

BASELINE SURVEY:

KEONJHAR DISTRICT 2018-19, Phase 2
(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)

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(* See next page for details of NCDS study team)

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FOREWORD

The seeds for the "Special Programme for Promotion of Millets in Tribal Areas of Odisha" (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 then Development Commissioner-cum-Additional Chief Secretary (DC-cum-ACS), Government of Odisha, and Chairperson, NCDS, Mr. R. Balakrishnan (currently, Chief Advisor, Government of Odisha). 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 the then Chairperson of Karnataka Agricultural Price Commission, Dr T. Prakash. 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 27 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 for 30 selected blocks, the phase 1 blocks. In principle decision was taken to extend the programme to another 25 blocks in 2018-19, the phase 2 blocks, a further 17 blocks in 2019-20 (that includes 10 under the state plan and seven under District Mineral Fund (DMF), Keonjhar), the phase 3 blocks, and an additional 4 blocks under DMF, Sundargarh in Kharif 2021, the phase 4 blocks. The MoU with NCDS for 7 blocks under DMF Keonjhar was signed on 13 December 2018 and for 35 phase 2 and phase 3 blocks under state plan were signed on 25 February 2019. The current set of 10 baseline reports are based on surveys conducted during August 2019 February 2020 where the programme intervention had already started.

In each of the blocks, from the list provided by the facilitating agency through the programme secretariat that had names of participating farmer, village and gram panchayat. We first selected two of the gram panchayats randomly, and then, from each of the selected gram panchayat we selected two villages randomly. From each selected village, 15 farmer households were selected randomly and from a listing of non-participating farming households, five farmer households were selected. If a village did not have 15 participants then the sample size of non-participating households was increased so that the total number of sample households from each village was 20. As per this design, each block would have a sample of 80 farmer households. All respondent households were asked question regarding the scenario before the intervention of the programme, and hence, they were canvassed the same schedule. The survey was conducted by a third party. A sample of the surveyed

households were re-visited by the research secretariat team for scrutiny and validation of data. Besides, during this visit, focus group discussions were also conducted in some villages by the research secretariat team.

The lead author for the current baseline report on Keonjhar is Mr. Shiba Sankar Bibhar with research support from Dr. Narayani Rajashree Kanungo Mr Guru Prasad Khuntia and Mr Sanket Mishra along with other members of the study team. As Principal Investigator of the team, I compliment all the members for their effort.

The Odisha Millets Mission, as per a recent report that I authored, comparing first year outcome with the baseline report of the phase 1 blocks indicate that the yield has more than doubled and the value of produce has more than trebled in the year one of its intervention. In 2019, mandia procurement in *swabhiman anchal* of Malkangiri district was the first ever procurement of any grain in the region even after 70+ years of independence. In 2020, in spite of the pandemic, ragi ladoos are being piloted as a consumption awareness campaign through Integrated Child Development Scheme in Keonjhar and Sundargarh under respective DMF. These expansions are also brining in opportunities of convergence across line departments, which is an important development for any pro people public policy engagement.

On the research front there have been engagements with a consortium of universities and institutes led by University of Cambridge through TIGR²ESS (Transforming India's Green Revolution by Research and Empowerment for Sustainable food Supplies). Agreements have been signed with Indian Institute of Millets Research (IIMR), Hyderabad, and Central Food Technological Research Institute (CFTRI), Mysuru, Fobenius Institute at Goethe University, Frankfurt and also exploring a research collaboration with them that includes scholars from Groningen University among others.

There has been interest in Odisha Millets Mission from the central as also other state governments. The unique institutional architecture that brings together the Government, civil society and the Academia led by NCDS to complement and supplement each other has been appreciated by policy makers (including National Institution for Transforming India, NITI Aayog), civil society and the Academia. So, the chant of OMM continues to reverberate.

Srijit Mishra
Director, NCDS

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Baseline Survey- Keonjhar is an outcome of dedicated team work. Nabakrushna Choudhury Centre for Development Studies (NCDS), Bhubaneswar, prepared the report with support from related government departments, organizations, and related stakeholders including farmers' associations.

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We also express our sincere thanks and gratitude to district level officers of Keonjhar district, particularly to Dr. Uddhaba Chandra Majhi PD DRDA-Cum- Chief Executive Officer District Mineral Foundation(DMF) Keonjhar, Mr. Chitaranjan Sahoo, former Deputy Director Agriculture (DDA)-cum-Project Director (PD) Agriculture Technology Management Agency (ATMA), Mr. Sarat Chandra Dash Chief district Agriculture Officer (CDAO)-Cum-Project Director (PD) Agriculture Technology Management Agency (ATMA), Ms. Sumansmita Tarai, Scheme Officer, Mr. Jugalkishore Patra, AAO, Keonjhar Sadar Block, Mr. Ratikant Mohanty, AAO, Jhumpura Block, Mr. Amresh Routray and Mr. Madhusudan Behera, AAO, Banspal Block.

We extended our whole hearted and sincere gratitude to District Mineral Foundation (DMF) Team Leader Mr. Prasanna Venkatakrishnan., Mr. Ajay Kumar former senior programme officer, Mr. Sisir Kumar Sahoo Senior programme officer.

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Last but not the least, credit and special thanks are due to the members of the facilitating agencies working in these four blocks of the district, namely, Keonjhar Integrated Rural Development Training Institute (KIRDTI), Ideal Development Agencies (IDA), Saunta Gounta Foundation (SGF) who have supported a lot during data collection.

We thank Mr. Shiba Shankar Bibhar in the project as Research Assistants who did all the household survey and data entry work. 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.

Mr. Shiba Shankar Bibhar

EXECUTIVE SUMMARY

§1 Study Area

- §1.1 Keonjhar is one of the eight districts where the "Special Programme for Promotion of Millets in Tribal-Cum-Mining Affected Areas of Kendujhar, Odisha (hereafter, Odisha Millets Mission, OMM)" was started in *kharif* 2019 in four blocks of the district, namely, Sadar, Banspal, Jhumpura and Harichandanpur.
- §1.2 Out of 322 households (HHs) covered under baseline survey, 80 HHs each are from Harichandanpur, Banspal, Jhumpura and Sadar blocks.

§2 Status of Agricultural Activities in the District: A brief desk review of literature of agricultural data of Keonjhar district indicates following information relating to land use pattern, cropping pattern and status of millet cultivation in the district.

- §2.1 The land utilisation data (2017) shows that a substantial portion of land is utilized for forest and non-agricultural uses, or is barren, grazing, or cultural waste land. Percentage of cultivable land is small in size (i.e. 33.03 per cent at district level and 25.52 per cent at surveyed blocks level) and agriculture is rain fed in most part of the district, it has an adverse impact on the productivity and yield of the crops.
- §2.2 Keeping the climatic condition and consumption pattern in perspective partly influenced by government schemes, Keonjhar has traditionally come to establish itself as a paddy growing district. Besides, other crops which are grown in the locality include wheat, maize, ragi, green gram, sugar cane, ground nut and mustard oil. However, productivity of these crops is quite low owing to various factors including climatic condition, soil fertility, lack of irrigation facility. It is estimated that per hectare productivity of paddy in the district is 21.4 quintals. Paddy is cultivated in 53572 hector of land out of district's total land worth 168219 hector.

The production of paddy in the district is 3516340 quintal while in the surveyed blocks production is 1331280 quintal. District data regarding other crops show that production of maize and millets is done in 24341 hectare land with a yield of 456950 quintal whereas in surveyed blocks maize and millets were cultivated in 12216 hector land with 250560 quintals yield whereas pulses, condiment and oilseeds are cultivated in 31688 ha land with a yield of 1475230 quintal in surveyed blocks.

§2.3 Production of millet constitutes a miniscule percentage of total crop production in the district and information obtained from field (discussed in next chapter) suggests that most of millet production is done purely for household consumption. District level information obtained from the agriculture department indicates that total areas of millet cultivation amounts to 139 hector with a yield of 623.5 quintal. Banspal, Harichandanpur, and Telkoi are the dominant blocks where millets are found cultivated. Ragi (finger millets), Jawar (Sorghum), Bajra (Pearl Millets) and Suan (Little Millets) are the types of millets cultivated in the region as per information. Sorghum is found to be cultivated maximum in the district among all millets amounting to 63 hectors with a yield of 290 quintal. This millet is found cultivated in Banspal (40 hector with a yield of 190 quintal) and Harichandarpur (18 hectors with a yield of 80 quintals) blocks. Little millets is cultivated in 52 hectors of land with a yield of 190 quintal across the district mostly in Banspal block. Ragi is found to be the next most cultivated millets in the district covering 19 hectors land with a yield of 123.5 quintal in Banspal and Harichandanpur blocks. Pearl Millets was found cultivated only in Anandpur block (not covered under study) in 5 hectors of land with a yield of 20 quintals in the year 2017.

§3 Socio-Economic Profile:

§3.1 The profile of respondents on the basis of their demographic, social and economic status reveals the following information. Out of the total surveyed population, 51.1 per cent are male and 48.9 per cent are female. The poverty status of the respondents show that 97 per cent HH are below poverty line where as remaining 3 per cent are above poverty line. 82 per cent HHs are found living in kuchha house where as 11 per cent own semi pucca house and remaining 7 per cent reside in pucca houses. The occupational profile of the respondents suggests a great percentage of them being dependant groups consisting of elderly people or school going children not contributing to the work force. Whereas 17.0 per cent are engaged in agricultural activities, 13.1 per cent are agricultural or other labourers. 0.3 per cent run small business enterprises/, 1.4 per cent hold government services, 0.1 per cent are migrants, 27.9 per cent are school going children, 21.8 per cent are housewives, 3.2 per cent are engaged in other activities and remaining 13.6 per cent belong to elderly population.

§4 Field Insight

Interaction with respondents in the surveyed Blocks provides the following anecdotal evidences about perception of millet crop in the district.

- §4.1 Paddy is the main crop for the farmers engaged in agricultural activities in the district. farmers recall millet production in forest land a generation back in forms of mandia, jawar and suan/gurji in order to meet the food requirement during lean period. However, it has almost stopped since ten/fifteen years because of following reasons including i) constant animal attacks and imposition of new forest Act (Forest Rights Act 2005) restricting utilization of forest land for agricultural purpose; ii) government incentive for paddy cultivation and PDS introducing rice in accessible price that looks after the food requirement at HH level.
- §4.2 Facilitating agencies working for millet promotion admits to the following challenges faced while motivating farmers to introduce millet in their farmland. i) farmers' inhibition to adapt to a new crop; ii) convincing farmers to cultivate millet in agricultural land as they presume it as an upland crop; iii) processing millets is a tedious affair.
- §4.3 However, some farmers agree to cultivate millets in their farmland if government provides handholding support in terms of finance and other technical inputs. They also expect advanced processing unit to process millet citing traditional manual method of processing millets to be tedious. Marketing facilities for millets need to be available as previously millet was produced purely for HH consumption.

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ABBREVIATIONS

APL	Above Poverty Line
BPL	Below Poverty Line
CBO	Community Based Organisation
CRP	Community Resource Person
FGD	Focused Group Discussion
FPO	Farmer Producers Organization
ha	Hectare
HH(s)	Household(s)
ICDS	Integrated Child Development Scheme
LS	Line sowing
LT	Line Transplant
ITDA	Integrated Tribal Development Agency
MDM	Mid-Day Meal
MFP	Minor Forest Produce
MSP	Minimum Support Prices
NAL	Non Agricultural Labour
NCDS	Nabakrushna Choudhury Centre for Development Studies
NSSO	National Sample Survey Organization
OBC	Other Backward Classes
OMM	Odisha Millets Mission
PDS	Public Distribution System
PVT	Participatory Variety Trial
qtl	quintal
SC	Scheduled Caste
SRI	System of Rice Intensification
ST	Scheduled Tribe
WASSAN	Watershed Support Services and Activities Network

INTRODUCTION

1.1 Background

Keonjhar district has a huge potential for development of industries because it is rich in mineral resource and has vast deposit of iron, manganese and chrome ores. The district occupies a prominent place in the mineral deposit potential in the map of India. As a result of this, HHs of sizable numbers are engaged in mining work for their livelihood shifting their occupation from farm to non-farm work. However, agriculture remains the main source of livelihood in the district. To revive and improve agricultural production, the District Mineral Foundation (DMF) has taken up many initiatives in this regard.

One such intervention is the "Special Programme for Promotion of Millets in Tribal and Mining Areas of Keonjhar, Odisha (hereafter, Odisha Millets Mission, OMM)," which was started in Kharif 2019 in Keonjhar in seven blocks, namely, Sadar, Jhumpura, Banspal, Harichandanpur, Joda, Hatadihi, and Champua. Millets are small-seeded grains, which are now considered as nutri-cereals. Some of the millets cultivated in Keonjhar at the time of implementing OMM are *ragi* or finger millet, *gurji* or *suan* or little millet, and *kodo* millet, Sorghum or Gangai (Sorghum Bicolor).

OMM has a novel organisational architecture with joint partnership of the Government of Odisha with involvement of functionaries in the concerned departments at the state and the district levels, the State Secretariat comprising the Programme Secretariat and the Research Secretariat, and the Non-Governmental Organisations as facilitating agencies at the Block level. Under OMM, focus has been given to production (including the agronomical package of practices to be adopted by the farmer HHs), consumption, processing, and marketing of millets. This baseline survey is an attempt to provide necessary information on some aspects of these before the implementation of the programme. Before elucidating the details from the baseline survey, we now provide some information on the district profile of Keonjhar.

1.2 District Profile

The district Keonjhar is a tribal dominated district active with mining activities. It is surrounded by Angul and Dhenkanal districts in the south, Bhadrak and Balesore in the east, Deogarh and Sundergarh in the west and Mayurbhanj in North. The district has a total geographical area of 8303 sq. km, which constitutes 5.33 per cent of the State. It is located between 21.1N to 22.10 North Latitude to 85.11E to 86.22 East Longitude.

As compared to the state's average population density, Keonjhar District is found to be one of the lowly populated districts of Odisha. According to 2011 Census the average population density per sq. km area in Keonjhar district is 217, whereas it is 270 at the all Odisha level. The District was having a total population of 18,01,733 persons in 2011, out of which the rural population was 15,48,674 (86.0%) persons and urban population was only 2,53,059 (14.0%) persons. The sex ratio of population in the district was 988 females per 1000 males, as compared to 979 females at the all-Odisha level. The social composition of population in the district is as follows: SC (11.6%), ST (45.4%), others (33.0%). Thus, the composition of weaker/disadvantaged section population in the district is higher than the all-Odisha level, which is about 40% of the total (SC-17.1% and ST-22.8%).

The administrative headquarters of the Keonjhar District is located at Keonjhar town. The administrative setup of the district consist of three sub-division, thirteen tehsils and thirteen blocks, 287 Gram Panchayats, four municipalities and 25 Police Stations.

The climatic condition of Keonjhar District is much varied. The average annual rain fall of the district is 1487.7 mm (Odisha Agricultural Statics 2013-14, P1). However there is a great variation of rainfall year to year. The work participation rate of population in the district is 42.5 per cent, as compare to 41.8 per cent at the all Odisha level.

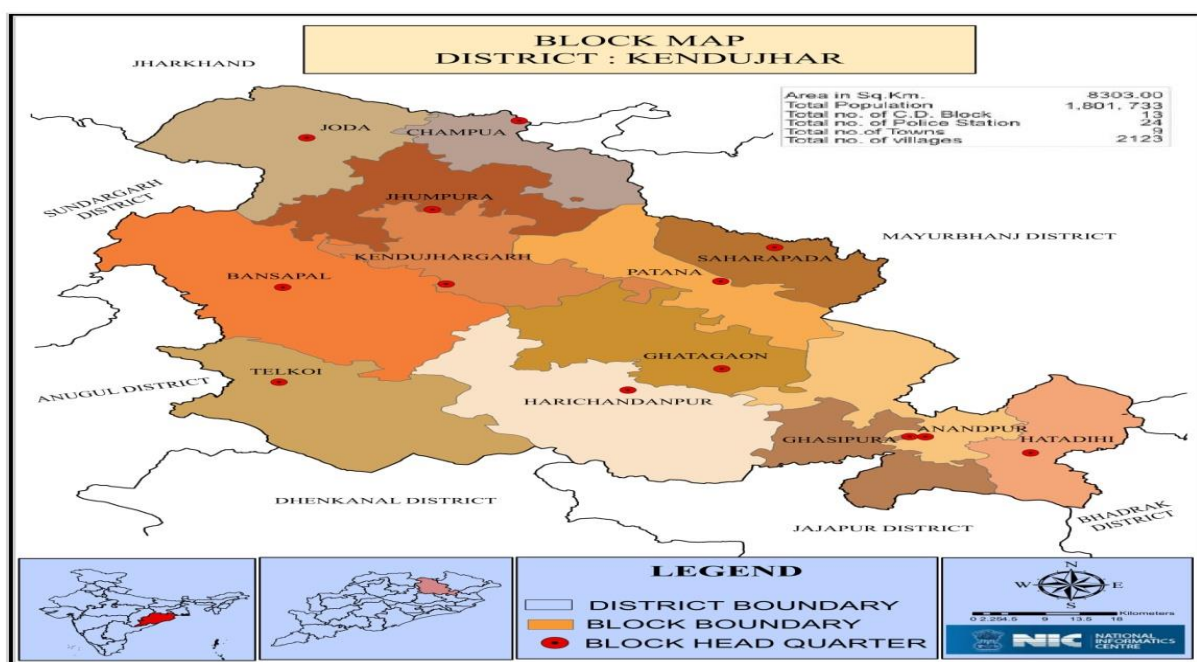


Table 1.1: Key Indicators of Kendujhar

Indicators	Value
Census 2011	
Population	1801733
Male	906487
Female	895246
Scheduled Caste	209357
Scheduled Tribe	818878
Others	773498
Household (HH)	403869
Average HH Size	4.20
Sex Ratio	988
Total Worker	766514
Main Worker	442497
Marginal Worker	324017
Non-Worker	1035219
Work Participation Rate (WPR, %)	47.7
Cultivator as % of Total Worker	25.48
Agricultural Labourers as % of Total Worker	40.45

Literacy Rate (%)	68.24
Total Geographical Area (sq.km)	8303
Land Use Pattern (Area in '000 ha), 2014-15	
Forest	310
Land put to Non-agricultural use	77
Barren and Non-Cultivable Land	93
Permanent Pasture and Other Agricultural Land	20
Net Area Sown	245
Cultivable Waste Land	26
Old Fallow	0
Current Fallows	53
Miscellaneous Trees and Groves	6
Total Area under Survey	580.4
Agriculture, 2014-15	
Average Fertilizer Consumption (kg/ha)	54.5
Irrigation, Kharif('000 ha)	146.9
Irrigation, Rabi ('000 ha)	111.3
Other Information	
Proportion of Villages Electrified (as on March 2014)	100.0
Credit Deposit Ratio (as on December 2015)	68.1
No.ofAanganwadi Centres, 2014-15	2185
No.of Job Card Issued (cumulative, March 2015)	301865
HH provided employment as % of demand, MGNREGS, cumulative 2014-15	81.9

Source: *District Statistical Hand Book, Keonjhar, 2015*

Note: MGNREGS is Mahatma Gandhi National Rural Employment Guarantee Scheme

As per 2011 Census, the schedule caste (SC) population is 11.6 per cent and schedule tribe (ST) population is 45.4 per cent, Table 2.1. There are 36 communities from among SCs and 25 communities from among STs in the district. Among the STs, 12 tribal communities consisting of Juangs, Bhuyan, Bhatudi, Bhumij, Gond, Ho, Kisan, Kora, Munda, Oraon, Santala, Saunti, and Binjhal(mentioned in a descending order as per their share in the tribal population of the district and each of them having more than 1000 persons in the district) constitute more than 98 per cent of the total tribal population of the district. The literacy rate

of the district is 59.2 per cent as against 72.9 per cent of the state. The languages spoken by the people of this district are Odia, Telugu, Hindi, English, and different tribal languages.

The characteristics of soil in the district is as follows: 54 per cent of clay and sandy loams soil, 32 per cent red soil and 14 per cent black soil (*District Human Development Report: Keonjhar*, Planning and Coordination Department, Government of Odisha, 2012, p.8). Land under cultivation in the district may be classified as: (a) *Guda* lands (unbounded low fertile rainfed uplands), (b) *Nali* lands (medium lands with average fertility), (d) *Beda* lands (plain fertile land suitable for paddy cultivation), (e) *Taila* lands (lands in hill slopes occasionally used for slash and burn/shifting cultivation or *podu*, and (f) *badi* lands (adjacent to homesteads, generally used for growing kitchen gardens). From these, millets can be grown in Taila, Guda and Nali lands.

1.3 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

1.4 Methodology

1.4.1 Universe

All the HHs who are covered under OMM, as per the list provided by Programme Secretariat, formed the universe. Along with the 283 HHs covered under the programme, 320 HHs have been surveyed that include non-programme participants. From these, no HHs had cultivated millets in 2017-18, that is, in the year before the intervention under OMM. Out of total 320 HHs surveyed, 80 HHs (25 %) are from Sadar block, 80 HHs (25 %) are from Jhumpura block, 80 HHs (25%) are from Banspal block, and 80 HHs (25 %) are from Harichandanpur block.

Table 1.2: Households Surveyed in Kendujhar

Block	Participant HHs		Surveyed HHs		HHs Cultivated Millets in 2018-19		HHs did not Cultivate Millets in 2018-19	
	No	%	No	%	No	%	No	%
Sadar	79	27.9	80	25.0	36	25.7	44	24.4
Jhumpura	76	26.8	80	25.0	23	16.4	57	31.6
Banspal	87	30.7	80	25.0	41	29.2	39	21.6
Harichandanpur	41	14.4	80	25.0	40	28.5	40	22.2
Total	283	100	320	100	140	100	180	100

Source: Field Survey

Note: HHs denotes households

Data Collection

This baseline survey report is based on both secondary and primary data. The primary data was collected from the respondents in the concerned districts by using pre-tested interview schedule (Annexure 1) and focus group discussion (Annexure 2). The secondary data has been collected from different published and unpublished sources.

1.5 Limitations

Inclusion of non-programme participants in the sample is due to logistic constraints.

As some of the information was based on memory, there could be some recall error. This is particularly so for actual income, expenditure, occupational status among others.

1.6 Chapterization

The baseline survey has been divided into four chapters including the current introductory chapter, which provided district profile, objectives, methodology and limitations. Chapter II provides a desk review of literature of the agricultural activities in the district with special focus on status of millet cultivation in the studied block. Chapter III analyses the primary data and sketch a broad picture of the socio economic profile of the sample HH along with a summary of information regarding status of millet cultivation in the studied blocks extracted from engaging conversation with the community. Chapter IV summarizes the major findings.

STATUS OF AGRICULTURAL ACTIVITIES IN KEONJHAR DISTRICT: A DESK REVIEW OF LITERATURE

2.1 Introduction

Keonjhar is known for being a mining district and a gradual shift of working force to mining work is noticed. However, agriculture remains the predominant occupation in the district and about three fourth of the working force is engaged in agricultural and allied activities. Thus, a need to strengthen the agricultural base in the district to accelerate rural development is essential.

2.2 Land Use Pattern:

Land is the most important factor for the development of the economy in general and agriculture in particular. The economic development and more particularly rural development of the district largely depend upon effective utilization of land resources. The significance of land availability lies in its income generating potential as well.

Table 2.1 projects land utilisation pattern in Keonjhar district. The total geographical areas of the district spreads over 831000 hector in the year 2017. The surveyed four blocks occupy 44.07 per cent of the total geographical areas. Similarly barren uncultivable land is estimated to be 11.26 per cent at district level and in surveyed blocks it is 18.50 per cent. Forest land of the district remains 37.38 per cent of the total geographical areas where as 43.34 per cent is estimated at surveyed blocks level. Also, as per information provided in the table, total current fallow land of the district is 2.39 per cent and of surveyed blocks is 1.87 per cent. The other fallow land of the district shares 0.42 per cent and 0.33 per cent land in surveyed blocks; land put to non-agricultural use is estimated to be 9.22 per cent at district level an in surveyed blocks it is estimated to be occupying 7.09 per cent. Permanent pasture land of the district occupies 2.36 per cent and the surveyed blocks have 1.67 per cent. The cultural waste land of the district covers 3.19 per cent whereas the surveyed blocks have 0.95 per cent of land from total geographical area of the above said blocks.

The land utilisation data shows that a substantial portion of land is utilized for forest and non-agricultural uses, or is barren, grazing, or cultural waste land. Percentage of cultivable land is small in size (i.e. 33.03 per cent at district level and 25.52 per cent at

surveyed blocks level) and agriculture is rain fed in most part of the district, it has an adverse impact on the productivity and yield of the crops.

Table 2.1: Survey block Land utilisation pattern

Block	District	Banspal	H.C.Pur	Jhumpura	Sadar	Total
Geographical Area	831000	163784	89771	56657	56073	366285
Forest	310672	83589	45402	16706	13069	158766
Misc. tree crops & grooves	6000	941	917	383	401	2642
Permanent Pastures & other grazing land	19631	1303	1809	1381	1653	6146
Cultural waste land	26522	2075	1180	233	0	3488
Land put to non-agricultural uses	76688	5115	6743	7679	6359	25896
Barren uncultivable land	93614	54941	7720	3916	1207	67784
Current fallow	19880	1013	561	1742	3550	6866
Other fallow	3508	179	99	307	626	1211
Net area sown	274485	14628	25340	24310	29208	93486

* Misc. tree crops & grooves not included in net area sown

2.3 Cropping Pattern:

Cropping pattern has a significant role in influencing agricultural productivity leading to economic development in an agrarian society. Keeping the climatic condition and consumption pattern in perspective partly influenced by government schemes, Keonjhar has traditionally come to establish itself as a paddy growing district. Besides, other crops which are grown in the locality include wheat, maize, ragi, green gram, sugar cane, ground nut and mustard oil. However, productivity of these crops is quite low owing to various factors including climatic condition, soil fertility, lack of irrigation facility. It is estimated that per hectare productivity of paddy in the district is 21.4 quintals. Table 2.2 revealed that paddy is the main crop grown in the district as well as in the surveyed blocks. Paddy is cultivated in 53572 hector of land out of district's total land worth 168219 hector.

The production of paddy in the district is 3516340 quintal while in the surveyed blocks production is 1331280 quintal. District data regarding areas cultivation and production of Maize and millets is 24341 hectare land and production is 456950 quintal whereas in surveyed blocks maize and millets were cultivated in 12216 hector land and yield is 250560

quintals., pulses, condiment and oilseeds are cultivated in 31688 ha land with a yield of 1475230 quintal in surveyed blocks.

Table 2.2: Block and Crop wise Area Production of Keonjhar district

Block		District	Banspal	Harichandanpur	Jhumpura	Sadar	Total
Paddy	Area (ha)	168219	3965	12805	18555	18247	53572
	Production (qtl)	3516340	54270	292900	473190	510920	1331280
Pulses	Area (ha)	27984	815	1565	1738	2886	7004
	Production (qtl)	141080	4610	9080	8770	22530	44990
Vegetable	Area (ha)	36330	587	6621	1056	6621	14885
	Production (qtl)	3390740	47290	614000	95920	614000	1371210
Maize & Millets	Area (ha)	24341	4770	2934	2372	2140	12216
	Production (qtl)	456950	104320	43330	50670	52240	250560
Oilseed	Area (ha)	18608	4030	3186	864	145	8225
	Production (qtl)	66240	12930	8520	5590	1200	28240
Condiment	Area (ha)	3908	496	405	270	403	1574
	Production (qtl)	71030	11630	8310	4600	6250	30790

Source: District agriculture office, Kendujhar

2.4 Millets Cultivation in the District

Keonjhar district constitutes of predominantly tribal population and millets is known to be a traditionally a significant part of their daily diet. Millet cultivation has been practised from a primitive age in the district. However, modern government schemes and programmes and changed consumption pattern has adversely impacted millets cultivation in these areas, some pockets of the district witness millet cultivation.

Noticing decreasing cultivation and consumption of millets, which has come to be recognized as a potential nutri cereal, Odisha Millets Mission attempts to revive millets in farms and on plates of the people of the district in collaboration with District Mineral Fund, However, a brief sketch of the status of millet production at the district level in general and at surveyed blocks level in particular may be drawn analysing the information provided in Table 2.3.

District level information obtained from the agriculture department indicates that total areas of millet cultivation amounts to 139 hector with a yield of 623.5 quintal. Banspal, Harichandanpur, and Telkoi are the dominant blocks where millets are found cultivated.

Ragi (finger millets), Jawar (Sorghum), Bajra (Pearl Millets) and Suan (Little Millets) are the types of millets cultivated in the region as per information. Sorghum is found to be cultivated maximum in the district among all millets amounting to 63 hectares with a yield of 290 quintal. This millet is found cultivated in Banspal (40 hectares with a yield of 190 quintal) and Harichandarpur (18 hectares with a yield of 80 quintals) blocks. Little millets is cultivated in 52 hectares of land with a yield of 190 quintal across the district mostly in Banspal block. Ragi is found to be the next most cultivated millets in the district covering 19 hectares land with a yield of 123.5 quintal in Banspal and Harichandanpur blocks. Pearl Millets was found cultivated only in Anandpur block (not covered under study) in 5 hectares of land with a yield of 20 quintals in the year 2017.

It may be noted that production of millet constitutes a miniscule percentage of total crop production in the district and information obtained from field (discussed in next chapter) suggests that most of millet production is done purely for household consumption.

Table 2.3: Block wise millets Production of Kendujhar

Block			District	Banspal	H.C.Pur	Jhumpura	Sadar	Total
Area and Production of Millets	Jowar (Sorghum)	Area (ha)	63	40	18	0	0	58
		Production (qtl)	290	190	80	0	0	270
	Bajra (Pearl Millets)	Area (ha)	5	0	0	0	0	0
		Production (qtl)	20	0	0	0	0	0
	Ragi (Finger Millets)	Area (ha)	19	5	5	0	0	10
		Production (qtl)	123.5	30	30	0	0	60
	Suan (Little Millets)	Area (ha)	52	12	3	0	0	15
		Production (qtl)	190	40	10	0	0	50

Source: District agriculture office, Kendujhar

Conclusion:

This chapter discusses in broad details the land utilization of Keonjhar district, cropping patterns and millet cultivation status borrowing information from secondary sources. Information obtained from Agriculture Department, Keonjhar district indicate presence of millet cultivation in some pockets of the district, though in miniscule quantity in comparison with the main crop paddy. Millet, though traditionally a household diet is losing its previous status especially in the DMF blocks covered by OMM. Next chapter provides the socio economic profile of the surveyed blocks and factors contributing declining millet cultivation and consumption in the said areas on the basis of primary information obtained from the field.

SOCIO ECONOMIC PROFILE AND STATUS OF MILLET CULTIVATION OF THE SURVEYED HOUSEHOLDS

3.1 Introduction

Socio economic profile of HHs surveyed is discussed in this chapter along with status of millet cultivation in the said area. Socio economic profile includes social and demographic profile, poverty status, economic activities, structure of house, distribution by social group and religion and 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.

Also, on the basis of inputs gathered from interaction and interview with respondents, the chapter provides present status of millet cultivation in the study area explaining factors responsible for absence of millet cultivation in the study area.

3.2 Social and Demographic Profile

Out of OMM intervention earmarked seven blocks in Keonjhar district, OMM is presently implemented in four blocks, namely Sadar, Banspal, Jhumpura and Harichandanpur. It shows that total surveyed HHs are 322 out of which 255 HHs (79.2%) are ST, 65 HHs (20.2%) are SEBC and only two (0.6%) are SC which is shown in Table 3.1. It is observed that these four blocks are tribal dominated area.

Table 3.1: Distribution of Households by Social Groups across Blocks

Block	SC		SEBC		ST		Total	
	No	%	No	%	No	%	No	%
Banspal	1	1.3	3	3.8	76	95.0	80	100.0
Harichandanpur	0	0.0	4	4.9	78	95.1	82	100.0
Jhumpura	1	1.3	46	57.5	33	41.3	80	100.0
Sadar	0	0.0	12	15.0	68	85.0	80	100.0
Total	2	0.6	65	20.2	255	79.2	322	100.0

Table 3.2 shows the total population from surveyed HHs which is 1471 in number. Data suggests that male population is slightly higher than female population. From the total population from surveyed HHs, 752 are male respondents whereas 791 are female respondents.

Table 3.2: Distribution of Population by Gender across blocks

Block	Male		Female		Total	
	No	%	No	%	No	%
Banspal	195	49.1	202	50.9	397	100
Harichandanpur	162	48.2	174	51.8	336	100
Jhumpura	176	51.0	169	49.0	345	100
Sadar	219	55.7	174	44.3	393	100
Total	752	51.1	719	48.9	1471	100

The religion status of all the surveyed HHs indicate that the entire population belong to Hindu community (100 percent) and No one from other religious categories were recorded (Table 3.3).

Table 3.3: Distribution of households by Religion across blocks

Blocks	Christian		Hindu		Others		Total	
	No	%	No	%	No	%	No	%
Banspal	0	0	80	100	0	0	80	100
Harichandanpur	0	0	82	100	0	0	82	100
Jhumpura	0	0	80	100	0	0	80	100
Sadar	0	0	80	100	0	0	80	100
Total	0	0	322	100	0	0	322	100

3.3 Poverty Status

Fig 3.1 and Table 3.4 depict poverty status of farmers across the blocks. It clarifies that all the farmers from the Sadar (100%), Banspal (100%), Harichandanpur(100%) , and 88.9 per cent from Jhumpura blocks comes under BPL category and remaining 11.3% Jhumpura are above the poverty line(APL) .

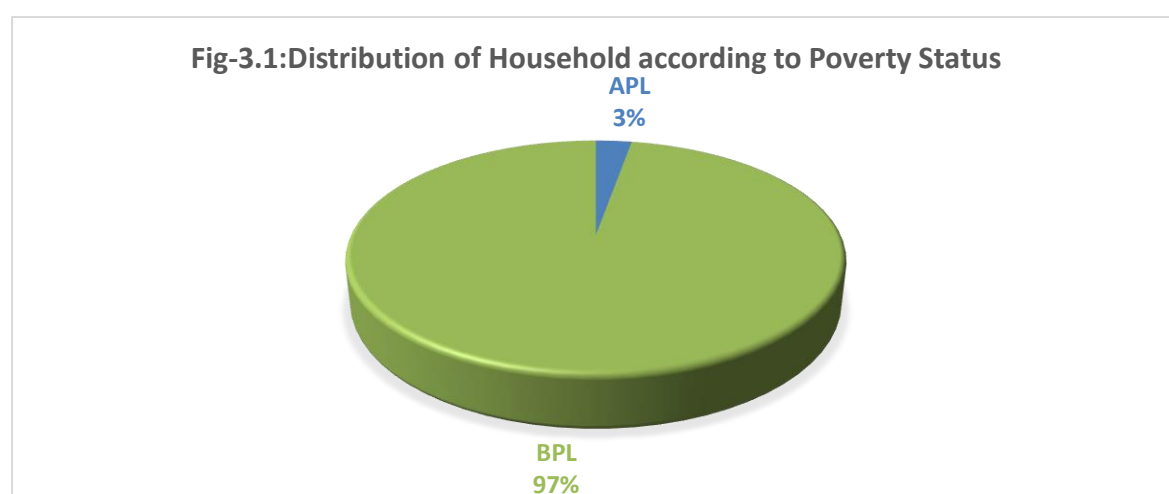


Table 3.4: Distribution of Households by Poverty status across blocks

Blocks	BPL		APL		Total	
	No	%	No	%	No	%
Banspal	80	100	0	0	80	100
Harichandanpur	82	100	0	0	82	100
Jhumpura	71	88.8	9	11.3	80	100
Sadar	80	100	0	0	80	100
Total	313	97.2	9	11.3	322	100

3.4 Economic Activities

Table 3.5 provides a detailed picture of the economic activities undertaken by HHs in the studied blocks. Agriculture remains the main economic activities in the district with 94.7 per cent HHs engaged in the above said activity. However, HHs engaged in other economic activities include forest (0.3%), agricultural labour (30.4%), salaried class (12.7%), pension (11.8%), remittance (14.6%), livestock (13.0%), others (59.0%) and 0.9 per cent not engaged in any economic activities. there may be slight variation observed from block to block. It may be clarified further that these economic activities may be overlapping with each other as most of the farmers engage themselves in other economic activities during lean period to assist livelihood requirements.

Table 3.5: Distribution of Households by Economic Activities across blocks

Economic activities	Banspal		Harichandanpur		Jhumpura		Sadar		Total	
	No.	%	No.	%	No.	%	No	%	No	%
Agriculture	80	100.0	79	96.3	70	87.5	76	95.0	305	94.7
Forest	0	0.0	0	0.0	0	0.0	1	1.3	1	0.3
Ag. Labour	46	57.5	21	25.6	12	15.0	19	23.8	98	30.4
Salary	5	6.3	1	1.2	32	40.0	3	3.8	41	12.7
Pension	10	12.5	11	13.4	4	5.0	13	16.3	38	11.8
Remittance	0	0.0	32	39.0	8	10.0	7	8.8	47	14.6
Livestock	14	17.5	17	20.7	3	3.8	8	10.0	42	13.0
Others	65	81.3	47	57.3	18	22.5	60	75.0	190	59.0
No work	0	0.0	2	2.4	0	0.0	1	1.3	3	0.9
Grand total	80	100.0	82	100.0	80	100.0	80	100.0	322	100.0

3.5 Structure of House

Dwelling characteristic of a HH speaks a great deal about their socio economic status. Table - 3.6 and Fig 3.2 provides information regarding the structure of house of the HHs surveyed for under base line study. Data suggests that where as majority of HHs(82%) dwells in kuchha houses, 11 per cent reside in semi pucca houses and 7 per cent reside in pucca houses in slightly better living condition.

Fig-3.2 : Distribution of HHs by house structure

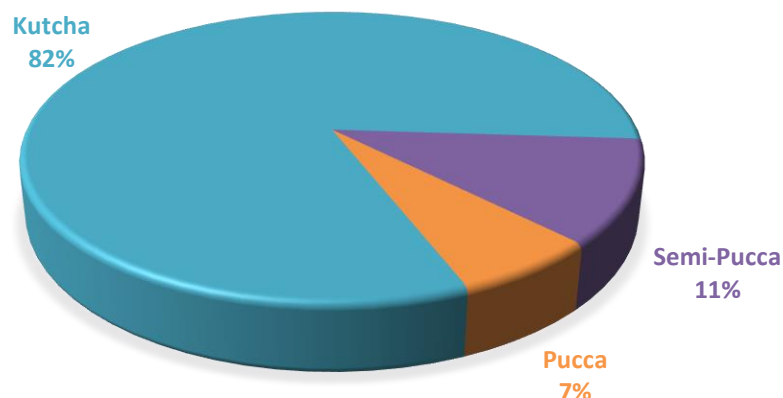


Table 3.6: Distribution of Households by Structure of House across blocks

Blocks	Pucca		Kutcha		Semi-Pucca		Total	
	No	%	No	%	No	%	No	%
Banspal	0	0.0	78	97.5	2	2.5	80	100.0
Harichandanpur	0	0.0	82	100.0	0	0.0	82	100.0
Jhumpura	19	23.8	34	42.5	27	33.8	80	100.0
Sadar	2	2.5	70	87.5	8	10.0	80	100.0
Total	21	6.5	264	82.0	37	11.5	322	100.0

3.6 Occupational Status:

Table 3.7 provides a detailed view of the occupational status of all household members covered under the study. Though most of the respondents are found engaged in agricultural activities, percentage share also includes children, women involved in household chores and unemployed members of the family that include all 1471 individuals. Specifically speaking, 17.0 per cent individuals are engaged in agricultural activities, 13.1 per cent work as agricultural or other labourers, 0.3 per cent run small business enterprises, 1.4 per cent are engaged in government services, 1.4 per cent are service providers, 0.1 per cent are in private services, 0.1 per cent are migrants, 27.9 per cent are school going children, 21.8 per cent are housewives, 3.2 per cent are engaged in other activities and 13.6 per cent are elderly people or are not doing any kind of activities involving income.

Table 3.7: Distribution of members of Households by occupational status across blocks

Occupation	Banspal		Harichandanpur		Jhumpura		Sadar		Total	
	No.	%	No.	%	No.	%	No	%	No.	%
Agriculture	79	19.9	56	16.7	54	15.7	61	15.5	250	17.0
Labour	47	11.8	61	18.2	19	5.5	66	16.8	193	13.1
Business	0	0.0	0	0.0	3	0.9	2	0.5	5	0.3
Govt. service	5	1.3	0	0.0	11	3.2	4	1.0	20	1.4
service provider	0	0.0	0	0.0	21	6.1	0	0.0	21	1.4
Private service	0	0.0	0	0.0	2	0.6	0	0.0	2	0.1
Migrants	0	0.0	0	0.0	0	0.0	1	0.3	1	0.1
Student	107	27.0	112	33.3	78	22.6	114	29.0	411	27.9
Housewife	83	20.9	57	17.0	86	24.9	95	24.2	321	21.8
Other	11	2.8	6	1.8	18	5.2	12	3.1	47	3.2
Unemployed	65	16.4	44	13.1	53	15.4	38	9.7	200	13.6
Grand total	397	100.0	336	100.0	345	100.0	393	100.0	1471	100.0

3.9 Conclusion

The above information attempts to furnish socio economic profile of the respondents covered under Base Line Study. However, it may be noted at the outset that the areas under study does not provide any evidence of millet cultivation or consumption, though secondary data provides statistical evidence of millet cultivation in those blocks. It may be clarified that the areas under study are mining affected areas earmarked by DMF where most of the farmers are small land holder farmers and produce crops for their own consumption. They mostly grow paddy, which is their main diet, in their farmland during kharriif season. Millet, though traditionally grown in the area, is a forgotten crop now. OMM intervention may face the challenge of reintroducing the crop to the farmers as well as the consumers in the areas. Engaging conversation with respondents in the sample area provide following information regarding millet cultivation and consumption, which may be used as reference points for OMM to design intervention process for this particular district.

BASELINE INFORMATION ON STATUS OF MILLET CROP IN THE DISTRICT: FIELD INSIGHT

4.1 Introduction

Information obtained from engaging interaction with villagers agrees that rice is the main diet consumed two/three times a day along with vegetables or dal. Instances of millet production, though scarce, are evident in neighbouring villages. However, it does not impact the consumption pattern of the respondents as the former produce it for their HH consumption and it is generally not marketed. Following are some of the anecdotes received from the community collected through FGDs conducted by the researchers.

4.2 *Uparkusumita village, Sadar Block:* drawing instances from fifteen years back, some respondents recalled that millets in forms of mandia (finger millets), Jowar (Sorghum), Gurji/Suan (little millets) and Kangu (pearl millets) were cultivated by the community along with short duration paddy and variety of pulses through shifting cultivation using forest land. However, introduction of Forest Rights Act (FRA) imposed restriction on use of forest lands, which was the major factors contributing community's withdrawal from forest land cultivation. Also, some sections of new generation gradually moved from agricultural activities to mining works as later provided assured income impacting pattern of agricultural activities to an extent. Thirdly, new generation's exposure to modern life style influenced their consumption pattern and they moved away from millet products as poor men's diet.

4.3 *Uchhumadihi village, Banspal block:* Respondents pointed out that previously millet was cultivated in forest land which stopped after imposition of Forest Rights Act and constant animal attack on the crops. However, the idea of cultivating millets in agricultural land never occurred to them. Additionally government schemes and programmes supported paddy cultivation and easy availability of rice through PDS looks after their daily diet, thus, the need to have another crop during lean period is no more felt. It may be noted that millets was cultivated mostly to fulfil food requirement during lean period in the past.

4.4 *Baliposi village, Jhumpura Block:* New generation did not recall any association with millets from their production and consumption experience. Some respondents from older generation did acknowledge existence of millet in their agricultural landscape in the past. However, they also recalled that processing of millets was a tedious affair. Now, with modern method of paddy processing, it is unlikely villagers would adopt millet cultivation without

proper processing facilities. They also recalled that millet was cultivated in forest land for HH consumption and there was no proper marketing strategy to increase outreach other than village markets where some farmers would sell it occasionally. In the new era of government procuring paddy in appropriate price, it is unlikely people will revert back to traditional method of millet production without any scope for marketing.

4.5 *Rugudipanga village, Harichandanpur:* There is a major shift of livelihood pattern from agriculture to mining work. Though, they used to cultivate millets in forest lands (agricultural activities majorly depended on forest land), now the shift to mining work with assured income return has brought about major changes in their consumption pattern and younger generation do not consume millet any more.

However, it may also be highlighted that some farmers showed willingness to revert back to millet cultivation if appropriate handholding support is provided from the government including supply of quality seeds, subsidies in pesticides and manures and modern processing facilities. There is awareness in some quarters about the health benefit of millets in some quarters as they mentioned it is effective in curing weakness, dehydration, diabetes, kidney problems.

Excerpts from field note of a researcher¹ from Cambridge University studying the impact of OMM in reviving millet cultivation in the district also provide some additional information on the subject. Insisting that mandia is a forgotten crop in some of the blocks under study, Rekha suggests that state government may face challenge to reintroduce the crop in the area as there is no recall evidence of millet consumption among the new generation in the district.

Her engaging interaction with the facilitating agencies working towards promoting millet in the surveyed blocks of the district throws some light on the challenges faced by the agencies while encouraging farmers to divert their attention from paddy cultivation. Firstly, millet comes across as a new crop for the farmers in the locality. Secondly, farmers consider millets as an upland crop and have their doubts about cultivating it in plain agricultural lands. Thirdly, lack of irrigation facilities during Rabi season also prevents farmers from considering millet cultivation as Rabi crop. It may be noted that most of the lands in the district remain barren during Rabi season because of the above mentioned reason. Also,

¹ Rekha Bhangaokar is a post doctoral fellow from Cambridge University, UK. The excerpts are drawn from her field note of her on going work on impact of OMM in millet cultivation in Odisha state. (17/03/2020)

evidence of consumption of millets is very rare in the locality and younger generation has no exposure to millet based diet.

Following table (Table-4.1) is the unedited information provided by the researcher as input to be added to the study.

Table 4.1: Blocks and Facilitating Agencies

Name of Facilitating Agency	Name of Programme block	Particular challenge faced by the org in implementation of OMM
KIRDTI	Harichandanpur	Millets is a new crop in the region
SGF	Jumpura	Kharif 2018 had poor rainfall at the start of the year, when farmers where convinced, it was late. Production was poor and the procurement was late. New crop.
KIRDTI	Banspal	Millets are upland crops and not suitable for the plains. Much of the land in Banspal is under forest land.
IDA	Sadar	Lack of irrigation in Rabi; lift irrigation projects implemented by DMF don't function well.
Tadasha	Hatadihi	Farmers are unaware of millets being a grain. They are also not aware of the ways to consume it.
SGF	Joda	Mining based occupation; Elephant menace
SHRISTI	Champua	New-generation does not know about mandia; irrigation facilities don't work well in this region

4.6 Conclusion: This chapter provides a detailed picture of the socio economic profile of the respondents. It also attempts to justify the factors contributing to extinction of millet cultivation in the studied area and the change in consumption pattern impacting the same drawing insight from engaging conversation with the community. Next chapter summarizes the major findings of the study.

MAJOR FINDINGS

5.1 A substantial portion of land in Keonjhar district is utilized for forest and non-agricultural uses, or is barren, grazing, or cultural waste land. Percentage of cultivable land is small in size (i.e. 33.03 per cent at district level and 25.52 per cent at surveyed blocks level) and agriculture is rain fed in most part of the district, it has an adverse impact on the productivity and yield of the crops.

5.2 Keonjhar has traditionally come to establish itself as a paddy growing district. Besides, other crops which are grown in the locality include wheat, maize, ragi, green gram, sugar cane, ground nut and mustard oil. However, productivity of these crops is quite low owing to various factors including climatic condition, soil fertility, lack of irrigation facility. It is estimated that per hectare productivity of paddy in the district is 21.4 quintals. Paddy is cultivated in 53572 hector of land out of district's total land worth 168219 hector.

5.3 Production of millet constitutes a miniscule percentage of total crop production in the district and most of millet production is done purely for household consumption. Total areas of millet cultivation amounts to 139 hector with a yield of 623.5 quintal. Banspal, Harichandanpur, and Telkoi are the dominant blocks where millets are found cultivated. Ragi (finger millets), Jawar (Sorghum), Bajra (Pearl Millets) and Suan (Little Millets) are the types of millets cultivated in the region as per information. Sorghum is found to be cultivated maximum in the district among all millets amounting to 63 hectares with a yield of 290 quintal. This millet is found cultivated in Banspal (40 hector with a yield of 190 quintal) and Harichandarpur (18 hectares with a yield of 80 quintals) blocks. Little millets is cultivated in 52 hectares of land with a yield of 190 quintal across the district mostly in Banspal block. Ragi is found to be the next most cultivated millets in the district covering 19 hectares land with a yield of 123.5 quintal in Banspal and Harichandanpur blocks. Pearl Millets was found cultivated only in Anandpur block (not covered under study) in 5 hectares of land with a yield of 20 quintals in the year 2017.

5.4 Farmers recall millet production in forest land a generation back in forms of mandia, jawar and suan/gurji in order to meet the food requirement during lean period. However, it has almost stopped since ten/fifteen years because of following reasons including i) constant animal attacks and imposition of new forest Act (Forest Rights Act 2005) restricting utilization of forest land for agricultural purpose; ii) government incentive for paddy

cultivation and PDS introducing rice in accessible price that looks after the food requirement at HH level.

5.5 Facilitating agencies working for millet promotion admits to the following challenges faced while motivating farmers to introduce millet in their farmland. i) farmers' inhibition to adapt to a new crop; ii) convincing farmers to cultivate millet in agricultural land as they presume it as an upland crop; iii) processing millets is a tedious affair.

5.6 Farmers agree to cultivate millets in their farmland if government provides handholding support in terms of finance and other technical inputs. They also expect advanced processing unit to process millet citing traditional manual method of processing millets to be tedious. Marketing facilities for millets need to be available as previously millet was produced purely for HH consumption.

ANNEXURE I



HOUSEHOLD SCHEDULE ON SPECIAL PROGRAMME FOR PROMOTION OF MILLETS IN TRIBAL AREAS OF ODISHA

Nabakrushna Choudhury Centre for Development Studies, Odisha, Bhubaneswar-
751013

1. Identification of the HHs

- a. Name of the (i) Village _____
(ii) Gram Panchayat: _____
(iii) Block: _____
(iv) District: _____
- b. Category i) SC ii) ST iii) OBC iv) SEBC v) Others (Specify)
- c. Sub-caste/ Sub-tribe: _____
- d. Religion i) Hindu ii) Muslim iii) Christian iv) Animism v) Others
- e. Category of HH: BPL/APL
- f. House structure: Pucca/Kutcha/Semi-Pucca

2. Are you indebted? Yes/ No. If yes, what is the amount: Rs. _____

3. Land Details (last year, Acre) i) Owned _____, ii) leased in _____
iii) Leased out _____ iv) Encroached _____
v) FRA _____ v) Other _____
vi) Cultivable Land _____

4. Total irrigated land owned (last year, Acre): _____

5. Cropping systems i) Mono ii) Mixed [specify the crop(s)] _____
iii) Inter cropping [specify the crop(s)] _____

6. Seed (last year) i) Quantity of seed used (in kg): _____
ii) Is it the quantity adequate? (Yes/No)
iii) Seed Treatment (Yes/No)
iv) Seed quality: Good/Average/Bad

7. Package of practices for millets (Last Year, put tick mark)

- i)Germination test: Yes/No
- ii)Weeding: Weeder/Manual/Both
- iii)Number of weeding: 1/2/3/4
- iv)Application of Fertiliser: Organic/Chemical/Both
- v)Application of Pesticides: Organic/Chemical/Both

8. Production and Utilization of Millets (2017-18)

Type of Millet	Total Production (qtl.)	Family consumption (qtl)	Kept for Seed (qtl)	Marketed (qtl)	Selling Price (Rs/qtl)
Mandia					
Suan					
Kangu					
Gurji					
Any other (Specify)					

9. Season-wiseAverage Requirment/Consumption (in kg)

Season	Summer	Winter	Rainy
Requirment			
Consumption			

10. Time of consumption: Breakfast/Lunch/Evening snacks/Dinner
11. Whether Purchased: Yes/No
12. Whether received from friends/relatives: Yes/No
13. Processing millets: Manually/ Machine/ Both
14. If by machine, is it your own machine: Yes/No
15. Food items prepared: i) Jau ii) Tampo iii) Pitha iv) Mandis Torani v) Handia v) Others
16. Sale of millets/Distance: a) Mill _____ b) Middle-man/Local trader _____
 d) Market _____ e) Money lender _____
 f) Any Other (Specify) _____

17: Household Particulars

Sl. No.	Name - start with Respondent of the HH	Relationship with HH (Use Code)	Marital Status	Sex M-1 F-2	Age	Education (Use Code)	Occupation/Income (Use Code)			Millet Based Activities (Use Code)
							Main	Sub-sidiary	Avg. annual income	

Note: 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-Grand-son, 12- Grand-daughter, 13- Father-in-law, 14-Mother-in-law, 15-(Specify)

Marital Status: 1- Married, 2- Unmarried, 3- Widow, 4- Widower, 5- Divorced, 6- Separated, 7- (Specify)

Education: 1-Illiterate, 2-Just literate, 3-Upto Class 5, 4-Class 6-10, 5-Higher Secondary, 6- Graduate, 7- Post Graduate, 8- Technical (Diploma), 9- Technical (Degree), 10-Professional/Management, 11-Other (Specify)

Occupation: 1- Agriculture, 2- Daily labour/ Wage labour, 3- Business/ Entrepreneurship, 4- Government Servant, 5- Private service, 6-Migrants,7- Artisans, 8-Service Provider,9- MFP collection, 10-Student, 11-Housewife, 12-Other (Specify)

Millet Based Activities: 1=Production, 2=Consumption, 3= Processing, 4= Marketing

18: Crop-wise and Method-wise Details of Production (Last Year i.e. June 2017-May 2018):

(Area in Acre, Production in Quintal)

Sl.No	Name of the Crop	SMI		Line Transplanting		Line Sowing		Broadcasting		Any other (Specify)	
		A	P	A	P	A	P	A	P	A	P
Kharif											
1	Mandia										
2	Suan										
3	Kangu										
4	Koda										
5	Gurji										
6	Jawar										
7	Bajra										
8	Any oth (Specify)										
Rabi	(Take details as in Kharif)										

Note: A stands for Area and P stands for Production(Use additional sheets for Rabi)

19: Expenditure pattern

Sl.No	Sources	Annual Expenditure (In Rs)
1	Food	
2	Clothes	
3	Education	
4	Medicine	
5	Social Function	
6	Marriage & Ceremony	
7	Agriculture	
8	Construction	
9	Durable Assets	
10	Others	

20: Sources of Income

Sl.No	Sources	Annual Income (In Rs.)
1	Agriculture	
2	Millets	
3	Horticulture	
4	Forest	
5	Ag.Labour	
6	Salary	
7	Pension	
8	Remittance	
9	Livestock	
10	Others (Specify)	

Remarks:

Signature of the investigator

ANNEXTURE II

Phase 2 Base line Study

Focused group discussion

Date:
Name of the Village:
Name of the Block:
Name of the District:
Stratification: Ethnicity/caste/genger
Sex:
Number of Individuals:
Number of Children:
Verbal consent obtained: yes/no
Researcher's name and observation:

Participant's name	Age	Sex	Education	Job	Notes
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					

[For the benefit of the enumerator: the focused group discussion aims to capture the millet related activities prior to OMM intervention in the community. Thus, focus of the discussion may attempt to capture the existing production activities, whether millet as a crop is being produced, processed, consumed and marketed in the locality.]

Discussion points

- How many HH are there in the village/hamlet? Economic status, Social and religious composition, education, health status et al.
- Please give a brief description of the basic amenities available in the village. (For example, water sources, drinking water facilities, electricity, AWC, primary school, health care facilities, market place, transport facilities etc.)
- What are the primary livelihood activities practised in the village?
- What are major activities around the farm that you undertake? (sowing, reaping, processing, weeding, storage practices). Who generally does what?
- Give a brief description on types of land, irrigation facilities, major crops produced, preservation of seeds/procurement of seeds, agriculture related government programmes, processing of produced crops, marketing of agricultural goods etc.
- Is millet production a part of agriculture practice in the village? How many HH cultivate millets in the village? Please elaborate on the cultivation process.
- What are the common food consumption practices in the village? (also probe: include episodically consumed food/status food, festivities and feasts, death and mourning, food offering to God)
- Is millet consumed in the locality? Source, how frequently, in what form, reason for consumption)
- Are you aware of the nutri benefits of millets? Elaborate.