ iii) ସ୍ଥାନୀୟ ବ୍ୟବସାୟୀଙ୍କୁ iv) ବଜାର v) ହାଟରେ/ସାହୁକାରଙ୍କୁ vi) ଅନ୍ୟାନ୍ୟ(ଉଲ୍ଲେଖକର)

୧୯. ବିକ୍ରୟସ୍ଥାନ ଏବଂ ଗ୍ରାମ ମଧ୍ୟରେ ଦୁରତ୍ୱ (କିଲୋମିଟରରେ)

ତଦନ୍ତକାରୀଙ୍କ ସ୍ୱାକ୍ଷର

ସଂଯୁକ୍ତ ଗୃହ -୨

ନବକୃଷ୍ଣ ଚୌଧୁରୀ ଉନ୍ନୟନ ଗବେଷଣା କେନ୍ଦ୍ର ଭୁବନେଶ୍ୱର

ଗୋପନୀୟ, କେବଳ ଗବେଷଣା ନିମିତ୍ତ

ଓଡିଶାର ଆଦିବାସୀ ଅଞ୍ଚଳରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ବିକାଶ ନିମିତ୍ତ ସ୍ୱତନ୍ତ୍ର କାର୍ଯ୍ୟକ୍ରମ

ଗୋଷ୍ଠୀ ଏବଂ ଦଳ ମାନଙ୍କ ସହିତ ଆଲୋଚନା

ଗ୍ରାମ:_____ ଗ୍ରାମପଞ୍ଚାୟତ:_____

ବ୍ଲକ:_____ ଜିଲ୍ଲା:_____

ତାରିଖ:_____ ସମୟ: _____

୧ .ଆଲୋଚନାରେ ଅଂଶଗ୍ରହଣ କରିଥିବା ବ୍ୟକ୍ତି ମାନଙ୍କ ତଥ୍ୟାବଳୀ:

କ୍ରନଂ .	ନାମ	ଲିଙ୍ଗ	ବୟସ	ଜାତି/ଗୋଷ୍ଠୀ	ଶିକ୍ଷା	ବୃତ୍ତି	ସ୍ୱାକ୍ଷର/ଟିପଚିହ୍ନ

ବି. ଦ୍ର: ଗ୍ରାମମୁଖିଆ, ଗ୍ରାମର ଶିକ୍ଷିତ ବ୍ୟକ୍ତି, ପଞ୍ଚାୟତର ନିର୍ବାଚିତ ସଭ୍ୟ,କ୍ଷୁଦ୍ରଶସ୍ୟା ଚାଷୀ ଏବଂ ଅନ୍ୟାନ୍ୟ ପ୍ରମୁଖ ତଥ୍ୟ ପ୍ରଦାନକାରୀ

ବିଭାଗ-୧: କ୍ଷୁଦ୍ରଶସ୍ୟର ଉତ୍ପାଦନ

୧ . ଗ୍ରାମର କେତେ ଘର କ୍ଷୁଦ୍ରଶସ୍ୟ ଚାଷ କରନ୍ତି :

ମାଣ୍ଡିଆ ,☐ ଶୁଆଁ ☐ କାଙ୍ଗୁ ☐ କୋଦୋ ,☐ ଅନ୍ୟାନ୍ୟ ଉଲ୍ଲେଖକର ☐

୨. କ୍ଷୁଦ୍ରଶସ୍ୟ ଚାଷର ପରିବର୍ତ୍ତନ:

ସୂଚାଙ୍କ	ପୂର୍ବରୁ	ଗତବର୍ଷ
ଜମିର ପରିମାଣ (ଏକରରେ)		
କିସମ		
ଅଧିକ ଅମଳକ୍ଷମ		
ପାରମ୍ପରିକ		
ଚାଷପ୍ରଣାଳୀ		
ଛଟାବୁଣା		
ଧାଡିବୁଣା		
ଏସ.ଏମ.ଆଇ		
ବଛାବଛି (ଲୋକମାନଙ୍କଦ୍ୱାରା)		

ବଛାବଛି (ମେସିନ୍ ସାହାଯ୍ୟରେ)		
କେତେଥର ବାଛନ୍ତି		
କେଉଁ ଖତସାର ବ୍ୟବହାର କରନ୍ତି (କମ୍ପୋଷ୍ଟଖତ)		
ରାସାୟନିକସାର		
କ୍ଷୁଦ୍ରଶସ୍ୟ ବୁଣାଠାରୁ ଅମଳ ପର୍ଯ୍ୟନ୍ତ କେତେ ସମୟ ଲାଗେ(ଦିନ)		
କେଉଁ ଋତୁରେ		
ଖରିଫ ଋତୁ		
ରବି ଋତୁ		
ସମର ଋତୁ		
ଅମଳର ମାତ୍ରା (ହେକ୍ଟରପିଛାକ୍ୟୁଣ୍ଟାଲରେ)		
ପ୍ରକାର-୧		
ପ୍ରକାର-୨		

ବିଭାଗ:- ୨ (କ୍ଷୁଦ୍ରଶସ୍ୟର ବ୍ୟବହାର)

୧. କ୍ଷୁଦ୍ରଶସ୍ୟ ସମ୍ପର୍କିତ ପାରମ୍ପରିକ ଉତ୍ସବ କିଛି କରାଯାଏ କି? ହଁ/ ନା

ଯଦି ହଁ: ୧) ପାରମ୍ପରିକ ଉତ୍ସବ, ୨. ବିହନ ବଦଳ, ୩. ବିଭିନ୍ନ ପ୍ରକାରର ଖାଦ୍ୟପ୍ରସ୍ତୁତି, ୪. ପ୍ରଦର୍ଶନୀ କିମ୍ବା ମେଳାର ଆୟୋଜନ

୨. କେଉଁ ମାସ/ଋତୁରେ କ୍ଷୁଦ୍ରଶସ୍ୟର ଅଧିକ ବ୍ୟବହାର କରାଯାଇ ଥାଏ? ମାସ_____ଋତୁ_____

କାରଣ କଣ - ଉଲ୍ଲେଖକର

୩. କ୍ଷୁଦ୍ରଶସ୍ୟରୁ ପ୍ରସ୍ତୁତ ଖାଦ୍ୟକୁ ଅଙ୍ଗନୱାଡି ମାନଙ୍କରେ ଦିଆଯିବା ପାଇଁ ଆପଣ ଚାହୁଁଛନ୍ତି କି? ହଁ/ ନା

ଯଦି ହଁ, କାରଣ କଣ ଉଲ୍ଲେଖକର

୪. କ୍ଷୁଦ୍ରଶସ୍ୟରୁ ପ୍ରସ୍ତୁତି ଖାଦ୍ୟକୁ ବିଦ୍ୟାଳୟ ମାନଙ୍କରେ ଦିଆଯିବାପାଇଁ ଆପଣ ଚାହୁଁଛନ୍ତି କି? ହଁ/ ନା

ଯଦି ହଁ, କାରଣ କଣ ଉଲ୍ଲେଖକର

୫. କ୍ଷୁଦ୍ରଶସ୍ୟରୁ ପ୍ରସ୍ତୁତି ଖାଦ୍ୟକୁ ଛାତ୍ରାବାସ ମାନଙ୍କରେ ଦିଆଯିବା ପାଇଁ ଆପଣ ଚାହୁଁଛନ୍ତି କି? ହଁ/ ନା

ଯଦି ହଁ, କାରଣକଣ ଉଲ୍ଲେଖକର

୬. କ୍ଷୁଦ୍ରଶସ୍ୟକୁ ସହାୟକମୂଲ୍ୟ କେନ୍ଦ୍ରମାନଙ୍କରେ ଲୋକମାନଙ୍କୁ ବିତରଣ କରାଯିବାପାଇଁ ଆପଣ ଚାହୁଁଛନ୍ତିକି? ହଁ/ ନା

ଯଦି ହଁ, କାରଣକଣ ଉଲ୍ଲେଖକର

ବିଭାଗ: ୩ – କ୍ଷୁଦ୍ରଶସ୍ୟର ପ୍ରସ୍ତୁତିପ୍ରଣାଳୀ

୧.ସାଧାରଣତଃ ଲୋକମାନେ କିପରି କ୍ଷୁଦ୍ରଶସ୍ୟକୁ ପ୍ରକ୍ରିୟା କରଣକରନ୍ତି* ? ☐

୨.କେତେ ପରିବାର କ୍ଷୁଦ୍ରଶସ୍ୟର ପ୍ରକ୍ରିୟାକରଣ ନିଜ ହାତରେ କରନ୍ତି?

୩.ଗ୍ରାମରେ କିମ୍ବା ପଞ୍ଚାୟତରେ କ୍ଷୁଦ୍ରଶସ୍ୟକୁ ପ୍ରସ୍ତୁତ କରିବାପାଇଁ ମେସିନ୍ ଅଛିକି ? ହଁ/ ନା

ଯଦିହଁ, ତେବେ କେତୋଟି ମେସିନ୍ ଅଛି?_____

ଯଦିନା, ତେବେ କେତେ ଦୁରତ୍ୱରେ ମେସିନ୍ ଉପଲବ୍ଧ ହେଉଅଛି,(କିଲୋମିଟରରେ)_____

୪.ଗ୍ରାମଠାରୁ କେତେଦୂରରେ କ୍ଷୁଦ୍ରଶସ୍ୟକୁ ପ୍ରସ୍ତୁତି କରିବାପାଇଁ ଯନ୍ତ୍ରାଂଶ ଉପଲବ୍ଧ ଅଛି? (କିଲୋମିଟରରେ)

(i*ହାତରେଗୁଣ୍ଡକରିମେସିନ୍ଦ୍ୱାରାବଛାବଛିକରିବାଚୋପାଛଡାଇ (iv ,ହାତରେବଛାବଛିକରିବାଚୋପାଛଡାଇ (iii ,ମେସିନ୍ଦ୍ୱାରାଗୁଣ୍ଡକରି(ii ,

ବିଭାଗ: ୪ -ବିକ୍ରୟ ପ୍ରଣାଳୀ

୧ .ବର୍ତ୍ତମାନ ବିକ୍ରୟ କରାଯାଉଥିବା କ୍ଷୁଦ୍ରଶସ୍ୟର ପ୍ରଣାଳୀ* ☐

i*ଚାଷ ଜମିରୁ ସିଧା ବିନା ପ୍ରକ୍ରିୟା କରଣରେ,ii)ବଛାବଛିକରି,iii) ଚୋପା ଛଡାଇ, iv) ଗୁଣ୍ଡକରି, v) ଅନ୍ୟାନ୍ୟଉଲ୍ଲେଖକର

୨. ଚାଷୀମାନେ ସାଧାରଣତଃ କେଉଁଠାରେ କ୍ଷୁଦ୍ରଶସ୍ୟକୁ ବିକ୍ରୟ କରିଥାଆନ୍ତି?* ☐ ☐ ☐ ☐

ମିଲ୍ଲାଲିକଙ୍କୁ ii) ମଧ୍ୟସ୍ଥଙ୍କୁ iii) ସ୍ଥାନୀୟବ୍ୟବସାୟୀଙ୍କୁ iv) ବଜାର/ ହାଟରେ v) ସାହୁକାରଙ୍କୁ vi) ଅନ୍ୟାନ୍ୟ(ଉଲ୍ଲେଖକର)

୩. ପାଖ ବିକ୍ରୟ କେନ୍ଦ୍ରର ଦୂରତ୍ୱ କେତେ? (କିଲୋମିଟରରେ)_____

୪. ପରିବହନର ମାଧ୍ୟମ (କିଲୋମିଟରରେ) _____

ବିଭାଗ: - ୫

୧ । କୃଷିରେ ବିକାଶ ନିମନ୍ତେ କୌଣସି ସରକାରୀ ଅଧିକାରୀ ଆପଣଙ୍କ ଗ୍ରାମକୁ ପରିଦର୍ଶନରେ ଆସିଥିଲେକି ? ହଁ/ ନା

ଯଦି ହଁ, କେଉଁ ସ୍ତରର ଅଧିକାରୀ ଆସିଥିଲା ?

i) କୃଷକ ସାଥି, ii) ଗ୍ରାମ୍ୟ କୃଷି କର୍ମଚାରୀ, iii) ବ୍ଲକ ସ୍ତରୀୟ (ସହକାରୀ କୃଷି ଅଧିକାରୀ),

iv) ଜିଲ୍ଲା ସ୍ତରୀୟ (ଜିଲ୍ଲା କୃଷି ଅଧିକାରୀ / ଜିଲ୍ଲା ଉପ କୃଷି ନିର୍ଦ୍ଦେଶକ),

v) ଅନ୍ୟାନ୍ୟ ଉଲ୍ଲେଖକର_____

୨ । କ୍ଷୁଦ୍ରଶସ୍ୟର ଉତ୍ପାଦନ / ବ୍ୟବହାର / ପ୍ରସ୍ତୁତି ଏବଂ ବିକ୍ରିୟାର ଉନ୍ନତିପାଇଁ ଯଦି କିଛି ମତାମତ ଥାଏ, ତେବେ ଉଲ୍ଲେଖ କରନ୍ତୁ

ଦଳଗତ ଆଲୋଚନା ସଂଚାଳନ କରିଥିବା ବ୍ୟକ୍ତିଙ୍କ ସ୍ୱାକ୍ଷର

PHOTO GALLERY


2 Aug 2018 13:24:16
19.466201520795483N 83.28518114921638E


Latitude: 18.514595
Longitude: 82.667753
Accuracy: 4600.0m
Note: .village kamel
Powered by NoteCam

` 13th February 2020

Errata

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