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India: Food Security and Nutrition in Tribal Areas

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Abbreviations and Acronyms

AAY	Antyodaya Anna Yojana
ANM	Auxiliary Nurse Midwife
APL	above the poverty line
ASHA	Accredited Social Health Activist
AWC	Anganwadi center
AWW	Anganwadi worker
BMI	Body Mass Index
BPL	below the poverty line
CBO	community-based organization
CFR	Community Forest Right
CHC	Community Health Center
CHF	Community Hunger Fighter
CINI	Child in Need Institute
cm	centimeter
CRP	Community Resource Person
dl	deciliter
EGS	Education Guarantee Scheme
FAO	Food and Agriculture Organization
FGD	focus group discussion
FNS	food and nutrition security
FPS	Fair Price Shop
FRA	Forest Rights Act
FRC	Forest Rights Committee
FY	financial year
g	gram
GDP	Gross Domestic Product
GER	gross enrollment ratio
GoI	Government of India
GP	Gram Panchayat
ha	hectare
HCR	head count ratio
HDI	Human Development Index
HKI	Helen Keller International
IAY	Indira AwaasYojana
ICDS	Integrated Child Development Scheme
ICMR	Indian Council of Medical Research
IEC	Information, Education and Communication
IFA	Iron Folic Acid
IFR	Individual Forest Right
IHD	Institute of Human Development
IKP	Indira KranthiPatham
IYCF	infant and young child feeding
JSY	JananiSurakshaYojana
KBK	Koraput-Bolangir-Kalahandi
kg	kilogram
KSY	<i>Kishori Shakti Yojana</i>
LAA	Land Acquisition Act
LWE	left wing extremism
MDMS	Mid-Day Meal Scheme
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MGNREGS	Mahatma Gandhi National Rural Employment Guarantee Scheme
MoHFW	Ministry of Health and Family Welfare
MSSRF	M. S. Swaminathan Research Foundation
NBA	Nirmal Bharat Abhiyan
NDCC	Nutrition Day Care Center
NFHS	National Family Health Survey
NFSA	National Food Security Act

NGO	nongovernmental organization
NGP	Nirmal Gram Puraskar
NIN	National Institute of Nutrition
NMR	neonatal mortality rate
NNMB	National Nutrition Monitoring Bureau
NRHM	National Rural Health Mission
NRLM	National Rural Livelihoods Mission
NSSO	National Sample Survey Organization
OBC	Other Backward Class
PDS	Public Distribution System
PEEP	Public Evaluation of Entitlement Programmes
PESA	Panchayats (Extension to Scheduled Areas) Act
PHC	Primary Health Center
PoP	Package of Practices
PRI	Panchayat Raj institution
RDA	recommended dietary allowance
RGSEAG	Rajiv Gandhi Scheme for Empowerment of Adolescent Girls, also called SABLA
RMNCH+A	Reproductive, Maternal, Child and Adolescent Health
SC	Scheduled Caste
SEARCH	Society for Education Action and Community Health
SERP	Society for Elimination of Rural Poor
SHD	<i>Sunala Hazar Din</i>
SHG	self-help group
SRLM	State Rural Livelihood Mission
ST	Scheduled Tribe
TABA	tribal and backward area
TSC	Total Sanitation Campaign
TSP	Tribal Sub Plan
VHND	Village Health and Nutrition Day
WASH	water, sanitation and hygiene
WHO	World Health Organization
WPR	workforce participation rate

TABLE OF CONTENTS

Acknowledgements

Abbreviations and Acronyms

EXECUTIVE SUMMARY	I
CHAPTER 1: Food Insecurity and Undernutrition in Tribal and Backward Areas:	1
1.1 Malnutrition in Tribal Areas of India	1
1.2. Relationship to NRLM and Focus on Jharkhand and Odisha	5
1.3. This Study	7
CHAPTER 2: Drivers of Food Insecurity and Undernutrition in Tribal and Backward Areas	12
2.1. Poor Food and Nutrition Outcomes	13
2.2. Insufficient Food Security	14
2.3. Inadequate Access to Health, Water and Sanitation Services	17
2.4. Poor Care Practices	20
2.5. High Income Poverty	22
2.6. Lags in Basic Drivers of FNS outcomes	24
2.3.Where Might NRLM Intervene?	29
CHAPTER 3: Government Interventions and Policies in Response to FNS	31
3.1. Food Security	32
3.2. Nutrition and Care Practices	35
3.3. Health, Water and Sanitation	37
3.4. Income Generation	41
3.5. What are the Implications of These Policies and Programs for NRLM?	43
CHAPTER 4: Community-focused Food and Nutrition Interventions	44
4.1. Mapping of Community-managed FNS Interventions	44
4.2. Community Driven Nutrition Models: A Glance Internationally	54
4.3. What does this mean for NRLM?	55

CHAPTER 5: NRLM'S Role in Improving Food and Nutrition Outcomes in Tribal Areas	57
5.1. Key Findings	58
5.2. Key Recommendations	68
Bibliography	71
ANNEX 1: Case Study: SHGs Mobilized to Facilitate Entitlement Access for the Community: MSSRF in Koraput, Odisha	76
ANNEX 2: Case Study: SHGs Mobilized to Revive and Promote Traditional Agriculture: Jagruti in Daringbari, Kandhamal District, Odisha	85
ANNEX 3: Case Study: SHGs Promoting Hygiene Through Hand Washing and Clean Water Use: CINI in Gumla, Jharkhand	94
ANNEX 4: Review of Key Policies	98
ANNEX 5: Determinants of Food Security and Nutrition in Tribal and Backward Areas	(separately included)
ANNEX 6: Goal Templates	104
ANNEX 7: MSSRF Endline Report	(separately included)
ANNEX 8: Jagruti Endline Report	(separately included)
ANNEX 9: CINI Endline Report	(separately included)
ANNEX 10: Guidance Note: Integrating food security and nutrition interventions with NRLM in Odisha and Jharkhand	107

List of Figures

Figure ES1. Scheduled Tribes have Poorer Nutrition Outcomes Compared to all Other Groups and India Average (2006-07)
Figure ES2. Community-managed Interventions to Improve FNS Outcomes in Tribal Areas
Figure ES3. Seasonal Food Insecurity in Jharkhand
Figure ES4. Tribals Trail in All Basic Amenities
Figure 1.1. Nutrition Status of Children Under Five Years of Age by Social Groups
Figure 1.2. Tribal States in India
Figure 1.3. Differences in Concentration and Outcomes in North-eastern States
Figure 1.4. Extremism in Tribal States
Figure 1.5. Social Mobilization Process
Figure 2.2. Seasonal Food Insecurity in Jharkhand
Figure 1.6. Classic UNICEF Framework
Figure 2.1. Average Monthly Per Capita Consumption (Quantity) for Certain Food Groups
Figure 2.3. Tribals Trail in All Amenities
Figure 2.4. Poverty Incidence (%)
Figure 3.1. Toilet Coverage among ST households in Rural Areas in Jharkhand and Odisha, 2011
Figure 4.1. NRLM Institutional Model
Figure 4.1. Stylized Implementation Model of Interventions
Figure 5.1. Community-managed Interventions to Improve FNS Outcomes in Tribal Areas

Figure 5.2. Self-assessed Food Sufficiency, Jharkhand, 2013
Figure 5.3. Poverty Incidence (%)
Figure 5.4. Tribals Trail in All Basic Amenities
Figure A1.1. Strategic Framework of the MSSRF Program
Figure A1.2. Awareness about Different MGNREGA Schemes

List of Tables

Table ES1: Maternal and child care indicators
Table 2.1: Key health indicators, NFHS-3 (2005-06)
Table 2.2: Proportion of households (per 1,000) that do not get sufficient drinking water throughout the year
Table 2.3: Some key health indicators as per NFHS-3 (2005-06) in India
Table 2.4: Vaccinations of children aged 12-23 months
Table 2.5: Employment classification of self-employed men, NSSO 61st round
Table 2.6: Number of tribal persons displaced by development projects 1950-90
Table 3.1: Indicators of utilization of ICDS services by social groups in areas covered by an AWC
Table 3.2: Poor coverage of ICDS in Jharkhand and Odisha
Table 3.3: Health infrastructure and health care personnel in tribal areas of Jharkhand and Odisha
Table 3.4: MGNREGS implementation status in India, Jharkhand and Odisha, 2012-13
Table 3.5: Programs and policies that impact FNS outcomes
Table 4.1: Sampling of community-managed FNS Interventions
Table 5.1: Maternal and childcare indicators
Table 5.2: Proportion of households (per 1,000) who do not get sufficient drinking water throughout the year
Table 5.3: Sampling of community-managed FNS interventions
Table A3.1: Program framework

Executive Summary

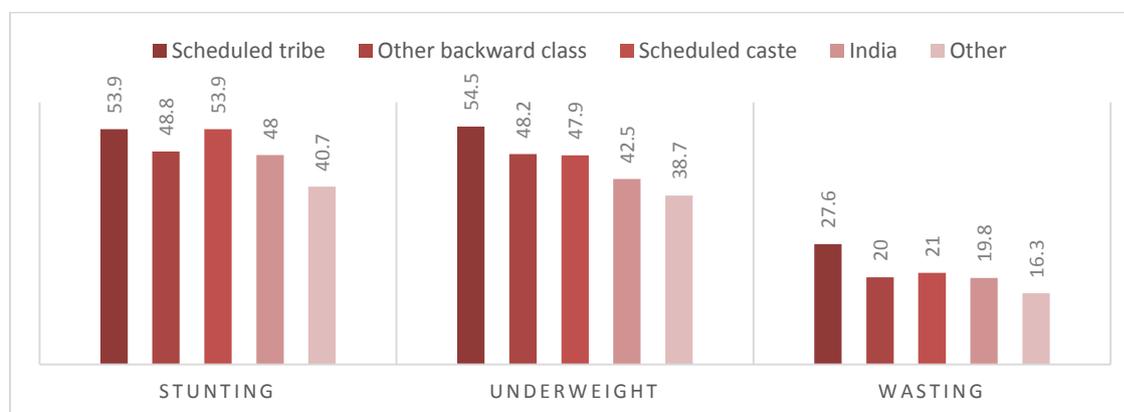
National Rural Livelihoods Mission's Role in Improving Food and Nutrition Outcomes in Tribal Areas

1. Study Background

1.1. Motivation and Rationale

Malnutrition is one of India's most serious and persistent problems, and outcomes are even worse for tribal communities (Figure ES1). India's 'indigenous peoples' number about 104 million and account for 8.6 percent of the overall population. Most are concentrated in a third of India's 640 districts and the vast majority, over 94 million, live in rural areas.

Figure ES1. Scheduled Tribes have Poorer Nutrition Outcomes Compared to all Other Groups and India Average (2005-06)



Source: National Family Health Survey 3, 2005-06.

The implications of malnutrition are dire both from the perspective of intense human suffering for the individual as well as the cumulative implications for society. The condition is known to perpetuate poverty and have a significant impact on human development, from birth into adulthood. The economic costs of malnutrition are staggering for both individuals and societies: individuals earn 10 percent less over a lifetime and the world economy loses 2-3 percent of its Gross Domestic Product (GDP) due to malnutrition annually. Many of India's states with large tribal populations, especially Jharkhand, Chhattisgarh, Bihar and Odisha, are currently experiencing internal conflict, a form of left wing (Maoist or 'Naxalite') extremism.

1.2. Contribution of the Study to National Rural Livelihoods Mission

The National Rural Livelihoods Mission (NRLM) presents a unique opportunity to address constraints in tribal development. NRLM, as implemented by the Ministry of Rural Development, possesses a budget of over US\$5 billion, and has been designed to support state-level livelihood projects across the country. Modelled on livelihoods experiences in Andhra Pradesh, the program seeks to extend the outreach of poverty alleviation programs and build livelihood activities in rural areas by building capacity, creating livelihood opportunities and organizing institutions for the poor. Additionally, NRLM is engaged in the monitoring and evaluation of poverty alleviation schemes. Most uniquely, the program focuses on social mobilization for the development of effective self-help groups (SHGs). These groups then serve as the platform for the savings and credit-based activities, which are central to NRLM. In contrast to the 'top down' approach of most programs, which often leads to a dichotomy of 'service providers' and inert 'beneficiaries,' this grassroots-level mobilization

allows rural tribal communities to actively engage in their own development. NRLM provides essential resources, technical and human capacity support, as well as forward linkages to enable SHGs to sustain themselves, demand greater access to and quality from existing public services, and to successfully pursue income generating activities.

As of 2013, NRLM-supported projects began implementation in seven blocks across three districts of Jharkhand, and in 38 blocks across 10 districts of Odisha; both states have substantial tribal populations. Typically, NRLM's social mobilization process involves a multipart participatory process to identify, mobilize, and enable communities to engage in livelihood activities. However, the social mobilization process is substantially more difficult and time consuming in such states, as tribal communities are physically isolated and present cultural and linguistic barriers to the formation and strengthening of SHGs. Conflict stemming from left wing extremism (LWE) in these states also poses a significant barrier to their development. A modified approach to the standard mobilization process could be considered, in order to overcome these barriers.

Given the widespread challenge of hunger in Scheduled Tribe (ST) communities, it may be plausible to focus on this issue in addition to the usual focus on financial topics, within SHGs. Human development, especially better nutrition, is already an explicit goal of NRLM, even if converting social capital to human capital has proven to be challenging in the Andhra experience where health and education gains have lagged behind advances in credit, savings and livelihood activities. As such, generally exploring how to leverage the scale of NRLM to improve food and nutrition outcomes remains an outstanding question, as well as an opportunity.

1.3. Objectives

This study seeks to examine how NRLM may be leveraged to improve food and nutrition security (FNS) in tribal areas, preferably in a manner that would enhance the effectiveness of the program's core livelihoods focus. More broadly, the objective is to strengthen the capacity of the Government of India (GoI) to deliver (or support) effective FNS interventions in tribal and backward areas (TABAs). As such, the study aims to do the following:

- Develop the evidence base on those constraints which STs face with regard to achieving food security and favorable nutritional outcomes;
- Examine approaches which have been used to address issues of poor nutrition elsewhere in India or abroad to identify interventions that could be effective in tribal areas; and
- Recommend models for improving FNS in tribal areas within the context of NRLM.

1.4. Focus and Limitations

The primary focus of this work is operationally oriented toward identifying entry points for NRLM to address tribal malnutrition as it expands into states with larger tribal communities, particularly Jharkhand and Odisha. As such, the study does not aim to be conclusive on the causes of tribal malnutrition or the government's food and nutrition programs. We examine those topics, consolidate existing research, and add our own primary research to fill gaps with the goal of understanding what NRLM specifically might be able to do about tribal malnutrition, using the implementation modalities available to it.

In the mapping of community managed FNS interventions, there were several that were intentionally omitted. Some models we deemed to be too intensive in terms of time and technical inputs required to be useful for social mobilization purposes. These included direct agricultural or watershed management interventions. Livelihood activities such as nontimber forest product processing, and so on, were also omitted since they already fall within NRLM's core income generation/livelihood program.

1.5. Audience and Client Ownership

Following from these objectives, the study seeks to address two primary audiences: NRLM as well as the State Rural Livelihoods Missions (SRLMs). The NRLM stakeholders encompass policy makers in Delhi, state-level project staff in Jharkhand and Odisha, as well as associated staff within the World Bank itself. Client ownership and engagement has been an ongoing focus of this study. The study goals and pilot interventions were designed in consultation with the Jharkhand and Odisha SRLMs. Throughout the course of the study, there has been a continuous discussion on the status of the work and sharing of intermediate results, both with the project leadership as well as at the level of technical personnel.

1.6. Methods and Data

For the purposes of this report, primary data were collected from a quantitative survey of 600 tribal households in Jharkhand from 24 villages across four districts such that the results are representative of STs in Jharkhand. The primary data, in the form of both quantitative survey data as well as qualitative data from focus group discussions (FGDs), were collected by the Institute of Human Development (IHD) in 2013 for this report. The initial analysis of the dataset is included in the form of a background paper as Annex 5. We will refer to this data as the “Jharkhand 2013 data” throughout the chapter and report. For secondary data, we primarily relied on analysis of data from the National Sample Survey Organization (NSSO) from 2009-10 and the National Family Health Survey (NFHS) conducted in 2005-06.

In addition to examining the primary and secondary data, three pilot studies were implemented in Jharkhand and Odisha through civil society partners. Evaluations were conducted for each by an external agency. The first was an intervention by the M.S. Swaminathan Research Foundation (MSSRF), aimed at improving access to a range of government entitlement schemes that can have a direct bearing on FNS outcomes. It was implemented in the tribal areas of Koraput district, Odisha. The second was an intervention by Jagruti that set out to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha. The third was an intervention by the Child in Need Institute (CINI) that focused on handwashing and clean water use behavior change in Gumla, Jharkhand.

2. Key Findings

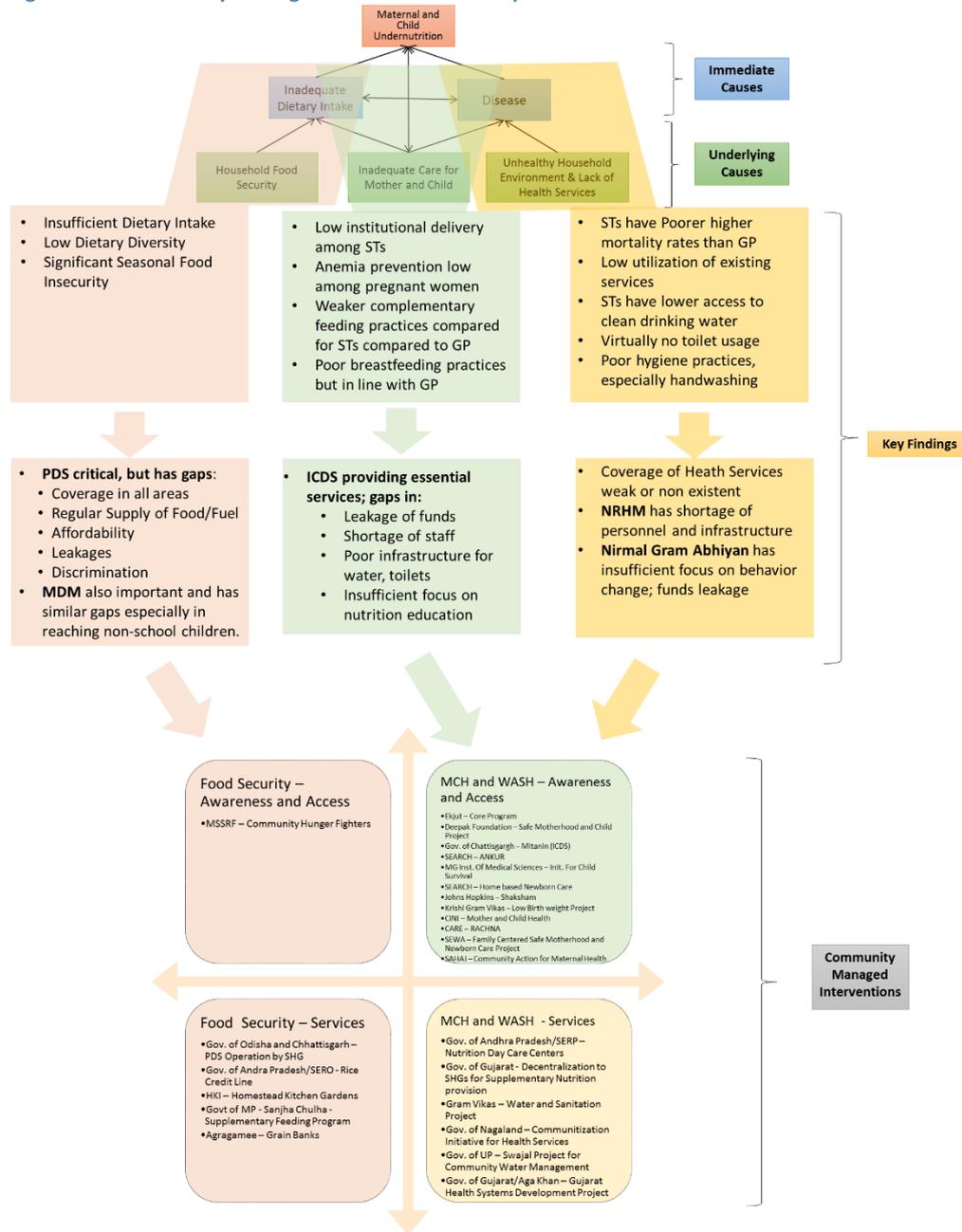
Figure ES2 summarizes the study. It links the factors that theoretically determine nutrition outcomes -- food security, care for mothers and children, and water, sanitation and health services – to the findings of the study for each of these. It then notes the community-managed interventions that were identified in the mapping exercise to address the issues noted in the findings.

Low Consumption and Lack of Dietary Diversity are Barriers to Nutrition Outcomes for Tribals

Most studies reviewed for this Report have found that food intake of both tribal children and adults falls much below the recommended dietary allowances laid down by the Indian Council of Medical Research, particularly involving deficiencies in proteins and other micronutrients.¹ The National Nutrition Monitoring Bureau (NNMB) investigation, for example, found that only about 30 percent of the preschool and school age children had adequate intakes of both protein and calories; nearly half the adult men and women suffered from chronic energy deficiency, and there was significantly higher levels of undernutrition among preschool children in terms of all three standard anthropometric outcomes.

¹ The most representative study has been a large, nationwide survey of tribal households, conducted by the NNMB/NIN, with the main results summarized in: NNMB (2000): Diet and Nutritional Status of Tribal Population. NNMB Tech Report No. 19, National Institute of Nutrition, Hyderabad, and in: NNMB (2009): Diet and Nutritional Status of Tribal Population and Prevalence of Hypertension among Adults: Report on Second Repeat Survey. NNMB Tech Report No. 25, National Institute of Nutrition, Hyderabad.

Figure ES2. Community-managed Interventions to Improve FNS Outcomes in Tribal Areas



Source: Based on authors’ review of existing programs and policies related to FNS.

Information on regular consumption expenditure by the households from NSSO 66th round reveals a significant difference in food expenditure between tribal and nontribal groups across the major tribal-concentration states in India. This correlates highly with overall poverty levels in the respective states. Inequality in food expenditure is most prominent for consumption of milk and other animal products (eggs, meat and fish), with less intense differentials for cereals and other staple foods.

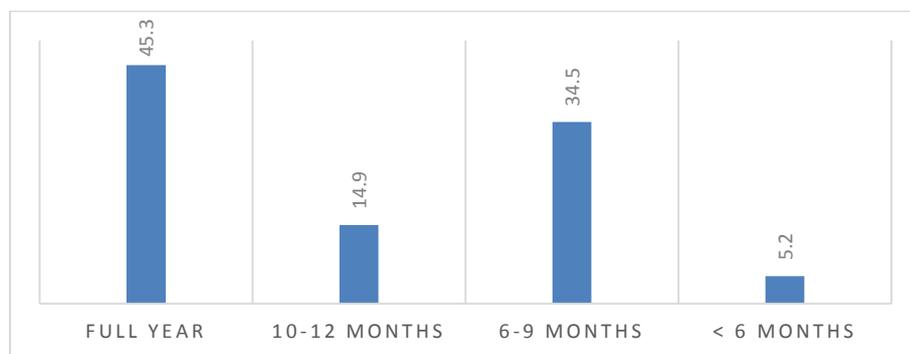
The findings from the analysis of our primary data from Jharkhand, which deployed a more granulated region-level analysis, suggest that the average food expenditure of tribal families tends to be higher in areas where they account for a relative minority of the total population. Across the region-groups, tribals consistently spend a higher proportion of their total income on food than nontribals, with a higher share noted in regions where tribals account for about a quarter to less

than half of the total population (*for details see IHD 2013*). The emerging pattern further suggests that, while poorer tribal households tend to allocate a higher proportion of their food budgets on cereals vis-à-vis their nontribal counterparts of similar economic standing, the gap narrows down on moving up the economic status levels. Results for more basic expenditure distribution-based inequalities account for several important findings; a poor tribal household – in rural and urban areas alike – consistently and significantly spends a lower amount on food than a poor nontribal household, when one considers separate expenditure distributions for these groups.

Continuous Access to Food Remains a Substantial Problem for STs

With regard to continuity of food access, we can turn to the primary data on the ST population in Jharkhand (Figure ES3) to note that 55 percent of the population faces some degree of food insecurity at some point in the year. In a 2006 study, Chakravarty and Dand² found a direr situation in Gujarat where nearly three-quarters of the tribal households in Panchmahals, Gujarat, faced severe food insecurity for more than six months a year, while only 19 percent faced the same situation amongst a comparable sample of nontribal households in Rajkot. Overall, only about 7 percent of the tribal households were found to be food-secure round the year.

Figure ES3. Seasonal Food Insecurity in Jharkhand



Source: Jharkhand 2013 data.

The implications of seasonal food insecurity can have devastating short- and long-term consequences. Our data from Jharkhand suggest that households and communities use progressive, more aggressive coping strategies in dealing with shortages. For acute shortages, of less than five days, there might be dietary changes such as reducing the number and quantity of meals, and borrowing food from friends/relatives and skipping meals by adults. Responding to chronic shortages lasting longer – often during droughts or the monsoon months – more drastic measures are taken such as gathering wild fruits, outmigration, and distress selling of critical assets such as land, or withdrawing children from school to work. In places where grain banks are available, this was cited as a means to manage chronic shocks.

STs Lag in Most Maternal and Child Care Practices

The NFHS-3 data show that while the indicators for maternal and child care (Table ES1) are poor across India, the tribal population is generally worse (breastfeeding proving the exception). In case of childcare, as per the recommendation on preferable initiation of immediate breastfeeding after one hour of birth, slightly less than one-third (28.5 percent) of the ST infants are found to be initiated with the highly nutritious first breast milk (colostrum); the rate is comparatively higher than among Scheduled Castes (SCs) (23.2 percent), and also in general (25.2 percent). However, only 10

²Chakravarty, S. and S. Dand. 2006. Food Insecurity in Gujarat: A Study of Two Rural Populations, *Economic and Political Weekly*, June 3, 2006, pp. 2248-2258.

percent of ST infants in Jharkhand were given colostrum, compared to a similar situation among SCs (9.6 percent) and in general (11.2 percent).

Table ES1: Maternal and child care indicators

	ST	SC	Overall
Antenatal care check up	70.5	74.2	77.1
Percentage institutional delivery	17.7	32.9	38.7
Childhood vaccination	31.3	39.7	43.5
Children breastfed within an hour of birth	28.5	23.2	25.2
Median duration of predominant breastfeeding (in months)	6.2	5.3	6.4
Percentage of children (6-23 months) fed with 3 infant and young child feeding practices	14.0	18.8	20.7
Percentage of children (6-23 months) fed with 3 or more food groups	14.3	19.6	22.1

Source: NFHS, 2005-06.

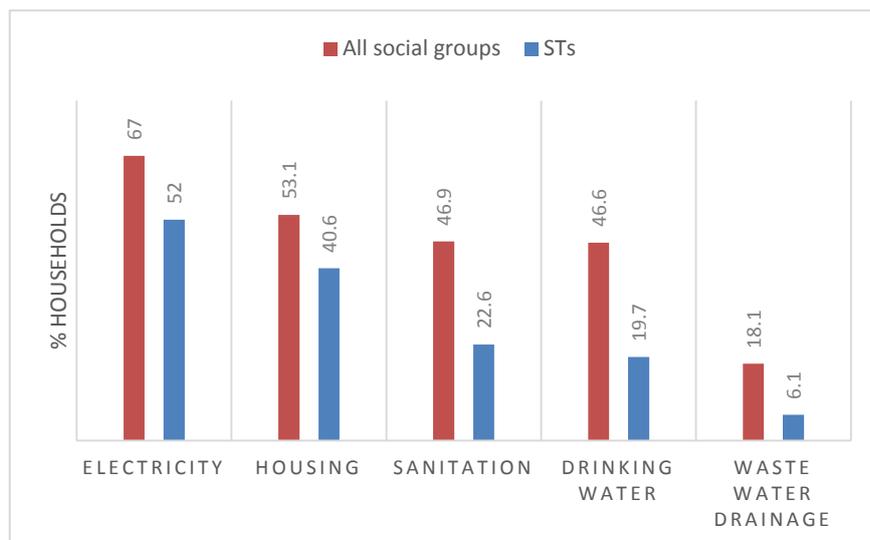
STs Face Gaps in Health, Water and Sanitation and Other Services Essential for Nutrition

The supply of health services is quite poor in tribal areas. Often, in spite of physical existence of a large number Primary Health Centers (PHCs) across the states, availability of doctors at PHCs in the tribal areas remains the biggest challenge. There is also a massive shortfall of nurses/midwives/staff nurses at PHCs and Community Health Centers (CHCs) in tribal areas. The phenomenon is random in Odisha with 799 vacant posts in the said categories, followed by Madhya Pradesh with 646 and Chhattisgarh with a shortfall of 556 nurses/ midwives/staff nurses.

The poor supply of services is matched by low utilization. The likelihood of receiving care from a doctor is the lowest for ST mothers (only 33 percent compared to the all India total of 50 percent and 42 percent for SCs (NFHS-3). Among ST children who suffered from diarrhea, nearly one in every three did not receive any treatment. Only 27 percent of ST women visited a health facility or camp for themselves or their children. Notably, distance emerged as a major barrier (44 percent women reporting it as a major reason), preventing women from visiting health centers to seek treatment or related health service. Again, compared to about 19 percent of women overall reporting that no female health care providers were available at these facilities, the proportion in the case of ST women was a high of 28 percent.

Despite the critical importance of water and sanitation services, they are generally missing or, as was the case with health, of poor quality in tribal communities (though this is true for India generally). Even more troubling is the situation on sanitation facilities. In rural areas, the highest proportion of nonavailability of toilet facilities was noticed in the case of ST households (74 percent) and availability of a within-premises toilet facility was lowest among ST households (nearly 6 percent)(NSSO 2008-09). Even Census 2011 estimated only around 23 percent tribal households, at a pan-India level, had access to toilets, which is about half of that reported by the overall population (46.9 percent). Two-thirds (75 percent) of the tribal households in India have no access to latrines, compared to the national figures of 50 percent. The Jharkhand survey (2013) showed that less than 2 percent of tribal households have proper drainage facilities or modern toilet facilities, highlighting significant public health risks. **Other essential services, especially those related to water and sanitation, demonstrate a similar pattern of poor service delivery (Figure ES4).**

Figure ES4. Tribals Trail in All Basic Amenities



Source: Census 2011.

Service Delivery Challenges Constrain Government Programs Aimed at FNS

GoI has been implementing a number of programs that impact FNS outcomes directly or indirectly. The direct programs include the targeted Public Distribution System (PDS), Integrated Child Development Services (ICDS), and Mid-Day Meal Scheme (MDMS) in primary schools (now under extension to secondary schools), and the recent National Food Security Act. Indirectly, the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and NRLM aim at increasing household income and purchasing power for food security, particularly for households living below the poverty line. Programs such as the National Rural Health Mission and Nirmal Bharat Abhiyan aim to provide health and community environmental hygiene services that are important for nutrition wellbeing.

Nearly all of these major programs face supply side, service delivery and utilization challenges, often at the community level, that reduce their intended effectiveness. PDS coverage tends to be weaker in tribal areas due to nonavailability of PDS shops in the vicinity, absence of stocks, poor grain quality, erratic availability and schedule, and overall lack of household cash to purchase grains. The Jharkhand 2013 data show many areas of strengthening for ICDS such as irregular weighing, counselling on growth charts,³ and deworming. There are charges of financial mismanagement or leaked resources around each of these programs. Indeed, many people simply seem unaware of these entitlements or, especially in the case of STs, face discrimination in trying to access them. LWE is also seen as having contributed to disruption in delivery of many of these programs.

Perspectives from the Communities Seem to Support Analytical Findings

The qualitative discussions undertaken by the Jharkhand 2013 survey offer perspectives on how food security and nutrition are perceived and understood. Seasonal variation in food security is noted from the data. In terms of perceptions, lack of land and its low productivity due to poor irrigation were held to be primary causes. Lack of jobs and mono-cropping were also mentioned in FDGs. People also commented on the lack of access to government services especially due to misallocated BPL cards. Though this did not come through in the data analysis, alcohol and illness were persistently mentioned factors.

³IHD. 2013. Determinants of Food Security and Nutrition in Tribal and Backward Areas. A report submitted to the World Bank (unpublished).

Further, communities value FNS programs, but face several access constraints. Community-level interactions in Jharkhand and Odisha have highlighted the community's perceptions and problems with many such programs:

- *PDS is seen as extremely important, but coverage is thought to be poor and not universally accessible.* People cited shortage of food material, measurement discrepancies, poor rice quality, and irregular rations. Research has also shown that beneficiary communities are not well aware of their food entitlements under PDS and did not possess ration cards which entitle them to access PDS benefits. Often, the tribal households faced difficulties in applying for such cards, due to the number of formalities and documents required;
- *Health services weak in providing information and counselling.* The Auxiliary Nurse Midwife mostly imparts services (immunization) or items (iron pills) rather than information or counselling related to optimal food, nutrition and hygiene behaviors that impact nutrition wellbeing; and
- *ICDS seen as a good source of information.* The Anganwadi worker is seen as an agent of information (encourages dietary diversity, for example). However, a common complaint was the proximity of the Anganwadi centers.

Prioritization of Issues: Seasonal Food Insecurity, Dietary Diversity, Nutrition Behaviors, and Access to FNS and Water, Sanitation and Hygiene Services Most Important

The Jharkhand 2013 data offer a few hints on which issues could be prioritized using a regression model of childhood chronic malnutrition against an array of explanatory factors.⁴ They suggest that household-level vulnerability factors⁵ are most important, followed by health and sanitation supply-side factors, and mothers' cash income status. Being in a moderately vulnerable household, compared to low vulnerability households, increases the odds of being underweight by 44 percent. Utilization of health services, in this case measured by immunization, reduces the odds of being underweight by 30 percent. ICDS reduces the odds of malnutrition by 30 percent. Household health and sanitation behaviors dramatically reduce the odds of being underweight by 23 percent. The mother earning cash reduces the odds of underweight by 20 percent. From the above, we conclude that four major areas for intervention focus could be: (i) hygiene behaviors; (ii) improved access and utilization to services; (iii) dietary diversity; and (iv) seasonal food insecurity.

Community-managed Models Supported by NRLM Could Have Successes in Addressing Gaps in Government Programs

With its grassroots focused, SHG-driven implementation model, NRLM might optimally be placed to improve tribal malnutrition by supporting communities to engage with existing programs and policies for food and nutrition. Empowered SHGs could bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality. NRLM also overlaps with this issue not only from a geographical perspective but also because of the program's focus on the poorest of the poor. **A scan of the Indian landscape to identify FNS interventions that are being or have been tried suggests that there are a number that SHGs under the NRLM structure could successfully undertake these interventions.** These could be undertaken by a SHG or village organization facilitated by a resources person with general skills in (i)

⁴ The factors were: age, sex, income, household vulnerability, village vulnerability, hygiene practices, whether the mother earns a cash income, quality of essential services, child health status, and health service utilization.

⁵ The household-level vulnerability index was derived based on a factor analysis of the following variables: income, assets, household environment, housing type, source of drinking water, purity of drinking water, latrine type, education level, livelihood activity, landholding patterns, social capital, and shocks. The index was derived based on a factor analysis of these variables, which was then normalized into a scale of 0-100. Instead of any subjective thresholds to classify households based on this normalized index score values, we designate the lowest third of the distribution (that is, households with a score of 0-33) as of high vulnerability, the middle-third (with a score of 34-66) as of moderate vulnerability and the highest third (with a score of 67-100) as of low vulnerability. This variable was then checked for consistency with other variables and found to be consistent. Additional details in Annex 5, section 4.5.

mobilization, monitoring or advocacy; (ii) food security interventions; or (iii) maternal and child care and nutrition. Finally, another set of interventions is (iv) a mixture of the above where SHGs are linked to an existing scheme and assume implementation responsibilities. Some of these have evidence of impact but, by and large, a thin evidence base for most suggests a more cautious path forward, focused on experimentation to understand what might work in a tribal context. Below we highlight several promising approaches that do have supporting evidence.

2.1. Community-managed Nutrition Day Care Center

The most significant intervention on nutrition is the Nutrition Day Care Centers (NDCCs) developed since 2007 by the Government of Andhra Pradesh's Society for Elimination of Rural Poverty (SERP). Twenty-two centers are located in tribal area districts of the state, and provide an array of maternal and child nutrition services. The NDCC intervention was developed in response to the need for improved access to health and nutrition services for pregnant and lactating women as well as children. The model adopts a lifecycle approach and aims to address the nutrition and health needs in different phases of life, with a special focus of first 1,000 days of life. An independent assessment on the early outcomes of NDCCs in December 2008 yielded promising findings.

2.2. Grain Banks and the Rice Credit Line

Grain banks have been used across India for decades to manage seasonal food insecurity.⁶ GoI has had a centrally financed program to support their adoption in tribal areas since 1996. Nongovernmental organizations (NGOs) throughout the country have supported grain banks. In Andhra Pradesh, SERP too has a strategy to develop 50,000 grain banks across 22 districts.

The rice credit line covering half a million families is an innovation on the grain banks concept tied in with the PDS system. It is being implemented by SERP in Andhra Pradesh. A family is able to borrow an amount equal to the difference between its monthly consumption of rice and what the PDS allots, from the village federation of SHGs. This also engages the SHGs to proactively ensure that their members receive the PDS rice allotment promptly. The borrower repays in weekly instalments.

2.3. CRPs Focused on Maternal and Child Nutrition

Ekjut, an NGO based in Jharkhand, has been working since 2004 in Jharkhand and Odisha to improve health and nutrition outcomes of tribal communities. Women facilitators are selected from local communities and trained to address issues of pregnancy, childbirth and newborn health. Through a series of interactions at monthly meetings, the facilitator takes the women's group through a '10 meeting Participatory Learning and Action Cycle.' She encourages the women to discuss maternal and newborn problems and, at the end of the 10 meetings, they are able to prioritize their problems and find appropriate strategies and solutions to be implemented. A rigorous, cluster-randomized, impact assessment found that the health and nutritional status of children and women has materially improved due to the intervention.

2.4. CRPs Focused on General Entitlement Access and Advocacy

MSSRF piloted a model for this study that aimed to improve access to government entitlement schemes, such as ICDS, MDMS, PDS, and Kishori Shakti Yojana (KSY), that can have a direct bearing on FNS outcomes. It was implemented in tribal areas of Koraput district, Odisha. This intervention of supporting a dedicated resource person to mobilize the community to access food and nutrition entitlements allows for both community mobilization activities and the leveraging of existing programs. The intervention proved effective in a short period of time, and we can recommend the approach for NRLM to adopt. However, an important caveat is that, while demand for services is relatively easy to generate, the corresponding improvement in service delivery is not.

⁶ Grain banks, typically managed by community organizations such as SHGs, allow for smoothing food consumption over the course of the agricultural season. Villages contribute surplus grains such as rice after harvest and draw from the grain bank in lean times, usually with an obligation to repay. Effectively, a grain bank serves as an alternate source of credit and is thought to reduce the dependence on moneylenders.

2.5. CRPs Focused on Intake and Dietary Diversity

For this study, Jagruti, an NGO based in Odisha, also piloted an activity to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha. The idea was to try a variation on the community or home vegetable garden model but with an attempt to leverage traditional knowledge and practices. Local production is meant to stem seasonal food insecurity and provide diversity in the diet, and minor millets are locally known, nutritionally dense, can grow on poorer soil, and require less water than rice. While the pilot was successful in generating awareness for minor millet production, there remained too many barriers to adoption. We find that reviving millet cultivation only makes sense if NRLM can support access to the inputs such production requires as well as processing, consumption or sale of the outputs. Otherwise, the community or home garden model is likely to prove more expedient.

Hellen Keller International’s Home Vegetable Garden intervention aims to mobilize and support individuals to grow and consume vegetables grown adjacent to their homes. However, project group leaders hold meetings with the community to discuss the need for regular consumption of foods rich in iron, zinc, and vitamin A, or conduct cooking demonstrations to show the importance of washing vegetables before preparing them, or adding meat or eggs to dishes to increase their nutritional value. **Available evidence, though still not yet conclusive, suggests that the homestead food production programming yields positive results with regard to food availability, consumption, and utilization of the three aspects of food security.**

2.6. SHGs or Community Groups Providing Last Mile Service Delivery for Government Schemes

In the final category, we find that, in some instances, the state has either made provisions to incorporate community groups in service delivery or to turn over service delivery to the community entirely. The PDS in Odisha allows SHGs to be operators of the fair price shops and many SHGs are earning an income by doing so.⁷ In Gujarat, the Ministry of Women and Child Development runs a supplementary nutrition program that aims to provide energy-dense fortified food for children below six years of age as well as pregnant and lactating mothers daily in 10 blocks of the state. To support procurement and distribution, the state has involved SHGs, Mahila Mandals and Sakhi Mandals; 729,000 beneficiaries have received food through this system.

3. Key Recommendations⁸

Recommendation 1: Articulate and Support FNS as a Core Approach for Tribal Areas

NRLM could articulate FNS as a core area of focus in tribal areas and direct SRLMs to prioritize the issue in implementation plans. The scope of the malnutrition problem in tribal areas and its stark implications strongly suggests that all major public programs, including NRLM, that are able to directly or indirectly address the issue should do so. With its grassroots focused, SHG-driven implementation model, NRLM might optimally be placed to improve tribal malnutrition by supporting communities to engage with existing programs and policies for food and nutrition. Empowered SHGs could bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality.

Recommendation 2: Assist SRLMs to Promote Community-managed FNS Activities in Tribal Areas

NRLM could develop a national technical and financial assistance program for FNS to support SRLMs to promote community-led FNS activities in TABAs. We envision such a program to have three roles: (i) identification and validation of suitable interventions; (ii) technical support for their implementation and scale up; and (iii) resources to catalyze scale up. The findings above offer NRLM a place to start on food and nutrition challenges in tribal areas, but not stop. The interventions

⁷http://darpg.gov.in/darpgwebsite_cms/Document/file/ccfoodorissa.pdf

⁸ Annex 10 includes a guidance note detailing how food security and nutrition interventions might be integrated with the National Rural Livelihood Mission in Odisha and Jharkhand.

noted above could use independent validation, and many others could be also be tried and tested. This suggests that NRLM take an experimental attitude toward FNS interventions and systematically test promising and emerging ideas. A Social Observatory already exists as a center for assessing real time impact of the project, and it might prove a good model for the suggested tribal area program which could take forward the “identify – pilot – validate” learning cycle that this study has started in a small way. Once programs are thought to be suitable for scale up, a great deal of technical and financial support would be needed for the initial roll out to the state programs.

Recommendation 3: Create Institutional Structures in SRLMs to Support Investments in Community-managed FNS Interventions

SRLMs could create an institutional space to undertake these activities possibly in the form of a FNS committee or task force. Even with a directive and a mix of technical and financial support from NRLM, it is ultimately the SRLMs that must plan, finance, and support the implementation of FNS interventions. A dedicated team in the SRLM would undertake these activities. Such committees for gender and water and sanitation already exist in some states such as Odisha and Jharkhand, and they need not be large: two people to spearhead FNS interventions should be sufficient.

A funding mechanism and planning support to the community are essential requirements to catalyze community-managed FNS intervention; NRLM already has some experience with this.

With regard to planning, interventions or pilots could be included in the annual action plans. A community investment fund is also standard to the program which provides capital to SHG federations which, in turn, can make loans to individual SHGs, according to a micro-credit plan. This requires a plan for the use of the loan, and acceptable use of such funds already includes FNS. However, this mechanism could be expanded, streamlined and more specifically targeted toward community FNS interventions. SHGs could be offered a menu of possible FNS interventions and given a fast track to loan access, should they wish to undertake an activity from the list. This, in combination to technical support from a trained community resource person (CRP) would allow community groups to more easily take up FNS activities. Aside from proactive funding mechanisms, there could also be an expansion of funds available in the case of emergencies. The Food Risk Fund is an example and, in this arrangement, families could contribute to a food-related savings fund and draw from it in times of food shortage or emergency. Variations of this include the rice credit line discussed. These mechanisms are useful if the shock is specific to an individual or household. However, should there be a covariate shock affecting entire regions or communities, there could be better resourced emergency measures such as bulk purchase and distribution of food.

Finally, an important aspect of implementation will be building partnerships with technical agencies to support village organizations and SHGs to develop capacity and deploy interventions. The mapping, in this report, suggests a way forward to potential partnerships. Such partnerships will facilitate the final recommendation below.

Recommendation 4: Promote a Cadre of FNS Community Resource Persons

Specially training CRPs are an essential catalytic element of the successful community-managed FNS programs discussed above. As such, we recommend that SRLMs promote a cadre of FNS CRPs to assist the adoption of community-managed FNS models in tribal areas. The specialized CRPs must have the capacity to mobilize the community and SHGs but, specifically, they could be trained in one of three areas: (i) to manage food security measures such as kitchen gardens or grain banks and to support the access and utilization of related programs such as PDS or MDMS; (ii) to support the adoption of optimal maternal and child care; and (iii) to support SHGs or village organizations to manage the local service delivery of FNS-related schemes, especially MDMS and PDS.

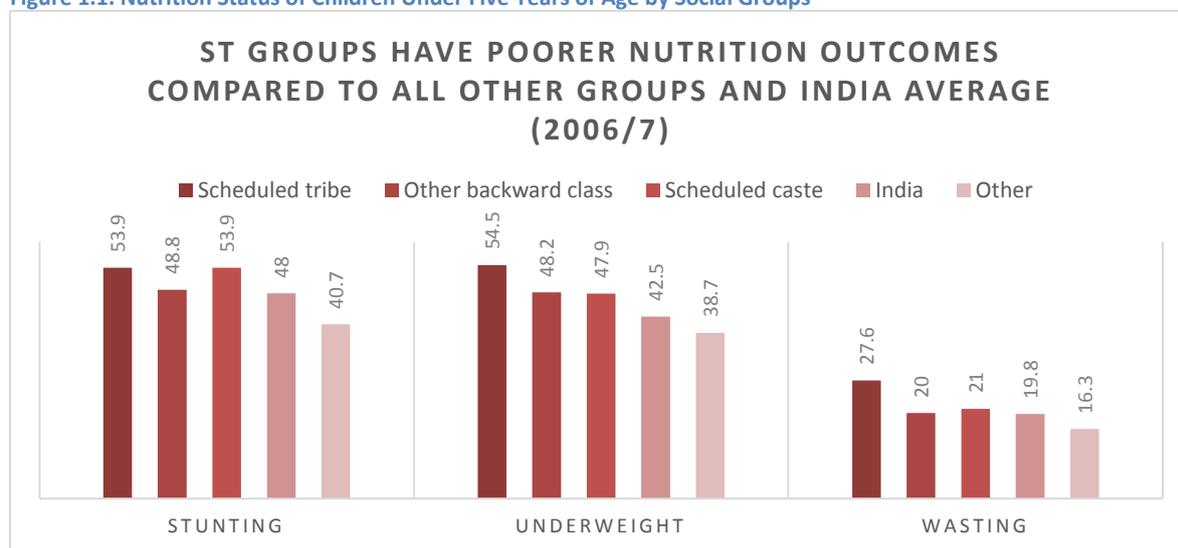
Chapter 1: Food Insecurity and Undernutrition in Tribal and Backward Areas

1.1. Malnutrition in Tribal Areas of India

Malnutrition is one of India’s most serious and persistent problems. As of 2007, an estimated 43 percent of children under five are underweight, a rate more than double that of Sub-Saharan Africa, and five times greater than that of China. Approximately 48 percent of Indians are stunted,⁹ 20 percent are wasted,¹⁰ 70 percent are anemic,¹¹ and 57 percent are vitamin A deficient¹² (NFHS 2006). Despite the targeted efforts of national programs, progress has been slow. A more recent study from 2011, conducted across 100 districts, observed that the percentage of children under five who are underweight is 42 percent, representing only a 1 percentage decrease since 2007. Indeed, the stunting figure among children under five also increased to 59 percent. Further, of the children suffering from stunting, about half are reported to be severely stunted, and of those underweight, about 40 percent are severely malnourished, an indication of severity (HUNGAMA Report, 2011).

While nutrition outcomes across India are poor, they are typically worse in regions which the Government of India (GoI) refers to as ‘tribal and backward areas’ (TABAs). Sixty percent of the burden of malnutrition occurs in seven states: Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Odisha, Rajasthan, and Uttar Pradesh. These seven ‘lagging’ states, in addition to being the lowest income states in India, also possess significant proportions of Scheduled Castes (SCs) and Scheduled Tribes (STs). It is within these communities that individuals face some of the direst nutritional outcomes. For instance, in ST communities, approximately 54 percent of children under the age of five are stunted, 55 percent are underweight, and 28 percent experience wasting (Figure 1.1, IIPS, 2007). Such figures are observably higher than national rates.

Figure 1.1. Nutrition Status of Children Under Five Years of Age by Social Groups



Source: NFHS, 2006 and International Institute for Population Sciences, 2007.

⁹Low height for age, evidence of chronic malnutrition.

¹⁰Low weight for height, indicating acute malnutrition.

¹¹Lacking in iron, one of life’s most basic nutrients.

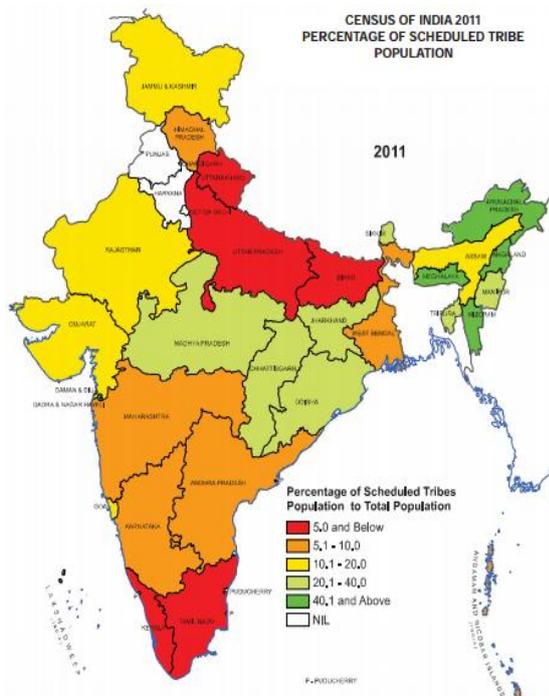
¹²Deficient (increasing their vulnerability to blindness as well as common childhood diseases such as diarrhea, pneumonia and measles).

1.1.1. Tribal Communities in India

The indigenous peoples of India are often called **Adivasis** or **STs**. The term Adivasi is commonly translated as 'original inhabitants,' and is a concatenation of 'adi,' meaning 'earliest time,' and 'vasi' meaning 'resident of.' Adivasis are also referred to as STs, a term deriving from the Constitution (Scheduled Tribes) Order of 1950, which recognized numerous tribes and outlined measures intended to improve their equality and social status, such as providing reservations in legislation, public sector employment, and government-run educational institutions. STs and SCs are terms often used together in development literature, although they are completely different social categories. The major difference between the SCs and STs is that, while SCs have lived among but are socially segregated from the mainstream through an elaborate ritual-based ideology, STs have been isolated physically and, hence, socially (Beetle, 1991 cited in World Bank report , p. 38). After Africa, the largest and most diverse tribal communities in the world continue to reside in India: according to the Registrar General of India, 705 ethnic groups and communities are identified as STs (Registrar General of India, 2013).

India's 'indigenous peoples' number about 104 million and account for 8.6 percent of the overall population. Most are concentrated in a third of India's 640 districts and, the vast majority, over 94 million, live in rural areas (India Census 2011). Geographically, ST populations mostly reside in the states of Madhya Pradesh, Maharashtra, Odisha, Gujarat, Rajasthan, Jharkhand, Chhattisgarh, Andhra Pradesh, West Bengal, Karnataka, Assam and Meghalaya (Figure 1.2). They are amongst the lowest income citizens in the country, highly dependent on the forests and other natural resources of the enclaves into which they have been pushed over time.

Figure 1.2. Tribal States in India

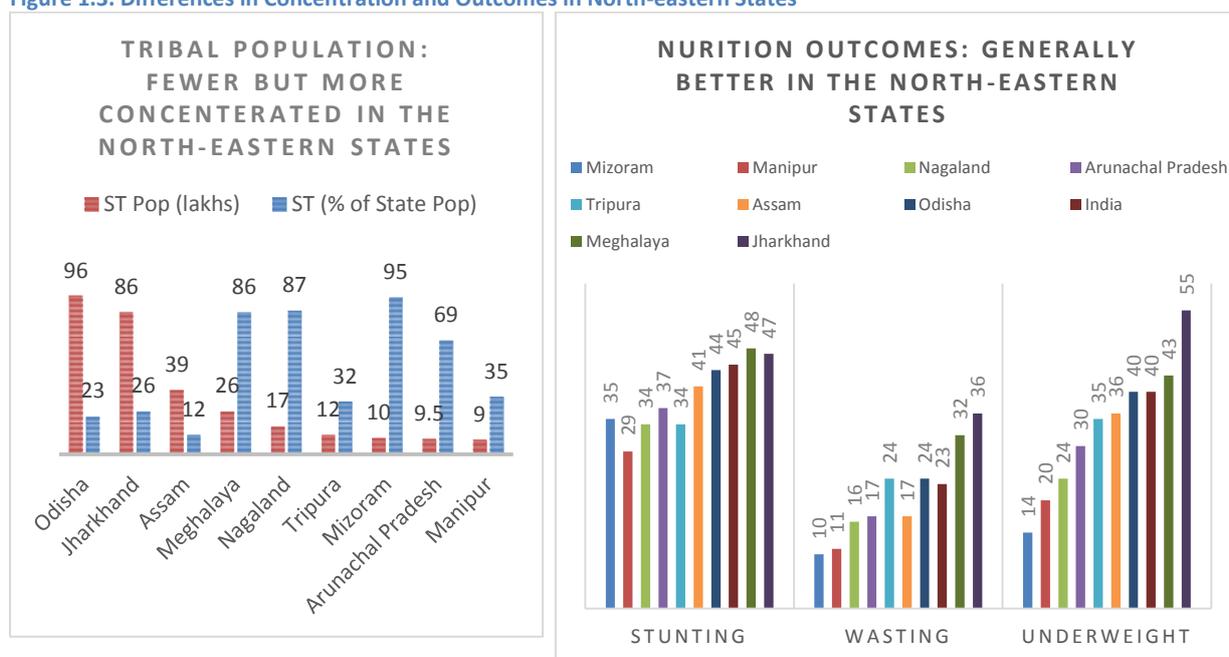


Source: Census 2011.

Within the broader tribal population, a meaningful distinction can be made between those communities that reside in India's north-eastern region and those in the rest of the country. Several tribal communities reside in India's north-eastern states, where they often constitute a majority of the population (Figure 1.3). These tribal communities possess a different historical

context as well as cultural character, which is reflected in health outcomes. Indeed, the Indian Constitution recognizes such key regional differences amongst tribal communities, and does not categorize Assam, Meghalaya, Tripura or Mizoram as Schedule V areas. This Report seeks to focus on the Schedule V areas where 94 million tribal people reside. More specifically, as the following section elucidates, special attention is provided within the context of this report to the ST communities in Jharkhand and Odisha, which have a tribal population of 4.3million (26 percent of the overall state population) and 4.7 million (23 percent of the overall state population), respectively (Figure 1.3).

Figure 1.3. Differences in Concentration and Outcomes in North-eastern States



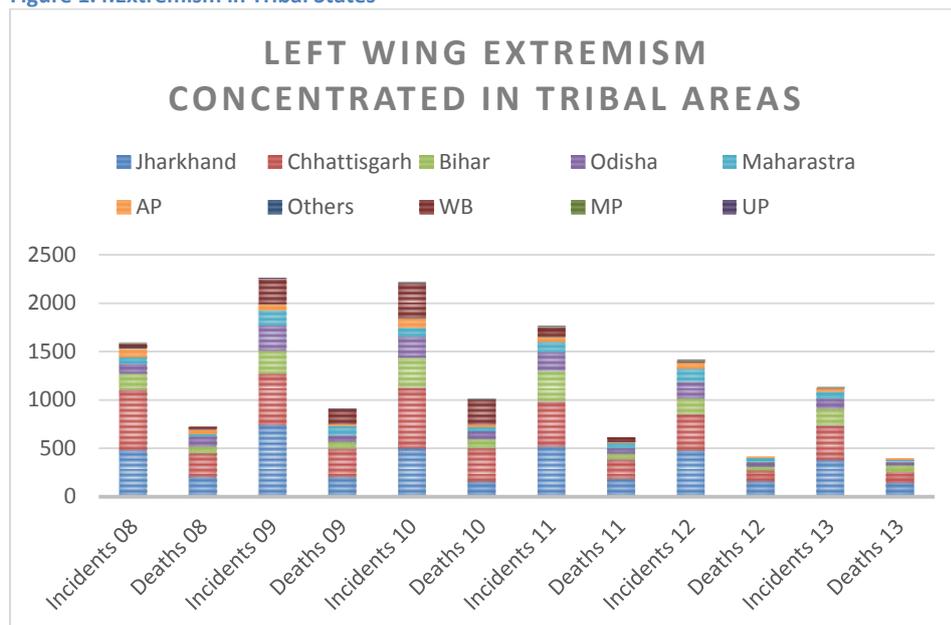
Source: NFHS 2005-06.

Many of these states with large tribal populations, especially Jharkhand, Chhattisgarh, Bihar and Odisha, are currently experiencing internal conflict, a form of left-wing (Maoist or 'Naxalite') extremism (1.4).¹³ There is increasing recognition that the 125 or so districts of the country that are conflict-affected¹⁴ suffer from a 'development deficit' -- of which the nutrition outcomes are an indicator -- having seen very slow progress over the past few decades. Their tribal communities have remained outside the pale of even basic services; safety-net programs such as the Public Distribution System (PDS) and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) perform poorly; and governance is particularly weak in these areas. It is widely believed that such conditions have contributed to the rise of internal conflict, namely in the form of leftwing extremist political movements, which have established administrative control over large swathes of land. In order to address the conflict and the development deficit, there is a renewed focus in Gol and state governments on addressing the needs of the affected people.

¹³ Government of India - Ministry of Home Affairs: http://www.mha.nic.in/sites/upload_files/mha/files/NaxalStats-100114.pdf

¹⁴ <http://tribal.nic.in/Content/ListofnaxalaffecteddistrictsasidentifiedEducation.aspx>

Figure 1.4. Extremism in Tribal States



Source: Government of India, Ministry of Tribal Affairs.

1.1.2. Malnutrition and its Implications

While malnutrition is a broad term that encompasses both overnutrition¹⁵ as well as undernutrition, the focus of this report is on undernutrition, which is a substantially larger issue for STs. Undernutrition refers to the outcome of inadequate intake of food (calories) or essential micronutrients that the body needs to grow, resist infection and disease, learn, perform physical work, and complete other essential bodily functions (Box 1). Within the context of this report, while the term malnutrition is used quite broadly, it specifically refers to the phenomenon of undernutrition, rather than overnutrition.

Box 1: What does Malnutrition Mean and How is it Measured?

As previously described, undernutrition is a broad term that refers to the outcome of inadequate intake of food (calories) or essential micronutrients that the body needs to grow, resist infection and disease, learn, perform physical work, and complete other essential bodily functions.

Health and nutrition studies typically describe malnutrition in children under five years of age using the following indicators:

- **Stunted** describes children with height measurements that are two standard deviations below the mean of the World Health Organization (WHO) Child Growth Standards median. “Stunted” can be interpreted to be an indicator of the cumulative effects of malnutrition and infection in utero and after birth. Stunting increases the likelihood of illness and poor health, reduces cognitive development, and lowers economic productivity. Women of small stature are more likely to give birth to babies with low birth weight;
- **Wasted** describes children with weight measurements that are two standard deviations below the WHO Standards median. Since weight can change more quickly than height, wasting can be an indicator of both acute short-term reduction of food intake and stunting;
- **Underweight** describes children below two standard deviations from the median in the

¹⁵ WHO defines overnutrition as the chronic condition where intake of food is in excess of dietary energy requirements, resulting in one being overweight and/or experiencing obesity (WHO 2010). While this is not the focus of the present report, it should be noted that the issue a rapidly growing concern for urban India and, paradoxically, is related to undernutrition in that childhood undernutrition is predictive of adult overnutrition (source: Victoria, C., L. Aldair, C. Fall, P. Hallal, R. Martorell, L. Richter, et al. 2008. Maternal and child undernutrition: consequences for adult health and human capital. *The Lancet*, 340-357.).

WHO Child Growth Standards. This is a difficult indicator to interpret, as it can reflect both wasting and stunting; and

- **Low birth weight** describes babies that are less than 2,500 grams (5.5 pounds), and indicates premature birth or restricted growth in the womb, usually due to malnutrition, ill health, hard work or overall poor care of the mother during pregnancy.

Undernutrition in Adults:

- **Underweight or thinness** describes adults who have a body mass index (weight divided by height squared) of less than 18.5. Mothers who are excessively thin are more likely to give birth to babies with low birth weight or those that suffer other complications during pregnancy and child birth.

Micronutrient deficiencies for both children and adults can refer to inadequate levels of a number of critical vitamins and minerals. The following are commonly-observed deficiencies:

- **Anemia** describes a condition in which mothers or children under the age of five have hemoglobin concentrations in their blood below 110 grams/liter at sea level. While anemia indicates an iron deficiency, it can also imply insufficient levels of folate, vitamin B₁₂ and vitamin A. Anemia increases the risk of maternal and child mortality, reduces work capacity, and reduces physical and cognitive development;
- **Vitamin A deficiency** refers to a blood concentration of vitamin A in adults and children which is less than 0.7 micro-mols per liter. The deficiency causes night-blindness (blindness in low light conditions) or, in severe forms, complete blindness. It can also reduce the ability to resist infections; and
- **Iodine deficiency** refers to the condition of having a blood concentration of 100 micrograms of iodine per liter in urine. This deficiency has significant implications for a child's mental development and survival.

Source: WHO, 2010.

The implications of malnutrition are dire: the condition is known to perpetuate poverty and have a significant impact on human development, from birth into adulthood. Malnourished children are more susceptible to disease and death. Undernourished mothers are more likely to give birth to underweight children or die in childbirth, and undernourished children are at a higher risk of dying from common childhood diseases, as malnourishment tends to reduce their resistance to even minor illnesses (UNICEF, 1998). Malnourished children also have a more difficult time learning in school and, as adults, they tend to be less productive (Victoria, et al., 2008). For instance, poor nutritional status decreases returns on investment in education and consequently hinders social and economic progress (Maesham and Chatterjee, 1999). The economic costs of malnutrition are staggering for both individuals and societies: individuals earn 10 percent less over a lifetime and the world economy loses 2-3 percent of Gross Domestic Product (GDP) due to malnutrition annually.¹⁶

1.2. Relationship to NRLM and Focus on Jharkhand and Odisha

1.2.1. Government Responses and Issues

Gol's response to the high burden of tribal malnutrition spans a range of policies and interventions that have produced mixed results. Some approaches have focused primarily on the matter of food security, such as the PDS, the Mid-day Meal Scheme (MDMS), and the recently passed the National Food Security Act (NFSA). Other approaches target health and nutrition issues, such as the Integrated Child Development Scheme (ICDS), National Rural Health Mission (NRHM), and Rajiv Gandhi Scheme for Empowerment of Adolescent Girls (RGSEAG), also called the SABLA scheme, which focus specifically on the nutrition and economic empowerment of adolescent girls. Gol has

¹⁶The World Bank. 2006. "Repositioning Nutrition as Central to Development. Washington, D.C.: World Bank.

also sought to address malnutrition by exploring the issue through a number of other sectors, including water supply and sanitation, political and economic development, and land management. For instance, the Nirmal Bharat Abhiyan or NBA (Total Sanitation Campaign (TSC)) has sought to reduce malnutrition in the water supply and sanitation sector. With regard to political and economic development, the Panchayats (Extension to Scheduled Areas) Act of 1996 (PESA) extended local government structures to tribal areas or the Tribal Sub-plan (TSP). Key modifications to the Land Acquisition Act (LAA) and Forest Rights Act (FRA) have improved access to essential resources such as land and forests in tribal regions. Despite these efforts, as indicated previously by the nutrition outcomes in Figure 1.1., progress to mitigate malnutrition has been slow at best, if not entirely elusive. As the Report will explore, the slow pace of progress is strongly linked to deficiencies in policy and program design or, more often, service delivery issues in tribal areas.

A number of community-driven food and nutrition security (FNS) interventions have been implemented across the country by governments and nongovernmental organizations (NGOs). The report identifies over 30 such activities. These focus on four main areas: maternal and child health and nutrition services; food security; community monitoring and advocacy for improved entitlement access and service delivery; and service delivery of state programs. Many of these programs are quite promising but small in scale, isolated in application, and lack evidence of impact.

1.2.2. National Rural Livelihoods Mission

NRLM presents a unique opportunity to address constraints in tribal development. As implemented by the Ministry of Rural Development, it possesses a budget of over US\$5 billion, and has been designed to support state-level livelihoods projects across the country. Modelled on livelihood experiences in Andhra Pradesh, the program seeks to extend the outreach of poverty alleviation programs and build livelihood activities in rural areas by building capacity, creating livelihood opportunities, and organizing institutions for the poor. Additionally, NRLM is engaged in the monitoring and evaluation of poverty alleviation schemes. Most uniquely, the program focuses on social mobilization for the development of effective self-help groups (SHGs). These groups then serve as the platform for savings- and credit-based activities, which are central to NRLM. In contrast to the ‘top down’ approach of most programs, which often leads to a dichotomy of ‘service providers’ and inert ‘beneficiaries,’ this grassroots-level mobilization allows rural tribal communities to actively engage in their own development. NRLM provides essential resources, technical and human capacity support, as well as forward linkages to enable SHGs to sustain themselves, demand greater access to and quality from existing public services, and to successfully pursue income generating activities.¹⁷

1.2.3. Questions and an Opportunity to Leverage the Scale Up of NRLM

Typically, NRLM’s social mobilization process involves a multipart participatory process to identify, mobilize, and enable communities to engage in livelihood activities. During the initial phases of the social mobilization process, an array of participatory exercises is conducted by a resource person to assess the status of the community and identify its poorest and most marginalized members. Such persons are then provided support to form SHGs, or to revitalize SHGs that may already exist. Subsequently, numerous training sessions are conducted for these SHGs to strengthen their capacity to undertake livelihood activities. Training sessions span a wide range of topics, from how to functionally manage groups, to financial skills that are essential for managing the dispensation of savings and credits. Additionally, these capacity-building activities facilitate the formation of a

¹⁷Ministry of Rural Development. Undated. National Rural Livelihoods Mission, Programme Implementation Plan, GoI. Available at: <http://aajeevika.gov.in/nrlm/PIP-NRLM.pdf>

village-level organization. At this stage, the core credit, savings and livelihood activities can commence, as can the construction of higher – block- and district-level – organizations (Figure 1.5).¹⁸

Figure 1.5. Social Mobilization Process



Source: Assam State Rural Livelihood Mission Society, Community Operational Manual, Guwahati, Assam.

As of 2013, NRLM-supported projects began implementation in seven blocks across three districts of Jharkhand, and in 38 blocks across 10 districts of Odisha; both states have substantial tribal populations. However, the social mobilization process is substantially more difficult and time consuming in such states, as tribal communities are physically isolated and also present cultural and linguistic barriers to the formation and strengthening of SHGs.¹⁹ Conflict stemming from left wing extremism (LWE) in these states also poses a significant barrier to their development. A modified approach to the standard mobilization process must be considered, in order to overcome these barriers.

Given the widespread challenge of hunger in ST communities, it may be plausible to focus on this issue, in addition to the usual focus on financial topics, within SHGs. Human development, especially better nutrition, is already an explicit goal of NRLM, even if converting social capital to human capital has proven to be challenging in the Andhra Pradesh experience where health and education gains have lagged behind advances in credit, savings and livelihood activities.²⁰ As such, generally exploring how to leverage the scale of NRLM to improve food and nutrition outcomes remains an outstanding question, as well as an opportunity.

3. This Study

1.3.1. Objectives

Broadly, the objective of this study is to strengthen Gol's capacity to deliver (or support) effective FNS interventions in tribal and backward areas. More specifically, this study seeks to examine how NRLM may be leveraged to improve FNS in tribal areas, preferably in a manner that would enhance the effectiveness of the program's core livelihoods focus. As such, the study aims to do the following:

- Develop the evidence base on those constraints which STs face with regard to achieving food security and favorable nutritional outcomes;
- Examine approaches which have been used to address issues of poor nutrition elsewhere in India or abroad to identify interventions that could be effective in tribal areas;

¹⁸ Assam State Rural Livelihood Mission Society, Community Operational Manual, Guwahati, Assam. Available at: http://www.asrlms.in/Downloads/community_operational_manual.pdf

¹⁹ Ibid. pg. 75.

²⁰ Presentation by Raymond Peter (Principal Secretary, Rural Development Department, Government of Andhra Pradesh) and Budithi Rajsekhar (CEO of SERP, Government of Andhra Pradesh) on March 11, 2014 at World Bank, Washington D.C. Title: Using Community Institutional Platform for Last Mile Service Deliveries and Achieving MDG Outcomes.

- Develop scalable, sustainable models for improving FNS in tribal areas, within the context of NRLM; and
- Implement promising models in tribal areas of Jharkhand and Odisha, and document their effectiveness and suitability to be scaled up through state-level livelihood projects.

Following from these objectives, the study seeks to address two primary audiences: NRLM stakeholders and development practitioners with an interest in the area of tribal malnutrition. The NRLM stakeholders encompass policy makers in Delhi, the state-level project staff in Jharkhand and Odisha, as well as associated staff within the World Bank itself. More generally, this study is likely be of interest to development practitioners from various organizations who are engaged with the national conversation on FNS and tribal development, such as the Planning Commission, relevant government ministries, and civil society.

1.3.2. Data Sources

For the purposes of this report, primary data were collected from a quantitative survey of 600 tribal households in Jharkhand from 24 villages across four districts such that the results are representative of STs in Jharkhand.²¹ We will refer to this data as the “Jharkhand 2013 data” throughout the chapter and report. For secondary data we primarily relied on analysis²² of data from the National Sample Survey Organization (NSSO) from 2009-10 and the National Family Health Survey (NFHS) conducted in 2005-06.

1.3.3. Conceptual Framework

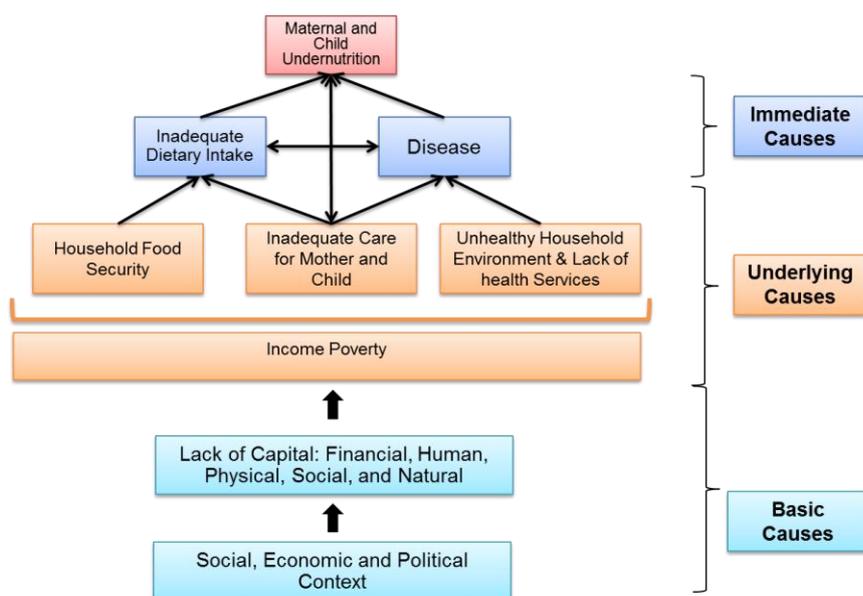
The classical framework developed by UNICEF emerged through a process of large-scale consultation and review of different nutritional strategies from across the developing world. It emphasizes the fact that nutrition is addressed through combinations of actions that cut across sector boundaries. The study proposes an additional adaptation to the framework (Figure 1.6) that more explicitly presents the factors that are related to social exclusion, given the focus of this work on marginalized tribal communities. The *basic factors* specified in the framework address drivers of FNS from a social exclusion lens that aggravate poor outcomes; the *immediate* determinants of tribal FNS are recognized to have a bearing through inadequacies in dietary intake and prevalence of frequent illnesses, and interconnectedness between these two knots. Dietary intake is considered to include consumption of total calories, such as carbohydrates, proteins and fats, as well as the nutritional content of that consumption measured by the presence of key micronutrients such as vitamin A, zinc, iron and iodine.²³ As seen, low dietary intake also acts through increased risk of illnesses triggered by weak-bodily constitutions; such a link may be established in repeated diarrhea incidences among children that suffer from low calorie intake and resultant undernutrition outcomes.

²¹The primary data, in the form of both quantitative survey data as well as qualitative data from focus group discussions, were collected by the Institute of Human Development in 2013 for the purposes of this report. The initial analysis of the dataset is included in the form of a background paper which is included as Annex 5. We will refer to this data as the “Jharkhand 2013 data” throughout the chapter and report.

²²Mazumdar, S., H. Dayal, S. Satija, S.K. Shukla and A. Kumar. 2013. Determinants of Food Security and Nutrition in Tribal and Backward Areas, Study Report submitted to the World Bank, Population Health & Nutrition Research Program, Institute for Human Development, New Delhi.

²³World Food Programme. 2005. A Manual: Measuring and Interpreting Malnutrition and Mortality, CDC and World Food Programme, July 2005, Rome.

Figure 1.6. Classic UNICEF Framework



Source: UNICEF. 1998. *The State of the World's Children: Focus on Nutrition*. New York: Oxford University Press.

The knowledge gained from existing literature emphasizes the fact that interventions focused on immediate causes cannot sustainably improve outcomes in the medium term since these immediate determinants are, in turn, affected by underlying or intermediate determinants. Dietary intake is a function of: (a) food security; and (b) care and feeding practices received by pregnant and lactating women as well as their children. The second immediate determinant, disease, is also a function of these two factors, in addition to the quality of health services and availability of sanitary facilities and hygienic household environment. The third factor, income, affects all of the above. While the availability of basic health services is critical to disease prevention, it is rarely adequate. Clean drinking water and sanitary services are also necessary to prevent the contraction and spread of infectious diseases. Hence, the dynamics of FNS factors are embedded in a complex web, an understanding of which especially with reference to tribal populations poses further challenges due to their special identity.

The term food security, referring to the first intermediate determinant, combines several ideas. As per the most recent redefinition put forwarded by the Food and Agriculture Organization (FAO) in the consultation process of the World Food Summit (1996), food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.²⁴ While availability of food is critical for nutrition, it is not sufficient to ensure security. Physical availability of food refers to the supply side of food security and is determined by the level of food production, stock levels and net trade. However, adequate supply does not necessarily translate into sufficient food at the household and individual levels sustainably, unless access through some form of entitlement (purchase, production, transfer) along with its correlate (labor, title, money, market, and so on) come into existence²⁵ and ensure continuity of access²⁶ to food.

²⁴FAO. 1996. Rome Declaration on World Food Security and World Food Summit Plan of Action. World Food Summit, November 13-17, 1996. Rome.

²⁵Sen, A. 1982. *Poverty and Famines: An Essay on Entitlement and Deprivation*, Oxford University Press, 1982.

²⁶IFAD. *Food Security - a Conceptual Framework, Investing in Rural People*.

The second intermediate determinant refers to health, water and sanitation, and other essential services. These are critical to nutrition outcomes acting through the immediate determinant of disease burden. The pathways of influence of poor access to drinking water and lack of modern sanitation practices, such as open defecation, on nutritional outcomes is primarily two-fold: greater susceptibility to enteric infections due to water-borne pathogens and, more importantly, the phenomenon of chronic 'environmental enteropathy'²⁷ where continuous exposure to fecal contamination causes susceptibility of intestines to pathogens and reduces nutrient absorption. Following this line of thought, a strong correlation is drawn between high incidences of both open defecation and chronic childhood malnutrition in India.²⁸ A related body of research has identified strong causal effects of access to safe drinking water on reducing disease risks such as diarrhea,²⁹ which is considered to be an important reason for acute episodes of both wasting and stunting.³⁰

The third intermediate determinant is the care received by mothers and children. This acknowledges the fact that even food secure households that have access to health, water and sanitation services can suffer from undernutrition. Food and services must be appropriately allocated and used to translate into adequate nutrition. Indeed, utilization is often incorporated as a final fourth factor in defining food security, but the idea applies more broadly than food. Care practices for infants and young children include an array of behaviors such as exclusive breastfeeding for children under six months, or the appropriate introduction of complementary foods as well as associated hygienic behaviors such as hand washing or the avoidance of smoking indoors. Adequate rest, weight gain, and nutrition supplementation are amongst the essential care activities for pregnant or lactating women.³¹ The focus is both on mothers and children since the evidence is clear that the most damaging impacts of undernutrition occur in the first 1,000 days of a child's life: the time in the mother's womb and the first two years after birth. The impacts of undernutrition on mortality, morbidity, and cognitive development are mostly lifelong and irreversible after this 1,000-day period.³² However, care for mothers and children requires active engagement from all members of the household and community. Critical aspects of optimal care involve both knowing what to do as well as having the ability and support to do it. This requires awareness, education, and support for the entire family, including the men and elderly.³³

The fourth factor, income poverty, affects each of the previous three. Additional income at the household level allows households to purchase food, access health services, invest in clean water and sanitation, and acquire the inputs necessary for adequate care such as education or free time. Similar gains accrue at the community level where income can lead to investments in community nutrition programs. At the national level, estimates say that, with moderate income growth of 2.5

²⁷ A term due to Humphrey and others, as cited by Hammer, J., D. Spears (2013). Village Sanitation and Children's Human Capital: Evidence from a Randomized Experiment by the Maharashtra Government, *Policy Research Working Paper # 6580*, The World Bank.

²⁸ Spears, D., A. Ghosh and O. Cumming. 2013. Open Defecation and Childhood Stunting in India: An Ecological Analysis of New Data from 112 Districts. *PLoS ONE* 8(9): e73784.

²⁹ Jalan, J. and M. Ravallion. 2003. Does piped water reduce diarrhea for children in rural India, *Journal of Econometrics*, 112 (2003): pp 153-73.

³⁰ Checkley, W., G. Buckley, R.A. Gilman, et al. 2008. Multi-country analysis of the effects of diarrhea on childhood stunting, *International Journal of Epidemiology*, 37: pp 816-830.

³¹ WHO on behalf of The Partnership for Maternal Newborn and Child Health. 2006. Opportunities for Africa's newborns: Practical data, policy and programmatic support for newborn care in Africa.

³² Victora C.G., L. Adair, C. Fall, P.C. Hallal, R. Martorell, L. Richter and H.S. Sachdev. 2008. Maternal and Child Undernutrition Study Group. Maternal and child undernutrition: consequences for adult health and human capital, *Lancet*. January 26, 2008;371(9609):340-57.

³³ Engle P.L., P. Menon and L. Haddad. 1997. Care and Nutrition Concepts and Measurement, International Food Policy Research Institute, Washington, D.C.

percent sustained through 2015, malnutrition rates would decrease by an average of 27 percent even without changes in household or community infrastructure.³⁴

Finally, the structural or basic causes of malnutrition underlie the intermediate ones and reflect the social, political and economic contexts within a society. These contextual factors govern the processes through which resources become available to a society, are allocated to its members as capital, in all its forms, to produce goods and services, collect rents or earn an income. For tribal communities, these would include access to forests and agricultural lands, transportation linkages to reduce geographical isolation, discrimination-free access to government services, access to credit and jobs or political voice. All of these factors contribute to nutrition status through the intermediate and, ultimately, immediate factors. However, as critical as the basic causes are by definition, their roots in the structure of the society make them less amenable to short-term or community-led interventions and policies. As such, while our analysis does touch on these issues below, the primary focus is on the intermediate and immediate causes of malnutrition.

1.3.4. Structure

The Report structure also follows the aforementioned objectives. The second chapter examines the drivers of malnutrition in tribal communities using available secondary evidence, as well as primary data which were collected specifically for this study. The third chapter analyses relevant government responses to tribal malnutrition, in the form of programs and policies, with a specific eye to understanding why they have historically been more or less successful. Chapter 4 surveys the experiences of efforts to address tribal malnutrition by civil society organizations in India, with some relevant insights from other countries. Based on this review, interventions which may be attempted within the context of NRLM are examined. The final chapter synthesizes key learnings and presents recommendations to NRLM on how the program can seek to address malnutrition in tribal areas. Annexes 1-3 each present one of the three pilot interventions which were undertaken for this study. Their design, implementation challenges, evidence of impact, and suitability for scale and replication are considered. The Report is also accompanied by a Guidance Note.

³⁴L. Haddad, H. Alderman, A. Appleton, et al. 2003. Reducing Child Malnutrition: How Far Does Income Growth Take Us? *World Bank Economic Review* (2003) 17(1): 107-131.

Chapter 2: Drivers of Food Insecurity and Undernutrition in Tribal and Backward Areas

This chapter examines the key driving factors behind the alarmingly high rates of tribal malnutrition which have motivated this study. As the subtitle underscores, the objective of undertaking this analysis is to identify the sub-issues related to malnutrition that NRLM might focus on to optimize its impact. The examination of the causes of tribal malnutrition follows the Child Survival and Child Death framework developed by UNICEF in the early 1990s³⁵ and the adapted version presented in the *Lancet* series on nutrition in 2008.³⁶ The sociopolitical elements of that framework are explored in greater detail, drawing from a recent study titled *Exclusion Matters* by the World Bank.³⁷ The first section describes this framework. The second section presents evidence and analysis on the key factors in the framework, using meta-analysis of existing information as well as primary data collected for this study from Jharkhand. Drawing from this analysis, the final section notes that, given the wide gaps between the tribal and general populations in almost every conceivable factor that affects malnutrition, NRLM really might focus on any of the factors and expect to have a meaningful impact. However, given the core capabilities of NRLM and varying levels of tractability of the causal factors, in addition to its core income generation activities to reduce household vulnerability, the program might want to focus on the adoption of household hygienic behaviors, improvement of water, health and sanitation services, especially access, and utilization of those that already exist.

The Jharkhand 2013 data indicate that instead of the typically narrow focus on income, multidimensional indicators of living standards, such as the vulnerability indices, have better explanatory power as predictors of both food insecurity and malnutrition. The data show that 27 percent of households that are food secure have malnourished children, a percentage only marginally lower than the 29 percent of households that are food insecure. The results also indicate a strong socioeconomic gradient in FNS outcomes, and note that food insecurity continues to be widely prevalent among tribal populations: nearly half of the households either face direct risks of food insecurity or constitute the borderline group. Of greater policy relevance are undernutrition outcomes, with roots running deeper and irrespective of food security alone: in about a fifth of the household both severe food insecurity and undernutrition co-exist. Assessing the multidimensional determinants and correlates of FNS outcomes in tribal communities highlights the key drivers of higher vulnerabilities faced by the tribal population in ensuring food security and preventing adverse nutritional outcomes. Notable among these include lower access to resources, dietary habits, and constrained access to food-based public safety nets, which jointly influence food insecurity, undernutrition and corollary health, and survival risks. The risks are accentuated by structural inequities in access to productive and economic resources, and poor quality and coverage of public services that has the potential to compensate for gaps in food and nutrition requirements.

The literature³⁸ suggests that malnutrition disproportionately affects tribal communities because of the disparities in average levels of multidimensional endowments – education, economic

³⁵UNICEF. 1990. Strategy for Improved Nutrition of Children and Women in Developing Countries, A UNICEF policy review, New York, N.Y., USA. Modified by Black, et al. *Lancet*, 2008.

³⁶Black, R.E., L.H. Allen, Z.A. Bhutta, L.E. Caulfield, M.D. Onis, M. Ezzati, C. Mathers and J. Rivera, for the Maternal and Child Undernutrition Study Group. *Lancet*, 2008; 371: 243–60.

³⁷<http://www.worldbank.org/en/news/feature/2013/10/09/inclusion-matters>

³⁸See, for example, Rao, H.D., K.M. Rao, G. Radhaiah and N.P. Rao. 1994. Nutritional status of Tribal preschool children in three ecological zones of Madhya Pradesh, *Indian Pediatrics* 31:pp. 635-640; Rao, H.D., K.M. Rao. 1994. Levels of Malnutrition and Socioeconomic Conditions among Maria Gonds, *Journal of Human Ecology*, 5:pp 185-190; Rao, K.M., N. Balakrishna, A. Laxmaiah, K. Venkaiah and G.N.V. Brahmam. 2006. Diet and nutritional status of adolescent tribal population in nine states of India, *Asia Pac J Clin Nutr*, 15 (1): pp 64-71; Rao V,G., R. Yadav, C.K. Dolla, S. Kumar, M.K.

activity, dependency burden, availability of land and other productive assets, basic civic amenities and public utilities such as electricity, pure drinking water and modern means of sanitation. Studies involving anthropometric assessments previewing on the significant extent of nutritional shortfalls in tribal children and adults, mostly explained to be caused by insufficient diet, improper knowledge, seasonal episodes of food scarcity, and interactions of varying proportions between these parameters. There is no dearth of contemporary literature in India that brings out important discourses on tribal underdevelopment being the lost side of India's recent progress.³⁹ This is further aggravated by displacement of tribal communities for the sake of development projects or instances linked with insurgencies and conflicts.⁴⁰ The phenomenon hinders basic infrastructure development in tribal regions, making the tribal population further marginalized and socially excluded.

2.1. Poor Food and Nutrition Outcomes

As the description of the framework implies and data confirm, malnutrition generally, and for tribal communities specifically, is the result of an interplay of factors operating at various societal, household and individual levels. Using the framework as a guide, this section explores the evidence available for each of these with a focus on Jharkhand and Odisha, our states of special interest as described in the first chapter. Mistakenly, a discussion on malnutrition often starts and ends with the preceding analysis of food security: tribal populations are malnourished, the thinking goes, because they simply do not have enough to eat. As we shall see below, this logic has its merits. However, as the theoretical foundations suggest and the Jharkhand 2013 data validate, food security and economic status only partly explain the risks of malnutrition. Indeed, behavioral factors related to health, sanitation and nutrition, child health conditions and access to health services are critical inputs to the aggregate FNS outcomes among tribal households. We will also turn to these topics following the discussion on food security and income. Incidentally, the results also emphasize the positive influence public programs and interventions can have on FNS outcomes which we will turn to in the next chapter.

2.1.1. Low Food and Nutrition Outcomes and Community Perceptions

As described in the previous chapter, tribal populations do indeed have poorer nutrition outcomes compared to other groups and the general population. However, systematic comparisons of tribal and nontribal populations in terms of FNS outcomes are relatively rare in the Indian context. In a brief but informative piece, Das and Mehta⁴¹ highlight that Adivasi (or ST) children show worse levels of malnutrition compared to nontribals, largely attributable to chronic food insecurity and deeper poverty levels among tribal households. In another earlier study across all districts of undivided

Bhondeley and M. Ukey. 2005. Undernutrition and childhood morbidities among tribal preschool children, *Indian Journal of Medical Research*, 122: pp. 43-47; Mukhopadhyay, D.K., S. Mukhopadhyay and A.B. Biswas. 2010. Enduring starvation in silent population: A study on prevalence and factors contributing to household food security in the tribal population of Bankura, West Bengal, *Indian Journal of Public Health*, 54(2), pp. 22-27; Chakma, T., P.K. Meshram, P.V. Rao, S.B. Singh and A. Kavishwar. 2009. Nutritional Status of Baiga – A Primitive Tribe of Madhya Pradesh, *Anthropologist*, 11(1), pp. 39-43; Laxmaiah, A., K.M. Rao, R. Hari Kumar, N. Arlappa, K. Venkaiah and G.N.V. Barhmam. 2007. Diet and Nutritional Status of Tribal Population in ITDA Project Areas of Khammam District, Andhra Pradesh, *Journal of Human Ecology*, 21(2):pp 79-86; Basu, K., F. Chakraborty, K. Mitra and S. Bisai. 2006. Nutritional status of adult Santhal men in Keonjhar District, Odisha, India, *Food and Nutrition Bulletin*, 27(4), pp. 353-356; Bhattacharjee, L., G. Kothari, V. Priya and B.K. Nandi. 2011. The Bhil food system: links to food security, nutrition and health, in *Indigenous People's Food Systems* (Chapter 10), pp. 209-229.

³⁹The Other Side of Development: The Tribal Story. (Eds.): Arun K. Ghosh and Ram D. Munda, Konark Publishers, 2012, New Delhi; Social Exclusion and Adverse Inclusion. (Eds.): Dev Nathan and Virginius Xaxa, Institute for Human Development and Oxford University Press, 2012.

⁴⁰Roy Burman, J.J., 2013. Factors of Maoist Movement among the Tribes of Central India, *MAINSTREAM*, Vol. LI, No 49, November 23.

⁴¹ Das, M.B. and S.K. Mehta. Undated. Adivasis, Poverty and Social Exclusion in India Issue Brief, The World Bank. Available and accessed at http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1265299949041/6766328-1285599693282/India-PSE-Adivasis_Brief.pdf

Bihar state, Yadav and colleagues⁴² find that, although the proportion of malnourished children is largely similar between tribal and nontribal districts, chronic energy deficiency levels among adults is substantially high in the former areas. Also, nontribal districts tend to have better intake levels of proteins and other micronutrients. In tribal-dominated regions of Maharashtra, Tagade⁴³ also finds a higher incidence of food insecurity among the tribal population as compared to that of nontribals and, accordingly, a much lower nutritional status of tribal children than that of their nontribal counterparts.

The Jharkhand 2013 data show that nearly two-thirds of the tribal households (63 percent) suffered from nutrition insecurity, defined as incidence of any (relevant) forms of undernutrition by at least one member of the household: considering only child undernutrition, 43 percent of households experience child nutrition insecurity. In the same study, the self-assessed food insecurity estimates showed about 38 percent of households face food insecurity, and about 13 percent face severe forms of food insecurity along with hunger. The measure based on self-assessed food sufficiency indicated that nearly half of the households (45 percent) reported having enough ('sufficient') food for all family members throughout the year: however, more than a third can only manage sufficient food for only six to nine months, and manage on less-than-adequate amounts for the rest of the year. Overall, nearly 5 percent does not even manage to have sufficient food for half the year; those are the ones who suffer extreme hunger and starvation.

The Jharkhand 2013 data also allow us insights into how some members of the tribal communities view food security. For instance, one person in a focus group discussion (FGD) noted that "days with three meals are considered on par with festivals or days where they earn cash income." More generally, good days were thought to be from December to January corresponding to a period after harvest, and bad days between September and November and again between March and April. When asked, most noted that food insecurity was caused by a lack of land and low productivity of land due to poor irrigation. Other causes such as lack of jobs, lack of access to government services, especially due to misallocated below the poverty line (BPL) cards was commonly raised. Issues such as alcoholism and illness were also evident.

2.2. Insufficient Food Security

2.2.1. Dietary Intake and Diversity Remain Significant Constraints for Tribal Communities

Most studies reviewed for this Report have found that food intake of both tribal children and adults fall much below the recommended dietary allowances (RDAs) as laid down by the Indian Council of Medical Research (ICMR), particularly involving deficiencies in proteins and other micronutrients.⁴⁴ The National Nutrition Monitoring Bureau (NNMB) investigation, for example, found that only about 30 percent of the preschool and school age children had adequate intakes of both protein and calories; nearly half the adult men and women suffer from chronic energy deficiency, and there are significantly higher levels of undernutrition among preschool children in terms of all three standard anthropometric outcomes.

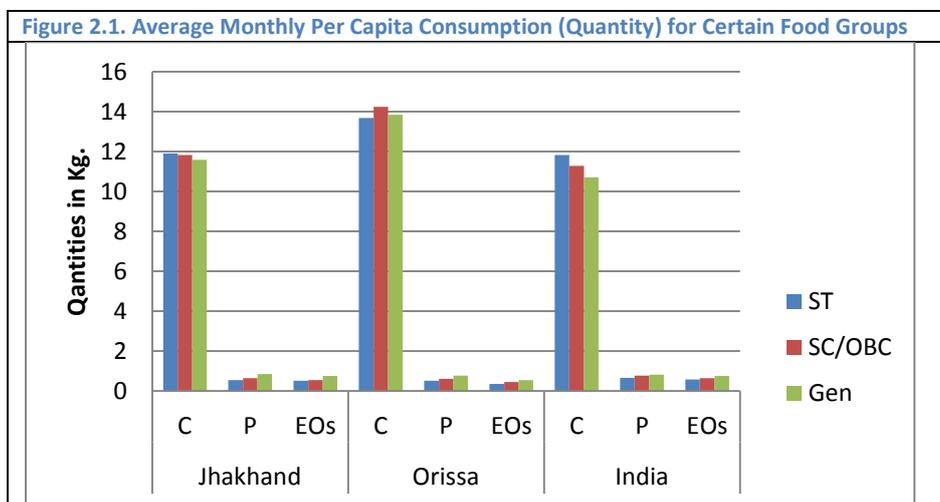
⁴² Yadav R.J., P. Singh and A. Kumar. 1999. Nutritional status of tribals and nontribals in Bihar, *Indian Journal of Preventive & Social Medicine*. Jul-Dec; 30(3&4): pp 101-6.

⁴³ Tagade, N. Undated. Food Insecurity in Tribal Regions of Maharashtra: Explaining Differentials between the Tribal and Nontribal Communities, ISEC Working Paper # 280, Institute of Social and Economic Change, Bangalore.

⁴⁴ The most representative study has been a large, nationwide survey of tribal households, conducted by the National Nutrition Monitoring Bureau (NNMB)/National Institute of Nutrition (NIN), with the main results summarized in: NNMB (2000): Diet and Nutritional Status of Tribal Population. NNMB Tech Report No. 19, NIN, Hyderabad, and in: NNMB (2009): Diet and Nutritional Status of Tribal Population and Prevalence of Hypertension among Adults: Report on Second Repeat Survey. NNMB Tech Report No. 25, NIN, Hyderabad.

The consumption of a wide variety of nutritious foods is important for an individual's health; however, a vast majority of tribal households in the country possess limited choice to expand their food basket, mainly due to economic reasons. NFHS-3 provides information both on women and men on how often they consume various types of food: daily, weekly, occasionally, or never. The survey clearly brings out the fact that women and men from STs have a relatively poor diet that is particularly deficient in fruits and milk or curd. Women and men in households with a low standard of living are less likely than others to eat each type of food listed, and their diet is particularly deficient in fruits and milk or curd. Milk or curd is consumed weekly by 33.5 percent and 41.8 percent of ST women and men, respectively. Consumption of fruits is less common among STs. About 72.6 percent of women do not consume fruits even once a week.

Information on regular consumption expenditure by the households from NSSO 66th round reveals a significant difference in food expenditure between tribal and nontribal groups across the major tribal-concentration states in India. This correlates highly with overall poverty levels in the respective states. Inequality in food expenditure is most prominent for consumption of milk and other animal products (eggs, meat and fish), with less intense differentials for cereals and other staple foods. For individual food items, a higher proportion of tribal households reported consumption of two food items, chicken and tubers, than nontribals; the results suggest that both levels and diversity of food consumption in tribal households are likely to have a strong nexus with poverty – higher average levels and predominance of locally-grown, domesticated or wildy collected food items coexist with lower levels of average expenses on food. The differentials of average food expenditure by the tribal and nontribal household (both including general and SC/Other Backward Class (OBC) social groups), in case of Odisha and Jharkhand are found significant (*for details see Table 3.1 IHD 2013*).



Source: NSSO 2009-10.

Overall, tribal households spend more on cereals and, to an extent, on vegetables across the states with a varying extent of magnitude of the difference. The calculation of consumption expenditure data from the NSSO 2009-10 round for different social groups in Jharkhand and Odisha reveal that expenditure incurred on pulses and edible oils was always lower in tribal families, even if it is marginal (Figure 2.1).

While this indicates a possible income effect explaining higher allocation to staple foods such as cereals, a matching substitution effect – whereby the tribals (and nontribals) in poorer states can be

expected to allocate a relatively lower proportion of food budgets to other items such as fruits and vegetables – though is not equally evident.

The findings of a more granulated region-level analysis, arrived at by clustering agro-climatic regions with similar tribal concentrations, suggest that average food expenditure of tribal families tends to be higher in regions where they account for a relative minority of the total population. Across the region-groups, tribals consistently spend a higher proportion of their total income on food than nontribals, with a higher share noted in regions where tribals account for about a quarter to less than half of the total population (*for details see IHD 2013*). The emerging pattern further suggests that while poorer tribal households tend to allocate a higher proportion of their food budgets to cereals vis-à-vis their nontribal counterparts of similar economic standing, the gap narrows down on moving up the economic status levels. Results for more basic expenditure distribution-based inequalities account for several important findings; a poor tribal household – in rural and urban areas alike – consistently and significantly spends a lower amount on food than a poor nontribal household, when one considers separate expenditure distributions for these groups.

2.2.2. Continuous Access to Food Remains a Substantial Problem for STs

In a sense, poor malnutrition outcomes, a measure of utilization, that motivate this study are sufficient to declare the country, or the two states of interest, food insecure. Yet, we can be more specific. As we noted above, the term food security combines several ideas, and it exists “when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”⁴⁵ In the section above, we noted that tribal communities lag behind the general population in expenditures on food. Consumption is understood to be a critical factor in ascertaining food access; physical access as measured by the presence of basic transportation infrastructure will be a point of discussion shortly.

Here we draw on secondary data to point out that tribal communities also lag in availability of food. Per capita availability of food grains is one indicator of overall food availability. In Jharkhand, it is 250 (gram (g)/day) as compared to 583 nationally⁴⁶ (2008-09) and 389.27 (g of cereals/day) in Odisha as compared to 420 at the national level of consumption in 2000.⁴⁷

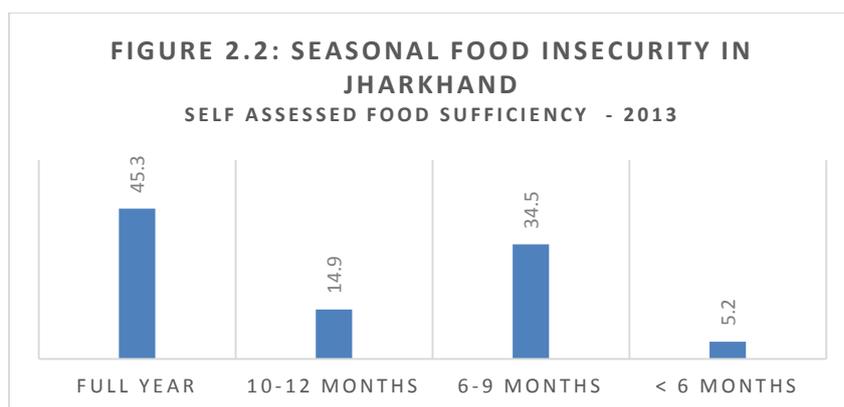
With regard to continuity of food access, we can turn to the primary data on the ST population in Jharkhand (Figure 2.2) to note that 55 percent of the population faces some degree of food insecurity at some point in the year. In a 2006 study, Chakravarty and Dand⁴⁸ found a direr situation in Gujarat where nearly three-quarters of the tribal households in Panchmahals faced severe food insecurity for more than six months a year, while only 19 percent faced the same situation amongst a comparable sample of nontribal households in Rajkot. Overall, only about 7 percent of the tribal households were found to be food-secure round the year.

⁴⁵FAO. 1996. Rome Declaration on World Food Security and World Food Summit Plan of Action. World Food Summit, November 13-17, 1996. Rome.

⁴⁶http://finance-jharkhand.gov.in/budgetjhr/download/economic_survey/economic_survey_201112.pdf

⁴⁷ UNWFP, Food Insecurity in Odisha, an analysis of secondary data, India.

⁴⁸Chakravarty, S. and S. Dand. 2006. Food Insecurity in Gujarat: A Study of Two Rural Populations, *Economic and Political Weekly*, June 3, 2006, pp. 2248-2258.



Source: Jharkhand 2013 data.

The implications of seasonal food insecurity can have devastating short- and long-term consequences. Our data from Jharkhand suggest that households and communities use progressive, more aggressive coping strategies in dealing with shortages. For acute shortages, of less than five days, there might be dietary changes such as reducing the number and quantity of meals, and borrowing food from friends/relatives and skipping meals by adults. In response to chronic shortages lasting longer, often during droughts or the monsoon months, more drastic measures are taken such as gathering wild fruits, outmigration, and distress selling of critical assets such as land, or withdrawing children from school to work. In places where grain banks are available, this was cited as a means to manage chronic shocks.

2.3. Inadequate Access to Health, Water and Sanitation Services

2.3.1. Tribal Children and Adults Lag Behind Other Social Groups in Health Outcomes

Table 2.1: Key health indicators, NFHS-3 (2005-06)

Indicators	ST	SC	Total
Infant mortality	62.2	66.4	57.0
Neonatal mortality	39.9	46.3	39.0
Prenatal mortality	40.6	55.0	48.5
Child mortality	35.8	23.2	18.4
Under-five mortality	95.7	88.1	74.3

Source: NFHS 2005-06.

The under-five mortality rate and child mortality rate are much higher for STs than any other social groups at all childhood ages (95.7 and 35.8, respectively). However, it is found that STs have a lower infant mortality rate (62.1) than SCs (66.4) but higher than OBCs (57). Even the prenatal mortality rate for STs (40.6) is lower than other social groups (Table 2.1).

As noted earlier, deficiencies in micronutrient intake is a serious contributor to childhood morbidity and mortality. Tribal children generally have poor micronutrient levels than children in other social groups. NFHS-3 showed that among all social groups, the percentage of ST children was the lowest in consuming foods rich in vitamin A in the day or night preceding the survey (43.8 percent). Only 21 percent of ST children age 12-35 months received vitamin A supplements in the six months before the survey. This figure reduced further to only 14.6 percent, among children age 6-59 months. Further, about 76.8 percent of children belonging to the ST category were anemic: 26.3 percent were mildly anemic, 47.2 percent moderately anemic and above 3.3 percent severely anemic.

The health status of tribal adults is also generally poorer than adults in other social groups; within groups, women are worse off than men. The highest proportion of tribal women was found to be

below 145 centimeter (cm) in height (12.7 percent) as per the records of NFHS-3, compared to all other social groups. This indicates a scenario of chronic energy deficiency among tribal women. Chronic energy deficiency is usually indicated by a Body Mass Index (BMI) of less than 18.5, the level as per NFHS-3 is found among 46.6 percent tribal women, which undoubtedly indicates a high prevalence of nutritional deficiency. The mean BMI is similar for ST men (19.3) and women (19.1) aged 15-49. Around 41.3 percent of men aged 15-49 are found to be thin (<BMI estimates 18.5).NFHS-3 also measured anemia in women and men where mild anemia (10.0-10.9 g/deciliter (dl) for pregnant women, 10.0-11.9 g/dl for nonpregnant women, and 12.0-12.9 g/dl for men), moderate anemia (7.0-9.9 g/dl for women and 9.0-11.9 g/dl for men), and severe anemia (less than 7.0 g/dl for women and less than 9.0 g/dl for men). Tribal men and women, as per the cut-off mentioned above, are found to be highly anemic among all social groups, while 68.5 percent of women and 39.6 percent of men tested for anemia were found lacking the required standards. Overall, 44.8 percent of tribal women are found mildly anemic, 21.3 percent moderately anemic and 2.4 percent severely anemic.

2.3.2. STs Face Gaps in Health, Water and Sanitation and Other Services Essential for Nutrition

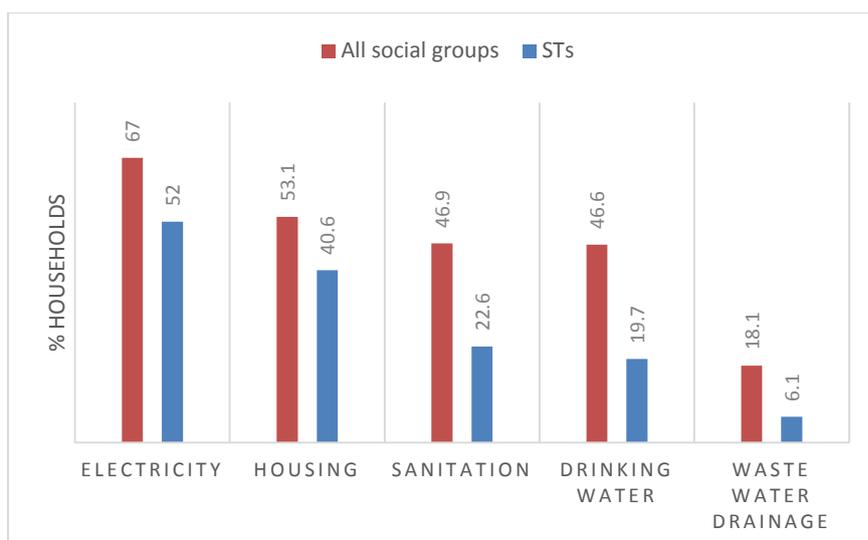
The supply of health services is quite poor in tribal areas. According to the Ministry of Health and Family Welfare (MoHFW) figures, in 2008, a very dismal picture of health of human resources is evident in tribal districts. Often, in spite of the physical existence of a large number of Primary Health Centers (PHCs) established in government buildings across the states, availability of doctors at PHCs in the tribal areas remains one of the biggest challenges. There is also a massive shortfall of nurses, midwives and staff nurses at PHCs and Community Health Centers (CHCs) in tribal areas. The phenomenon is random in Odisha with 799 vacant posts in the said categories, followed by Madhya Pradesh with 646 and Chhattisgarh with a shortfall of 556 nurses/midwives/staff nurses. There also remains a shortfall of laboratory technicians at PHC and CHCs in TABAs, mainly in Odisha, Chhattisgarh and Madhya Pradesh.⁴⁹

The poor supply of services is matched by low utilization. As per the estimates of NFHS-3, the likelihood of receiving care from a doctor is the lowest for ST mothers (only 33 percent compared to the all India total of 50 percent and 42 percent for SCs). Among ST children who suffered from diarrhea in the two weeks preceding the survey, nearly one in every three did not receive any treatment. Less than two-thirds of tribal women knew about oral rehydration salts packets. Only about half the tribal children surveyed reportedly received services at an Anganwadi center (AWC), with about a third (33 percent) receiving any immunization through these centers. Only 27 percent of ST women visited a health facility or camp for themselves or their children in the three months preceding the survey. Notably, distance emerges as a major barrier (44 percent women reporting it as a major reason) in preventing women from visiting health centers to seek treatment or related health service. Again, compared to about 19 percent of women overall reporting that no female health care providers were available at these facilities, the proportion in the case of ST women was a high of 28 percent.

Other essential services, especially those related to water and sanitation, demonstrate a similar pattern of poor service delivery. As per Census 2011, 41 percent of ST households had permanent houses, 19 percent had a drinking water source on the premises, 52 percent had access to electricity, 23 percent had a latrine facility and only 6.1 percent had connectivity for a wastewater outlet through a closed drainage system (Figure 2.3).

Figure 2.3. Tribals Trail in All Amenities

⁴⁹Ministry of Tribal Affairs. 2010. Statistical Profiles of Scheduled Tribes in India, Statistics Division, Government of India.



Source: Census 2011.

As shown by the World Bank (2011), underdeveloped regions of different states are most likely to have a high concentration of tribal population. It is true that the lack of physical infrastructure in tribal areas often restricts implementation of vital government programs in linkage with, for example, production, anti-poverty, education and anti-exploitative programs.⁵⁰ Infrastructure is largely a matter of state provision, rather than one of per capita income or consumption. The ST areas are often found ill-equipped compared to the rest of the country in terms of roads, electricity and health infrastructure.⁵¹ It will definitely require substantial impetus in terms of development of supportive infrastructures across physical, institutional and administrative. Capital intensive sectors such as large and medium industries, roads and bridges, mining, power, and road transport may be given lower priority unless their spin-off effects as such yield a great economic impact on the tribal economy.

Despite the critical importance of water and sanitation services, they are generally missing or, as was the case with health, of poor quality in tribal communities (though this is true for India generally).

Household social group	Rural	Urban	Combined
ST	237	157	228
SC	131	107	126
OBC	120	87	111
Others	130	80	108
All	138	89	124

Source: NSSO Housing Conditions and Amenities in India, 2008-09.

Tribal households have lower access to clean water, especially purified drinking water. The 2008-09 NSSO survey on housing amenities found that a much higher proportion of tribal households in

⁵⁰ Panda, N. 2006, Tribal Development: Imperatives and Compulsions, Odisha Review.

⁵¹ Sarkar, S., S. Mishra, H. Dayal and D. Nathan. 2006. Development and Deprivation of Scheduled Tribes, *Economic and Political Weekly*, Vol. 41, No. 46 (November 18-24, 2006), pp. 4824-4827.

the country do not get sufficient drinking water throughout the year (Table 2.2), as compared to any other social group, across rural and urban locations.⁵² The Census 2011 data show that slightly over half the tribal households in India (53.8 percent) had access to water that comes from treated sources (that is, taps, hand pumps, and so on), as compared to 65.5 percent average households accessing such sources. Further, only 19.6 percent tribal households had partially safe drinking water (that is, untreated tap water, covered well, tube well or borehole, and so on) as compared to 21.6 percent of general households. A greater portion of tribal households (26.6 percent) used unsafe water compared to an overall average of 12.9 percent. The Jharkhand tribal survey (2013) similarly finds that while 84 percent of the households have access to improved means of drinking water (such as tube wells, hand pumps or protected wells), less than a fifth of these households use any means to purify the drinking water or store it hygienically.

Even more troubling is the situation for sanitation facilities. In rural areas, the highest proportion of non-availability of a toilet facility was noticed in the case of ST households (74 percent) and availability of a within-premises toilet facility was lowest among ST households (nearly 6 percent)(NSSO 2008-09). Even Census 2011 estimated only around 23 percent tribal households at a pan-India level had access to toilets, which is seen to be about half of that reported by the overall population (46.9 percent). Two-thirds (75 percent) of the tribal households in India have no access to latrines, compared to the national figures of 50 percent. The Jharkhand survey (2013) showed that less than 2 percent of tribal households have proper drainage facilities or modern toilet facilities, highlighting significant public health risks.

2.4. Poor Care Practices

2.4.1. STs also Lag in Maternal and Child Care

NFHS-3 indicated an almost similar rate of antenatal care uptake by the tribal mothers (Table 2.3), compared to figures reported by SCs and others. Half the women giving births in the past five years received antenatal care in Jharkhand; in Odisha, nearly 78 percent reported receiving such care.

A critical indicator for prevention of anemia in pregnancy remains whether women consume the recommended dosage of Iron Folic Acid (IFA). The percentage of ST women consuming IFA for at least 90 days and taking a drug for intestinal parasites during pregnancy was only 17.6 and 3.7, respectively. In Jharkhand, IFA supplementation consumption for 90 days was found only among 15 percent of the women compared to double the rate (32 percent) found among ST women from Odisha. This apart, only about 5 percent of women received drugs for intestinal parasites (which may act as a shield for increasing the absorption capacity of nutrients consumed during pregnancies) both in Jharkhand (5.1 percent) and Odisha (4.3 percent).

Receiving obstetric care from a trained provider during delivery is recognized as critical for the reduction of maternal and neonatal mortality, but less than a fifth (17 percent) of the deliveries among ST women was assisted by health personnel, compared with 47 percent of those from upper castes/social groups. Professional assistance at delivery is found in about 15 percent of births in Jharkhand and 17 percent in Odisha.

However, while almost 39 percent of the average deliveries are found to have taken place in institutions, the rate is found abysmally low in case of tribal mothers. In case of Jharkhand, only 8

⁵²NSSO Housing Condition and amenities in India, 2008-09.

percent of ST births were institutional, compared to 15 percent among SCs and 21 percent in the general population. A similar rate for Odisha in STs is 12 percent compared to 30 percent in SCs and 36 percent institutional births, in general.

Table 2.3: Some key health indicators as per NFHS-3 (2005-06) in India

	ST	SC	Overall
Antenatal care check up	70.5	74.2	77.1
Percentage institutional delivery	17.7	32.9	38.7
Childhood vaccination	31.3	39.7	43.5
Children breastfed within an hour of birth	28.5	23.2	25.2
Median duration of predominant breastfeeding (in months)	6.2	5.3	6.4
Percentage of children (6-23 months) fed with 3 IYCF practices	14.0	18.8	20.7
Percentage of children (6-23 months) fed with 3 or more food groups	14.3	19.6	22.1

Source: NFHS, 2005-06.

Tribal communities appear to have poorer infant and young child feeding (IYCF) behaviors. In case of childcare, as per the recommendation on preferable initiation of immediate breastfeeding after one hour of birth, slightly less than one-third (28.5 percent) of the ST infants are found initiated with the highly nutritious first breast milk (colostrum). The rate is comparatively higher than among SCs (23.2 percent), as also in general (25.2 percent). However, only 10 percent of ST infants in Jharkhand were given colostrum, compared to a similar situation among SCs (9.6 percent) and in general (11.2 percent). The scenario in Odisha was much more encouraging with 52 percent of the ST newborns given colostrum, compared to 61 percent among SCs and 55 percent in general. With regard to access to supplementary foods, nearly 22.1 percent of children between 6-23 months in general were found to be fed with three or more food groups, in comparison to only 14 percent among tribal children of a similar age (Table 2.3). The scenario was no better in Jharkhand and Odisha, with only 17 percent of ST children aged between 6-23 months fed the recommended three groups of foods in Jharkhand and 8 percent in Odisha.

Table 2.4: Vaccinations of children aged 12-23 months

Social groups	Received all basic vaccines	Received no vaccine
ST	31.3	11.5
SC	39.7	5.4
OBC	40.7	3.9
Others	53.8	4.3
Total	43.5	5.1

Source: NFHS-3, 2005-06.

Overall uptake of childhood vaccination was also found to be lower in the case of under-two tribal children compared to the rest (Table 2.4). Less than a third (31.3 percent) of ST children was found to be fully vaccinated as compared to 53.8 percent for others. A total of 11.5 percent of

ST children had no vaccinations at all. In Jharkhand, while about 4 percent of ST children between 12-23 months received no vaccination, the deprivation was much higher in Odisha (22 percent). However, the proportion of ST children who received all recommended doses of vaccines are comparable in the two states: 29 percent in Jharkhand and 30 percent in Odisha.

Regarding child nutrition and particularly IYCF practices, a few facts emerged from the last NFHS-3 data. As shown in Table 2.4, children from tribal households, although experiencing better breastfeeding practices such as early initiation and duration of predominant breastfeeding, appear to face lower levels of complimentary feeding practices. The percentage of children from nontribal households, as well as overall sample averages, are higher than that of tribal children in terms of proportion of children availing of the three recommended IYCF practices or enjoying a diverse diet, as the NSSO results pointed out in the previous section. A similar scenario of poor levels of complimentary feeding and weaning practices also emerges in the case of tribal households in

Jharkhand and Odisha, indicating that children from these households face a significant handicap in terms of inadequate supporting nutritional diversity, which is critical for both overall nutritional status and its balance.

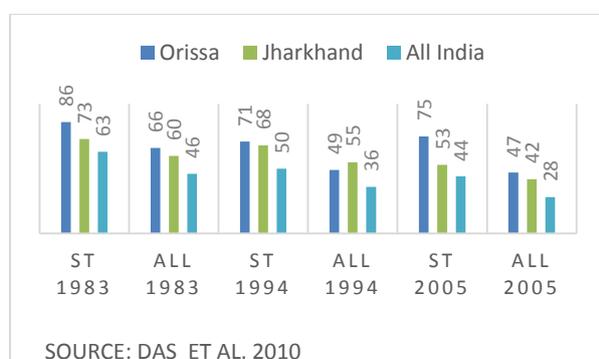
The Jharkhand 2013 data developed a composite index from an array of optimal ‘household health and sanitation behavioral practices’ such as handwashing or safe water use, which is an indicator of better absorption of nutrients consumed. They found that about 23 percent of the households had poor practices in general, while about 16 percent observed most of the good, hygienic practices.

Education is understood to be a critical input for parents in providing optimal care for themselves and their children: tribal communities lag behind even in this attribute. The literacy rate shows an increase in case of the tribal population in India, but this increase has been slower than that in the general population. The rate rose from 8.53 percent in 1961 to 47.10 percent in 2001 and is recorded at 59 percent in Census 2011; the corresponding increase for the total population was from 28.30 percent in 1961 to 64.84 percent in 2001 and 73 percent in 2011. Between 1991-2001, a 17.5 percentage point increase was observed in the tribal literacy rate, against 12.63 percent increase in the total population. Similarly, for 2001-11, literacy rates among STs declined at a faster rate (12 percent) as compared to the overall population (8 percent). The gross enrollment ratio (GER) for the elementary stage (Classes I-VIII) is defined as the percentage of enrollment in the elementary stage to the estimated child population in the age group of six to 14 years. The GER for STs in the elementary stage of education has improved considerably from 1990-91 to 2007-08. The GER for ST girls improved from 60.2 in 1990-91 to 104.2 in 2007-08,⁵³ the increase is found more pronounced as compared to other social groups. From 2003-04 to 2007-08, the GER was higher for STs than SCs and the total population, both for males and females. The Gender Parity Index in elementary education for STs has increased from 0.6 in 1990-91 to 0.9 2007-08. Drop-out rates for all India from Classes I to V fell steadily over the years from 42.6 in 1990-91 to 25.6 in 2007-08. A similar decline in the dropout rates of the ST population was observed from 1990-91 (62.5) to 2007-08 (32.2). Dropout rates are considerably lower for both boys and girls and have declined continuously since 1990-91 which shows a remarkable improvement in the quality of education for STs. However, there remains a differential in learning outcomes, unfavorable for first generation tribal children, particularly those who attend government schools (Desai et al. 2010).

2.5. High Income Poverty

2.5.1. STs Face Higher Levels of Poverty and Low Levels of Income which Translate to Lower Food Security

Figure 2.4. Poverty Incidence (%)



⁵³ Statistics of School Education, Ministry of Human Resources Development, 2006 -07 and Abstract of Statistics of School Education 2007- 08.

The official estimates show that income poverty declined from 55 percent in the early 1970s to 28 percent in 2004-05, but states with larger tribal populations have lagged behind. In states with high tribal populations (about 10 percent of the state’s total population), ST households exhibited poverty rates that were higher than across the nation as a whole in 2004-05 (with the exception of Assam). The highest poverty rates recorded for tribal groups were in Odisha, with the tribal population in the state registering a head count ratio of 75 percent in 2004-05, an *increase* of about 6 percent from 1993-94 levels. Tribals in rural areas in Odisha were particularly worse off, with poverty levels among the group declining at a slower pace (13 percent) during 1983-2005 compared to a decline of 44 percent for other groups (non SCs and STs). Tribals in rural areas in Madhya Pradesh, Maharashtra, Rajasthan, Jharkhand and Chhattisgarh too recorded far lower declines in poverty than other groups (Das et al. 2010) (Figure 2.4). The overall level of chronic childhood malnutrition in states having higher tribal populations accounts for higher rates, as per NFHS-3.

The Jharkhand 2013 data confirm that higher income translates almost directly to higher food security, but FNS outcomes in the richest quintile are still poor, and dietary diversity (indicating qualitative aspect of food security), in particular, is an issue across the board. Overall, 86 percent of the richest quintile is food secure compared to only 33 percent of the poorest. Further, 27 percent of the poorest quintile suffers from acute lack of food security, or hunger, while only 8 percent of the richest quintile does. However, the data show the phenomenon of food insecurity is pervasive even in the richer households. Nearly, 15 percent in the richest quintile is found food insecure, 70 percent has low or moderate food frequency scores, 75 percent has low or moderate dietary diversity, and 25 percent report not having enough food to last the entire year. Indeed, poor dietary diversity is a common theme across socioeconomic profiles. Even in households that have some measure of food security, the quality of that diet is quite poor in terms of dietary diversity. This is

perhaps another reason that food security is not translating to higher nutrition outcomes.

Table 2.5: Employment classification of self-employed men, NSSO 61st round

Classification	STs	SCs	OBCs	General
Professional and technical	60.55	28.50	42.82	37.51
Clerical	0.09	0.08	0.29	0.43
Sales	16.78	20.54	22.05	37.06
Service	1.18	6.04	6.58	2.51
Other manual	21.40	44.83	28.28	22.49

Source: Adapted from World Bank, 2011.

The issue of quality diet is further shored up by the observation from NSSO data that show tribal households spend a higher proportion on cereals and staples.

Proportional allocation of households’ food budgets for cereal consumption steadily declines as economic status improves. About 40 percent of the monthly food expenditure is found to be incurred on cereals by the poorest deciles of tribal households, compared to their counterparts among nontribal households that are found to incur 34 percent of food expenditure on cereals. The scenario changes markedly for the richest decile households, with nontribals spending less than one-fifth of the monthly food budget on cereals. However, even the richest decile tribal households demonstrated a much higher proportional spend on staples (approximately 30 percent of the total food expenditure). On the other hand, for food-items of higher cost/quality and offering a more varied nutrient intake (measured in terms of eggs, fish and meat), tribal households are found to devote a lower proportion of food budgets. Broadly, economically better-off nontribal, urban households consume higher levels of these food items than tribal households of comparable economic status. The reasons for higher spending on cereals than on high-nutrient food items, even when tribal households have the ability to pay, needs further investigation. However, the issue of nonavailability of food items of higher nutrient values in tribal areas cannot be ruled out.

2.6. Lags in Basic Drivers of FNS outcomes

2.6.1. Tribal Communities are Physically Isolated

Remote habitations of the tribal population, often closer to forests, make them isolated from an average locality. Consequently, these localized concentrations fail to influence political agenda (World Bank 2011). Even in states such as Chhattisgarh and Jharkhand that were originally carved out of the parent states of Bihar and Madhya Pradesh to protect tribal rights, since they possessed more than 60 percent nontribal populations, the case for tribals is not compelling enough for political parties to focus on real issues that affect tribals (Guha 2007; Xaxa 2001). A work by the Planning Commission studies militancy, underdevelopment and marginalization of tribes in India since independence (GoI 2008). The World Bank (2008a) denotes that the concentration of poverty at the district level is strongly correlated with the proportion of the tribal population in the respective districts. Also even in rich states such as Gujarat, lagging districts with high tribal concentrations could be explained only by lack of voice of the tribals in securing their rights.

However, the fact is reaffirmed by statistics that, in an alternative situation, tribal individuals are able to establish themselves with required 'dignities,' most possibly when they move out from the remote, forest-based isolated localities. As can be observed from Table 2.5, among tribal men who are self-employed in nonfarm jobs, an overwhelming 60 percent are found to be in professional or managerial occupations (World Bank 2011). This group, undoubtedly, is meager in number, along with another handful of government officials who are able to gain the benefit of reserved government jobs. The earlier study conducted by the Institute of Human Development (IHD) (2013) in 600 households across four districts in Jharkhand found that casual wage labor (both agricultural and nonagricultural) remains the major income-earning activity of the study population (45 percent), followed by agriculture (34 percent) and salaried work/other services (22 percent). It is often hard to find suitable tribal candidates for certain reserved public sector jobs, and inequality could be observed in terms of certain specific tribes dominating the opportunities (World Bank 2011). However, creating favorable social and economic spaces in harmony with all preferences, including food choices, certainly is a challenge for the tribal population.

2.6.2. Forests and Lands upon which Tribals depend are shrinking for Many Reasons

Shrinking size of landholdings is becoming a common phenomenon in the country in contemporary years. However, considering tribal dependence on land as the major means of production, issues of tribal land fragmentation and alienation, loss of housing and of control over natural resource, become crucial. Estimates show⁵⁴ that, in 2005-06, of a total of 16.9 million hectares (ha) of operational holdings by STs in the country, a majority of individual holdings was below an average of 0.5 ha, signifying predominance of small landholders. Further, based on NSSO estimates on the average size of land-holding,⁵⁵ a large reduction in average size of land owned by the tribals is observed (that is, from an average size 2.16 ha in 1983 down to an average of 0.99 ha in 2004-05). This alienation, to a large extent, explains poor outcomes among tribals, affecting traditional food practices, forcing many to migrate out of their original homes. An earlier study conducted by IHD (2013) in Jharkhand showed about 13 percent of the 600 households surveyed across four districts did not own any agricultural land. Among the land-owning households, the average size of land owned is about 0.91 acres, with about 27 percent of the households owning land in excess of an acre. Leasing in or out of agricultural land is rare.

A greater issue than declining land holdings is the quality of the land tribals do have as measured by productivity and distance from markets. The real issue of land ownership may not only relate to

⁵⁴ Agricultural Census, 2005-06, Department of Agriculture and Co-operation, GoI.

⁵⁵ World Bank, 2011. Poverty and Social Exclusion in India, pp 65, Washington D.C.

the size of the land held by tribal households.⁵⁶ In a state like Odisha, where land owned by tribal households is often located in sloped terrain, on hills in the catchment of watershed areas, it suffers from both low agricultural productivity and *distance from markets*. The IHD study (2013) in Jharkhand showed, on an average, less than a third of the total land under cultivation owned by the tribal households was fertile or arable land, with the rest mostly barren, rocky and suitable only for growing coarse crops. Irrigation, combining all sources, remains scarce with only about a quarter (26 percent) of the land-owning households having some amount of irrigation for their crops. However, rarely is irrigation available for the entire land cultivated by farming households; at best only half of the cultivated land enjoys irrigation support, the rest being left for rain fed crops. Distance from market, overall, remains an issue even for households that base their mainstay on forests produce, that is, non-timber forest produce, where opportunities to establish connections with markets continue to remain limited, especially through potentially predatory intermediaries. Hence, consequently, long distances from markets reduce the possibility of using economies of specialization, which may have potential to transform the tribal economy, given direct market linkages are provided to these remotely located population groups.⁵⁷ Hence, limited access to opportunities for agricultural expansion that can increase productivity and establish linkages with markets, in turn, influence FNS issues among tribals.

Forest cover is also disappearing. Tribes as indigenous communities are largely dependent on natural resources for sustaining their lives and livelihoods. This centers around two major means of production, that is, forest and land, which are often described as twin pillars of the tribal economy.⁵⁸ As per the Sixth Schedule of the Constitution,⁵⁹ it is estimated that about 60 percent of India’s forest cover lies in the 187 districts that are inhabited by the tribal population. However, a recent observation reveals that, over the last few decades, about 84 percent of tribals that live in forests are increasingly becoming exposed to risks of resource depletion.⁶⁰ Depletion in forest resources, in turn, further aggravates problems due to relatively lower alternative capabilities of households that live on forests produce. It is evident that threats to forest-based livelihoods, as being practiced by the tribal communities, largely affect income capacities, raising challenging issues related to food security. Studies in Odisha show that illegal cutting of forests by nontribal invaders is affecting tribal livelihood,⁶¹ and a proportional decrease in forest cover for transformation into coal mines has been common in Jharkhand since the 1980s.⁶²

Development activities	Number of tribals displaced (in million)
Dams	6.32

⁵⁶Shah, A. 2012. Poverty and Livelihoods in Forest-based Regions of Southern Odisha: Evidence and Policy Imperatives. In (Eds.) D. Nathan and V. Xaxa, *Social Exclusion and Adverse Inclusion: Development and Deprivation of Adivasis in India*, Oxford University Press.

⁵⁷Nathan, D. and V. Xaxa.2012. Introduction and Overview. In (Eds.) D. Nathan and V. Xaxa, *Social Exclusion and Adverse Inclusion: Development and Deprivation of Adivasis in India*, Oxford University Press.

⁵⁸Ambagudia, J. 2010. Tribal rights, dispossession and the State in Orissa. Special article, *Economic and Political Weekly*, Vol- XLV, No. 33, August 14, 2010.

⁵⁹ Ministry of Environment and Forests. 2003. Sixth Schedule to the Constitution (Amendment) Act.

⁶⁰ Raza, M. and A. Ahmed. 1990. An atlas of the tribal India. pp 38, New Delhi: Concept. Shah, M. et al. 1998. *India’s drylands*. New Delhi: Oxford University Press.

⁶¹ Siva Prasad, R. and K. Eswarappa. 2007. ‘Tribal livelihood in a limbo: Changing tribe-nature relationship in south Asia.’ In: *At the crossroads: South Asia research, policy and development in global world (69-78)*. Pakistan: SDPI & SAMA.

⁶² Bhushan, C. and Z. Hazra. 2008. Rich lands poor people – Is ‘sustainable’ mining possible? Centre for Science and Environment, New Delhi, August.

Mines	1.33
Industries	0.31
Wildlife	0.04
Others	0.12
Total	8.53
Source: Fernandes, 1994.	

One major factor driving land alienation is the conversion of agricultural and forest lands for mining and development. A majority of the tribal population in India lives in regions that are rich in mineral reserves. Tribal areas produce most of the country's coal, mica, bauxite and other

minerals and, hence, the population has been the most affected in the process of development. It is estimated that due to rapid industrialization in tribal areas, around 1.33 million tribals have been displaced from their ancestral lands only due to mining operations (Table 2.6). Encroachment by mining activity adversely affects lives and livelihoods of thousands of tribals, since they are displaced from their usual habitats and also water tables are depleted through excessive groundwater extraction, which degrades fertile agricultural land and forest cover.⁶³ Expansion of new mining areas in Jharkhand in the 1990s (then part of Bihar) created large-scale economic impacts on the tribal population through deteriorating natural resources and land productivity.⁶⁴ This, as collective forces exerted adverse influences on the way tribal communities produce food and establish linkages with the market, impacted the course up to the final outcome of nutrition gained from the intake of meeting suggested calorie requirements.

2.6.3. Tribals Have Reduced Access to Credit and Jobs

Tribal indebtedness is another major cause of land alienation. A poor network of public banks in remote rural locations and difficulties in access to credit from public sources often compel those in need to go for private borrowings, with abysmally high interest rate. Consequently, it leads to the cycle of indebtedness eventually ending in seeking permission to transfer their land to repay the loan.^{65,66} The India Human Development Survey (2005) found only 10 percent of tribal women had individual or joint bank accounts.⁶⁷ Census 2011 notes that, as compared to an average 58.7 percent Indians, only 44.98 percent tribals in India avail banking services, which is largely biased for tribal populations based in urban locations. Rao (2005)⁶⁸ reports mechanisms through which local contractors have made illegal lease arrangements causing a large number of Santhal households to give up their land to the contractors for stone quarrying. Also, land rights insecurity exposes tribals to shocks such as eviction and displacement, and often prevents them from accessing basic entitlements or credit.⁶⁹ Limited access to formal credit opportunities from public sector banks/financial institutions forces many tribal households to sell lands, the only asset they possess, to repay high interest on loans. This, in turn, economically incapacitates many tribal families by shrinking household income, and making them destitute after being evicted from their own lands. Hence, restricted credit worthiness too becomes a crucial driver of tribal FNS.

There are several significant livelihood implications of a shrinking resource base. First, there has been a decline in rural work participation and a proportional increase in marginal workers. The overall workforce participation rates (WPRs) among the tribal population in the country have

⁶³ Mahapatra, L.K. 1991. "Development for Whom?" *Social Action*, 41:3:271-287.

⁶⁴ Aareparampil, M. 1996. Displacement due to Mining in Jharkhand. *Economic and Political Weekly*, 31(24): 1524-1528.

⁶⁵ Mander, H. 2002. "Tribal Land Alienation in Madhya Pradesh: The Problem and Legislative Remedies." In: *Issues of Equity in Rural Madhya Pradesh*, Ed. P. K. Jha, 82–104. Vol. 7 of *Land Reforms in India*. New Delhi: Sage Publications.

⁶⁶ Roy, D. 2002. "Land Reforms, People's Movements and Protests." In: *Issues of Equity in Rural Madhya Pradesh*, Ed. P. K. Jha, 33–50. Vol. 7 of *Land Reforms in India*. New Delhi: Sage Publications.

⁶⁷ Desai, S., A. Dubey, B. Joshi, M. Sen, A. Shariff and R. Vanneman. 2010. *Human Development in India: Challenges for a Society in Transition*. New Delhi: Oxford University Press.

⁶⁸ Rao, N. 2005. "Displacement from Land: Case of Santhal Parganas." *Economic and Political Weekly* 40 (41): 4439–42.

⁶⁹ Dubochet, L. 2013. Making Post-2015 Matter for Socially Excluded Groups in India, Oxfam India working papers series, January 2013, OIWPS – XIX.

witnessed an increase between Census periods 1991 (37.5 percent), 2001 (39.1 percent) and 2011 (39.8 percent). The average improvement in work participation in rural India is most likely a response to the launch of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) in 2005 that aims at 100 days of guaranteed wage employment in a financial year to every rural household that had an adult member volunteer to do unskilled manual work. However, the pattern of work participation specifically among the rural tribal population does not subscribe to the effects of MGNREGA, which, in fact, shows a marginal decline in WPR from 44.8 percent in 2001 to 43.5 percent in 2011. This apart, economic engagement of tribal workers on an average and in rural areas as marginal workers shows an increase in the recent period (2011), reaching a mark of 35.2 percent of the total and 36.7 percent of the rural workers, as marginal workers. The tribal proportion of marginal workers is higher compared to that of the average population (24.8 percent) and SC population (29.3 percent). This may signify the fact that tribal workers are being engaged in a more casual work that lasts for a temporary period in a year, but may not give them enough to live on for the rest of the year. The issue of marginalization of tribal laborers needs further investigation in the light of evidence emerging from recent literature. An earlier study conducted by IHD (2013) in 600 households from four districts of Jharkhand showed that, males (15 years or older) were found to have a higher a WPR (79 percent) as compared to females (67 percent). As for the occupational categories, about 40 percent of working males, and 66 percent of the females were engaged in agriculture, or other primary sector activities; among males a majority was engaged as casual wage labor.

Further, there has been a decline in the number of agricultural laborers and cultivators. One can also observe the nature of work tribal workers are engaged in. As observed from Census 2011, there has been a decline in the share of cultivators among the tribal population (from a total of 44.7 percent, rural 47.1 percent in 2001 to a total of 34.5 percent and rural 36.9 percent in 2011). On the other hand, the trend shows an increasing proportion for tribal agricultural laborers (from 36.9 percent total, rural 38.4 in 2001 to 44.5 percent total and 47.1 percent rural in 2011). It establishes a shift of cultivators into agricultural laborers, once they lose lands. The issues of landlessness among tribals have been a subject of contemporary public discussion.⁷⁰ The concern points to dispossession from land and commercialization of agriculture, as leading to change of cultivators into laborers both for the short term (that is, sugarcane or cotton harvesting) or a comparatively longer term as laborers in brick kilns or the construction industry. The phenomena of occupational shifts and dispossession of land can tremendously drive risks for FNS among the tribal population, restricting their choice of production of food varieties that they are used to, and limiting control of means of overall production.

Finally, an obvious implication of the loss of land and livelihoods is that it virtually deprives tribals of shelter and living conditions which, in turn, affects FNS outcomes. Census 2001 noted that only 24.4 percent ST households had permanent houses and 51.4 percent had semi-permanent houses, while 24.2 percent had only temporary structures. In these temporary structures, while 60.5 percent structures had walls made of mud, wood, and so on, 39.5 percent were non-serviceable structures in which the wall was made of grass, thatch, bamboo, and so on. Overall, 40.6 percent of the tribal houses were found to be in good condition, compared to 53.1 percent of similar quality, on an average, during the 2011 Census period. In recent years, due to the successful implementation of the Indira Awaas Yojana (IAY), many tribal families are being able to get houses of their own. The record shows that, in Jharkhand, around 26,007 houses were completed in 2007; 18,274 houses completed and allotted to tribal families in 2008, and an additional 32,973 houses have been sanctioned in 2009. There are similar statistics for Odisha: 23,221 completed houses under IAY in 2007; 36,003 completed and allotted to tribal families in 2008; and, in 2009, another 28,715 have

⁷⁰Subodh Varma, November 10, 2013, *Times of India*, Tribals lose land, forced to become farm workers.

been sanctioned.⁷¹ A recent study by IHD in Jharkhand (2013) found, across 600 surveyed households, most residential houses were built of mud and with thatched roofs/earthen floors. In terms of the household environment, 16 percent did not have separate kitchens or cattle-sheds, 28 percent had at least one of these units separate from the place where the family members stay, and about 57 percent had separate kitchens and cattle-sheds. Good housing, undoubtedly, is one of the core factors that expands opportunities for a better quality of life, which is often mentioned as 'life chances.'⁷² Mobility up the social ladder, to a considerable extent, determines the way an individual lives. Hence, loss of control over own lands, poor housing conditions and also, sometimes, risks of destitution act through many complex pathways for the tribal population in the country, driving their preference, supply and adequacy of food supply; in other words causing insecurity of food and nutritional needs.

2.6.4. Tribal Children Face Cultural Discrimination and Have Limited Political Voice

Limited research on the nuances of the tribal cultural space in contemporary India does not allow a great understanding on all the discriminatory pathways that makes limited space for tribal culture in the mainstream sociocultural contexts of the country. However, some useful indication could be based on a discussion on social discrimination against tribal children that belong to vulnerable backgrounds. This sometimes is explained by the indifferent attitude of teachers as well as school policies towards these children leading to outright discrimination against children from minority groups.⁷³ Some empirical studies have shown active discrimination based on caste identity, such as violating fair norms by directly excluding SC children from the programs.⁷⁴ Children from upper castes are included in the Supplementary Nutrition Program schemes, but tribal children are denied access to the services which have high demand from upper castes. Also, even if tribal children are included, they are treated unequally, and discriminated against in the AWCs (IIDS–UNICEF 2012).⁷⁵ Tribal identities and cultural make-up are often compromised in the formal education system of the county, with the medium of instruction being the state language rather than tribal languages.⁷⁶ First generation young learners from tribal families often lag behind in terms of performance, due to increasing reliance of schools on parental input. Thus, failure to provide an adequate support system perpetuates into the disadvantage of low levels of skill development. Hence, exclusionary aspects of the educational system restrain opportunities for the vulnerable tribal children to acquire the necessary skills enhancement, which facilitates success. This, in turn, in the long run, restricts alternative occupational choices, forcing them to lead a life at a low-level equilibrium.

2.6.7. Tribal Communities Lack Political Voice

As can be summarized from the discussion above, tribal groups in the country seem to continue to face age-old oppression of their rights on common resources, entitlements, ownership status of assets, and access to basic service provisions, most possibly triggered by their lack of political voice. Since independence, in spite of the country's initial focus on adequate safeguards for minorities, backward and tribal groups, there has been limited achievement. Tribal groups, hence, remained largely obscured and unheard, cut off from the mainstream over the past seven decades of independence.⁷⁷ The lack of voice and control over services is deep rooted in the political fragility

⁷¹ Ministry of Tribal Affairs, Statistics Division, 2010, Statistical Profile of Scheduled Tribes in India 2010, GoI.

⁷² Weber, Max. 1918-91. From Max Weber: Essays in Sociology. Edited and with an introduction by H. H. Gerth and C. Wright Mills. London: Routledge (pp 187).

⁷³ IDFC Foundation. 2013. India Infrastructure report 2012: Private Sector in Education, Routledge, India.

⁷⁴ Mander, H. and M. Kumaran. 2006. 'Social Exclusion in ICDS: A Sociological Whodunit?' Mimeo, New Delhi: Centre for Equity Studies.

⁷⁵ IIDS-UNICEF. 2012. *Social Inclusion in Multiple Spheres (ongoing)*, Indian Institute of Dalit Studies, New Delhi.

⁷⁶ Nambissan, et al. 2002. PROBE Team, 1999.

⁷⁷ Guha, R. 2007. Adivasis, Naxalites and Indian Democracy, Special Article, *Economic and Political Weekly*, August 11, 2007.

of tribal communities in India. Such political neglect and exploitation has further given birth to rebellions and disorders, and also suitable opportunities for LWE operations from tribal lands. Development initiatives, in the process, are seriously impaired. Unless crucial and conscious steps are taken to include tribal rights as the overall political priority, backed by demands generated through community voices, there will be little hope to change.

2.3. Where Might NRLM Intervene?

We have quickly traversed substantial territory in the summary review of immediate, intermediate and basic drivers of tribal malnutrition, but where does it leave us on the question of which domains NRLM might choose to focus on? Clearly, persistent gaps at every juncture of the discussion suggest several possible intervention areas. Presumably any of the following objectives could theoretically make meaningful improvements to nutrition outcomes:

- Increase dietary diversity and overall consumption;
- Reduce seasonal food security shocks, lower susceptibility of disease;
- Improve water, sanitation, health and other essential services and their utilization;
- Optimize maternal and child care practices;
- Foster adoption of hygienic behaviors;
- Reduce barriers to credit and employment;
- Increase connectivity and public infrastructure;
- Preserve access to lands and forest resources; and
- Foster political and civil engagement.

The list presents a wide array of possibilities, but also raises important questions of prioritization.

The Jharkhand 2013 data offer a few hints on the possible attributes while modelling childhood chronic malnutrition.⁷⁸ They suggest that household-level vulnerability factors⁷⁹ are most important, followed by health and sanitation supply-side factors, as well as the mother's cash income status. Being in moderately vulnerable households compared to low vulnerability households increases the odds of being underweight by 44 percent. Utilization of health services, in this case measured by immunization, reduces the odds of being underweight by 30 percent. ICDS clearly has a big impact on reducing the odds of malnutrition by 30 percent compared to those who do not use ICDS. Household health and sanitation behaviors dramatically reduce the odds of being underweight by 23 percent. The mother earning cash reduces the odds of underweight by 20 percent.

The analysis suggests that hygiene behaviors and improved access and utilization to services could serve as priority areas for interventions to which we can add dietary diversity and seasonal food insecurity. NRLM has a core focus on livelihood and income generation, especially for women, which if successful, can be expected to reduce household vulnerabilities and therefore improve nutrition outcomes. The Jharkhand 2013 survey data, though having limitations in terms of food security

⁷⁸ The factors were: age, sex, income, household vulnerability, village vulnerability, hygiene practices, whether the mother earns a cash income, quality of essential services, child health status, and health service utilization.

⁷⁹ The household-level vulnerability index was derived based on a factor analysis of the following variables: income, assets, household environment, housing type, source of drinking water, purity of drinking water, latrine type, education level, livelihood activity, landholding patterns, social capital, and shocks. The index was derived based on a factor analysis of these variables, which was then normalized into a scale of 0-100. Instead of any subjective thresholds to classify households based on this normalized index score values, we designate the lowest third of the distribution (that is, households with a score of 0-33) as of high vulnerability, the middle-third (with a score of 34-66) as of moderate vulnerability and the highest third (with a score of 67-100) as of low vulnerability. This variable was then checked for consistency with other variables and found to be consistent. Details could be found in the background paper based on Jharkhand 2013 study (Annex 5).

variables to suitably model child malnutrition, provided some useful hints on challenges around seasonal gaps in food security and poor dietary diversity, which too deserve our attention. Since NRLM will be operating in the context of existing interventions and policies, we examine these in the next two chapters. The goal will be to understand what sort of interventions are likely to leverage and suit NRLM's implementation modalities and timeframe, towards producing an impact on FNS outcome among the tribal population in India.

Chapter 3: Government Interventions and Policies in Response to FNS

In the last chapter, we considered the areas that NRLM might consider intervening in to improve nutrition outcomes. However, any intervention will necessarily take place in the context of the existing set of government schemes, interventions and policies that are meant to address malnutrition and tribal development. Here we examine those and consider NRLM's possible role in relation to them. The section concludes that the array of programs and policies that cover nutrition related sub-issues that were identified in the previous chapter nearly all suffer from service delivery and utilization challenges, often at the community level that reduce their intended effectiveness. With its grassroots focused, SHG-driven implementation model, NRLM is optimally placed to improve tribal malnutrition by supporting communities to engage with these existing programs and policies for food and nutrition.

Public services can play a huge role in ensuring food security and improved nutritional status.

Existing literature cites numerous barriers in access to services, and typical system shortfalls in providing these services, that act as a detriment in realizing the potential of food-based safety nets and interventions, more so for vulnerable communities such as the tribal households in economically, and agro-climatically backward regions. GoI has been implementing a number of programs that are varied in their scope, funding and effectiveness. Some programs have components that affect FNS directly while others have an indirect bearing on nutrition outcomes. These have either addressed FNS explicitly through food safety nets, or focused on undernutrition by strengthening livelihood options.

Programs that address food security and nutrition directly include the targeted PDS; supplementary feeding programs such as ICDS; Mid-Day Meal Scheme (MDMS) in primary schools (now under extension to secondary schools), and to some extent the recent NFSA. On the other hand, MNREGS and NRLM aim at increasing the purchasing power for food security, particularly for BPL households. Programs such as NRHM and Nirmal Bharat Abhiyan (NBA) have strategies that indirectly affect nutritional status, having an important bearing on household and community environmental hygiene and safety and ensuring good quality health services to those in need. As we shall see, of particular importance are the PDS and ICDS. The Jharkhand 2013 data indicate that households that rely more on PDS supplies, and more frequently access the PDS stores to procure their supply of food grains have been able to significantly reduce risks of food insecurity. Equally evident is the positive influence of ICDS in improving nutritional outcomes among children. Not surprisingly, it is not the presence or absence of an ICDS center in a community that makes the difference, but the quality of services that produces the impact.

The recent Public Evaluation of Entitlement Programmes (PEEP) survey (2013) indicates an overall improvement in the situation of public entitlement schemes in Odisha; however, Jharkhand can do better in many crucial domains. In general, physical insecurities resulting from conflicts and insurgencies lead many service providers to flee from the far-flung remote corners of these laggard states, which affects performance of the schemes to a great extent.

The qualitative discussions undertaken by the Jharkhand 2013 survey also offer insights on the grassroots perceptions of various key programs:

- **PDS is seen as extremely important**, but coverage is thought to be poor and not universally accessible. Further, supply of food material is noted to be insufficient. People also cited measurement discrepancies, poor rice quality, and irregular rations;
- **Health services useful but not for information.** The Auxiliary Nurse Midwife (ANM) is seen as a vital member of the community but mostly imparts services (immunization) or items (iron pills) rather than information or counseling related to optimal behaviors;
- **ICDS seen as a good source of information.** The Anganwadi workers (AWWs) and Sevikas are seen as agents of information (encourage dietary diversity, for example). However, a common complaint was the proximity of the AWC;
- **Schools and mid-day meals are thought to be important, but there were concerns about teacher absenteeism.** Teachers are often not present forcing schools to close and the associated MDMD to become unavailable; and
- **MNREGA is important, and people want more work and faster pay.** People complain of not getting enough days, work unsuitable for women, and low frequency of wages. There are also charges of malpractices through falsified work and payments. Nevertheless, the program does seem to reduce outmigration.

3.1. Food Security

3.1.1. Public Distribution System

The PDS is implemented by the Ministry of Consumer Affairs, Food and Distribution. For the year 2013-14, an estimated INR 90,000 crore (US\$14,490 million) has been allocated by GoI for food subsidy. Targeted PDS was introduced in 1997 when special cards were issued to BPL families. Food grains and other essential commodities are distributed at a lower price for these families through a network of Fair Price Shops (FPS) (Dev and Sharma, 2010). Targeted PDS is subsidized by the central government and, to some extent, by state governments. The total subsidy is distributed as follows: 18 percent for Above the Poverty Line (APL) households, 46 percent for BPL and 36 percent for Antyodaya Anna Yojana (AAY)⁸⁰ households.

Poor Utilization and Coverage of PDS among Scheduled Tribes

Although PDS is universally implemented across the country, availability, accessibility and affordability of PDS among STs remain a key challenge.⁸¹ PDS outlets are often located at a considerable distance from interior tribal hamlets and lack adequate stocks. When stocks are available, tribal households may lack money to purchase grains through PDS (Jena, 2008). Added to this, low quality and infrequent supply of food grains, inefficiency of the Food Corporation of India, political interference, inefficient system of inspection of entitlements, and viability of FPS (low margins and so on) deprive the tribal households of availing the services of PDS. Poor supply-chain management, and failure to maintain the required logistics support to ensure smooth, regular flow of food grains to stores in far-flung areas, deprive tribal households in these areas of this much-needed support; other pervasive forms of structural shortcomings such as errors of targeting leads to gross under-coverage and much lower access levels among the core target groups.⁸² In a study⁸³ examining reports of starvation-related deaths among primitive *Birhor* tribals in Jharkhand, other factors such as a weak administrative apparatus and bureaucratic inertia, due to possible threats of

⁸⁰AAY was launched in 2000 to cater to the poorest of poor households. AAY households are so poor that they are not able to purchase food grains at BPL rates.

⁸¹ See For Tribals Public Distribution System Remains Out of Reach. Accessed at: http://articles.timesofindia.indiatimes.com/2013-07-24/visakhapatnam/40771148_1_pds-dealers-pds-shops-public-distribution-system

⁸²On targeting errors, see, for example, Khera, R. 2008. Access to the Targeted Public Distribution System: A Case Study in Rajasthan, *Economic and Political Weekly*, November 1, 2008; pp: 51-56.

⁸³Khera, R. 2008. Starvation Deaths and 'Primitive Tribal Groups', *Economic and Political Weekly*, December 27, 2008; pp: 11-14.

LWE, have been put forward as barriers in expanding scope, coverage and smooth functioning of the targeted PDS (Khera, 2008).

As observed in the PEEP survey conducted by Dreze and Khera (May-June 2013),⁸⁴ across 10 surveyed states, the situation has changed to a large extent. About 97 percent of the BPL and AYY households surveyed in Odisha and 78 percent in Jharkhand were found to access PDS rations; this confirms improvement over the earlier observations made in 2011. However, the states need to plug leakages that occur in the PDS system, even though there have been large-scale changes brought into the operations, with transfer of management from private dealers to Gram Panchayats (GPs), cooperatives and women's SHGs.

PDS in Jharkhand appears to be meeting a critical need, though there is much room for improvement. As compared to other states in India, PDS reforms have been slow in Jharkhand. A study conducted by IHD in 2012 across 24 tribal dominated villages from four districts in Jharkhand revealed that PDS outlets were conveniently located within 10 minutes of walking distance, on an average, and reliance on subsidized food grains through PDS was high in the study area. In the study sample, 32 percent of beneficiary households had not faced any problems or difficulty regarding purchase of food grains under PDS. About 42 percent reported irregular supply or availability in time as the major problems, while 12 percent complained about poor quality of the supplies received.⁸⁵ Unethical transactions, unavailability of funds to purchase PDS good, and unavailability of PDS goods at the shops restrict tribal households from availing PDS goods in the state (Centre for Environment and Food Security, 2005).

PDS in Odisha has seen substantial improvements. PDS outlets are operated by the GPs, private dealers and SHGs. Recent studies show that there is a trend towards improvement in PDS even in the Koraput-Bolangir-Kalahandi (KBK) region (Jena, 2008; Khera 2008; Aggarwal 2011). These studies have revealed that, over the last five years, there has been an improvement in terms of proximity of PDS outlets, and regular supply and increased quantity of food grains. However, despite these changes, BPL identification still remains a challenge in Odisha as with other states suggesting that PDS is functioning in the state although not perfectly. The PEEP survey noted that the PDS system in the KBK region of Odisha, traditionally known for starvation deaths, was functioning at a considerable level, where households had near universal access to PDS. However, across the states, respondents from BPL households resented the idea of transfer of cash in place of food grains from PDS, which was often perceived as creating misuse of cash, hassles at the bank, unreliability in the local market and hikes in food prices.

3.1.2. Mid-Day Meal Scheme

Presently, India's MDMS is the world's largest school lunch program, reaching about 113 million children in over 1.26 million schools across the country, with a budget allocation of INR 13,215 crore (US\$2,099 million) for the financial year (FY) 2013-14 (Budget Speech 2013-2014, Minister of Finance, P. Chidambaram, February 28, 2013). The program is implemented by the Department of School Education and Literacy under the Ministry of Human Resource Development. Gol initiated the national scheme of Nutritional Support to Primary Education or MDMS on August 15, 1995. The objectives are to boost universalization of primary education by mitigating classroom hunger and improving the nutritional status of primary school children. The program is also intended to reduce social inequality based on caste and religion. Initially, the scheme was implemented in 2,408 blocks of the country to provide food to students in Classes I-V of government, government-aided and local body run schools. By 1997-98, the scheme was universalized across all blocks of the country. Under this program, a cooked mid-day meal with 400 calories and 12 g of proteins is provided to all

⁸⁴J. Dreze and R. Khera. 2014. Water for the Leeward India, Cover Story, *Outlook*, March 24, 2014.

⁸⁵IHD. 2013. Determinants of Food Security and Nutrition in Tribal and Backward Areas. A report submitted to the World Bank (unpublished).

children enrolled in Classes I to V. In 2007, the scheme included students in upper primary classes of VI to VIII in 3,479 educationally backward blocks (Garg and Mandal, 2013).

Overall, MDMS has improved school enrolment since its inception in 1995; however, in terms of the intended effect of reducing social inequalities, the impact has been mixed. There is substantial evidence that the MDMS has led to a marked increase in the enrollment of children in primary schools. In fact, several micro studies point to major increases in enrollment immediately after the introduction of mid-day meals. For instance, following the introduction of mid-day meals in Rajasthan in July 2002, a small study of 63 schools in the remote district of Barmer, Rajasthan, suggested a 23 percent increase in the enrollment of children (Khera, 2006). Similarly, there is a greater impact on the enrollment of children from disadvantaged families: dalits, STs, and the poor (ibid.). With regard to social impact, some studies reported the prevalence of caste discrimination in MDMS (Macwan 2010; Menon 2003; Nambissan 2009; Thorat and Lee 2005). Students from SC and ST groups were made to sit away from the upper castes; in some cases, they were not given food or they were served leftover food. Other examples depict discrimination against SC and ST cooks and throwing away of food when cooked by women of these groups. However, a study conducted in Rajasthan in 2013, found that MDMS has had a positive impact, particularly for ST children, and, in fact, the study did not find any discriminatory practices in the delivery of MDMS services (Khera, 2013).

More fundamental inequities in schooling are likely to be affecting MDMS as well. Overall school enrollment in rural areas continues to be low; poor households from tribal communities are more likely to have a higher proportion of children out-of-school or be premature drop-outs. Available evidence through the Annual Status of Education Report surveys suggests that, owing to recent supply-side initiatives through programs such as Sarva Shiksha Abhiyan, physical infrastructure and facilities such as MDMS have received a boost. Recent evidence, however, suggests otherwise; a survey conducted by Joint Review Mission team in 2012 revealed that more than 50 to 60 percent students in Jharkhand were deprived of MDMS benefits. In 11 districts of the state, almost all with high tribal concentrations, utilization levels were around 40-50 percent on an average.⁸⁶ However, as per the observation made by the PEEP survey in 2013, price hikes in food led many teachers to beg for credit from local shopkeepers or even meet ends with personal funds. This clearly emphasizes the need for immediate revision of budgets over the currently provided rate of INR 2.5/child, to retain the nutrition and other benefits achieved under the scheme so far.

MDMS in Jharkhand

MDMS commenced in August 1995 as a National Program of Nutritional Support to Primary schools. At that time, Jharkhand was still a part of Bihar. Provision of cooked mid-day meals began in Jharkhand in 2003 on a pilot basis in 3,140 government primary schools in 19 districts and 0.33 million children availed the facility. In a phased manner, it has now been extended to all government primary schools, Education Guarantee Scheme (EGS) centers and government-aided schools, including minority schools and Alternate Innovative Education centers. In FY 2007-08, the scheme has been extended up to the upper primary level. The norm was fixed for the provision of 700 calories and 20 g proteins in the MDMS for upper primary schools.

However, fiscal mismanagement is a major challenge in the implementation of the scheme in the state as is the lack of basic infrastructure and skills. A recent study⁸⁷ conducted around 50 randomly chosen primary schools across 24 districts of the state highlights that fiscal mismanagement in

⁸⁶ Report available online at

http://mdm.nic.in/Files/Review/Reports/2012/Jharkhand_Review_Mission_Report_Feb_2012.pdf

⁸⁷ See Children go hungry as funds reach government schools, anganwadi centers inordinately late. Available at: http://www.telegraphindia.com/1130725/jsp/frontpage/story_17154117.jsp#.UnvJrvlgdfA

distributing funds to schools Anganwadis leads to delays, ultimately affecting the smooth implementation of MDMS. The annual budget for mid-day meals and supplementary nutrition in Jharkhand is INR 5 billion and INR 3 billion, respectively. In the survey, it was found that many Anganwadis purchased rice and pulses on credit, running the backlog of bills into thousands. The situation was worse in hinterland districts such as Jamtara, Pakur, Deoghar and Godda. Many AWCs also lacked basic infrastructure and skills. Not surprisingly, attendance in AWCs was found to be poor. Cooking was done mostly in the open or in dark and dingy rooms. Unhygienic kitchens or makeshift cooking zones led to the risk of food getting contaminated during storage or cooking. In case of emergency, none of the schools or centers had any signboard to highlight redress mechanisms or helpline numbers.

The Jharkhand 2013 data shows us and the PEEP survey confirms that there is, nevertheless, substantial coverage of MDMS in the state, and that even if the service is of average quality, the program serves as an important source of food for some. Sixty-three percent of school children get mid-day meals consisting of a rice and lentil mixture (*kichudi*) with some vegetables on the side (*tarkari*). Twenty-five percent of those surveyed reported that the quality was good, and 70 percent said it was average. Lastly, for most (60 percent), the meal is considered a snack but for 20 percent it comprised half of the daily intake. The PEEP survey also confirms this view. Even in remote tribal villages, parents confirmed that their wards get a cooked meal in the local school. Parents were found mostly satisfied with the quality of food served and showed a preference for the program to continue. Many states, including Jharkhand and Odisha, have introduced eggs at least once a week in the mid-day meal.

MDMS in Odisha

Compared to Jharkhand, MDMS in Odisha showed greater impact. In Odisha, the MDMS is being implemented since 1995 in all government schools, government-funded primary schools and schools coming under EGS. By 2003-04, MDMS was also completely implemented as a cooked meal scheme in all the tribal districts and underdeveloped areas such as the KBK blocks which comprise Koraput, Bolangir, Nawarangpur, Sonapur, Malkangiri, Nuapada, Rayagada, and Kalahandi (Rani Si and Sharma 2008). Other districts covered by the scheme are Mayurbhanj, Sundergarh and Keonjhar. Compared to Jharkhand, Odisha has been relatively successful in implementing the program. A field survey in Khurda district of Odisha noted that, while the nutritional impact of MDMS was difficult to measure, there was a 3 percent annual increase in attendance rates between 1995-96 and 2003-04 (Rani Si and Sharma, 2008). The survey also found that MDMS generated employment opportunities, particularly for women from marginalized sections (Ibid.).

3.2. Nutrition and Care Practices

3.2.1. Integrated Child Development Scheme

ICDS is a flagship program of GoI, implemented by the Ministry of Women and Child Development with a current allocation of INR 16,058 crores (US\$2.6 billion) which forms about 80 percent of the funds allocated to the Ministry by GoI. Launched in 1975, ICDS provides a package of services comprising supplementary nutrition, immunization, health check-ups, referral services, preschool education, and nutrition and health education. The ICDS is aimed particularly at the most vulnerable sections of the population and at disadvantaged areas such as backward rural areas, tribal tracts and urban slums (Nayak and Saxena, 2006). The program is implemented through a network of community-level AWCs. ICDS helps food insecure households meet both temporary and chronic forms of FNS risks if such disadvantaged households have easy access to these programs; and since this program is free, unlike the targeted PDS, financial costs should not be a detriment in access and utilization of the services offered. However, in reality, as widely reported in the literature, there is much divergence from the intended impacts. The program, being facility-centric, with services offered from designated ICDS (or Anganwadi) centers and primary schools, suffers from barriers in

the form of unsuitable physical infrastructure (including connectivity problems such as roads), required manpower, and supply of food supplements or required ingredients. A number of micro studies have reported that, in backward regions, often with higher concentrations of tribal and other vulnerable populations, ICDS services are grossly inadequate, and more likely to exclude households and children at the greatest risk of undernutrition.

A performance audit of ICDS by the Comptroller and Auditor General for the years 2006-07 and 2010-2011 highlights some serious gaps in the performance of ICDS. This was particularly in terms of quality of services, diversion of funds, shortage of staff, poor infrastructure and inadequate drinking water and sanitation facilities in AWCs (CAG report, 2012). Despite several shortcomings of ICDS services, utilization is relatively better among STs as compared to any other group as per the NFHS-3 survey which perhaps suggests that once covered by AWCs, utilization is high (Table 3.1).

Table 3.1: Indicators of utilization of ICDS services by social groups in areas covered by an AWC

Social Group	Children who received supplementary food daily	Children age 0-71 months who received any immunization	Children who received a health check-up at least once a month	Children aged 36-31 months who went regularly for preschool education	Children 0-59 months who were weighed at least once a month	Mothers who received counselling after child was weighed
SC	14.4	21.4	13.3	15.8	12.8	49
ST	15.6	33.1	21.4	16	21.4	48
OBC	9.9	20.5	9.4	12.9	9.1	52.8
Other	11.5	13.3	9.6	13.4	9.4	44
Don't Know	22.3	19.1	23.3	28.4	16.9	55.7

Source: NFHS-3, 2005-6.

ICDS in Odisha and Jharkhand

A comprehensive study on ICDS by the Planning Commission found significant gaps in service delivery and utilization in Odisha and Jharkhand. The study estimated that effective coverage in the supplementary nutrition program (Table 3.2), though, was unable to estimate registration gap under ICDS due to data unavailability (Planning Commission, 2011). According to the Planning Commission's report, children received food from Anganwadis for an average of 18 days a month in Jharkhand, and in Odisha for 21 days a month. A little over half of the children were reported to have full immunization, 51 percent in Jharkhand and 59 percent in Odisha. Regular weighing (once a month) is reported high in Odisha (94 percent) as against Jharkhand with 50.4 percent.

The recent PEEP survey in Odisha (2013) found clear signs of real efforts to provide a better environment at the AWCs both for children and AWWs. Basic infrastructure, that is, toilets for AWWs, as well as mini-toilets for children attending AWCs could be found. Many AWWs were well-trained and active in terms of home visits too. It was encouraging to note that children had uniforms and opportunities to pursue interesting preschool activities, such as games, songs and counting.

Table 3.2: Poor coverage of ICDS in Jharkhand and Odisha

State	Survey gap: Proportion of children not registered as % to total eligible children as per census	Service gap: Proportion of children not in the delivery registered as % to total number in survey register	Delivery gap: Proportion of children not receiving supplementary nutrition as % to total number in delivery register	Actual coverage (proportion of children receiving food from AWC)					
				As % of children in survey register	% in	As % of children in delivery register	% in	As % of eligible children estimated (Census)	% of
Jharkhand	14.9	48.8	11.7	45.2		88.3		38.5	
Odisha	26.3	1.4	30.1	69.0		69.9		50.9	

Source: Planning Commission, 2011.

The Jharkhand 2013 data allow us additional insights on ICDS: it is important and could be better. Supplementary food for children can be really important; for a third of the high to moderately vulnerable households we see that the food accounts for more than 50 percent of the child's intake. The majority, 65 percent, think of the food as a snack. The weighing of children was very irregular and only 38 percent of mothers or care-givers were actually explained the utility of growth charts.⁸⁸ Less than half the children above 12 months had received service against deworming, in both the states. The above data reflect that there are definite areas for strengthening delivery and utilization of services. In Jharkhand, utilization also seems to be regressively skewed towards those with more income. Amongst low vulnerability households, usage is 66 percent while in high vulnerability households, it is 45 percent.

Rajiv Gandhi Scheme for Empowerment of Adolescent Girls

Another scheme relevant for nutrition, SABLA, is being implemented in 200 districts across the country on a pilot basis, using the common platform of ICDS. SABLA is a centrally-sponsored scheme, launched in 2010 and implemented by the Ministry of Women and Child Development. SABLA completely replaces the Nutrition Programme for Adolescent Girls. Under this scheme, GoI and states share 50:50 cost of nutrition provision (600 calories and 18 to 29 g of protein) at the rate of INR 5 per beneficiary per day for 300 days a year for 11 to 14 year-old out-of-school girls and all girls in the age of 15 to 18 years. A provision of INR 0.38 million per ICDS project per annum has been made for various components of the scheme such as a training kit at each AWC, national health education, life skill education, purchase of IFA tablets for mothers. The scheme also aims at vocational training for girls above 16 years of age boost their economic empowerment. The focus is on out-of-school adolescent girls (11-18 years) and aims at empowering them by improving their nutritional and health status and upgrading various skills such as home skills, life skills and vocational skills. In Jharkhand, the scheme is being implemented in seven districts and, in Odisha, it is being implemented in nine districts though it is, as yet, unclear what the impact of the intervention has been.

3.3. Health, Water and Sanitation

3.3.1. National Rural Health Mission

NRHM began in 2005 and is implemented by MoHFW. It aims to provide accessible, affordable and quality health services in rural areas. For FY 2013-14, GoI allocated about INR 37,330 crore

⁸⁸IHD. 2013. Determinants of Food Security and Nutrition in Tribal and Backward Areas. A report submitted to the World Bank (unpublished).

(US\$6,010 million) to MoHFW and, of this, about INR 19,120 crore (US\$3,078 million) is allocated to NRHM.

Accredited Social Health Activist (ASHA) health workers constitute a critical link between the health system and the community. Under NRHM, a female health worker or ASHA is chosen by and accountable to the Panchayat in every village, and “act(s) as the interface between the community and the public health system” (GoI, 2005). ASHAs are given induction training and provided with a drug kit containing generic AYUSH (Ayurvedic, Yogic, Unani, Siddhi and Homeopathic) and allopathic formulations for common ailments. While ASHAs are volunteers, they are given a performance-based incentive for promoting immunization, referral and escort services for reproductive child health and other health delivery programs. In addition, they are also involved in the preparation of village health plans.

NRHM has several strategies that are highly focused on nutrition, most through the Reproductive, Maternal, Child and Adolescent Health (RMNCH+A) strategy. The strategy is central to NRHM and various components of RMNCH+A address undernutrition. The RMNCH+A approach also reiterates the need to focus on the most vulnerable and underserved sections of the population, particularly those living in hilly and tribal areas (MoHFW, 2013). Some of the relevant strategies under RMNCH+A include:

- **National Iron+Initiative:** This initiative brings together existing programs for IFA supplementation among pregnant and lactating women and children in the age group of 6–60 months, and proposes to include adolescents and women in reproductive age group;
- **Weekly IFA supplementation scheme:** It aims to cover adolescents enrolled in Classes VI–XII of government, government-aided and municipal schools as well as out-of-school girls. The key features of the scheme are: (i) supervised administration of weekly IFA supplements; (ii) screening of target groups for moderate and severe anemia and referral to an appropriate health facility; (iii) biannual de-worming; and (iv) information and counselling for improving dietary intake and preventive actions for intestinal worm infestation;
- **School Health Program:** The components of this program include screening of school-going children and adolescents (6-18 years) in government-aided schools for diseases, disability and deficiency; basic health services and referral; immunization; micronutrient supplementation (IFA, vitamin A) and de-worming;
- **Universal vitamin A administration:** As part of GoI’s policy on vitamin A supplementation, children between nine months to five years are given six monthly doses of vitamin A. A child must receive nine doses of vitamin A by the fifth birthday. A biannual approach is being used in many states where two specific months in a year are designated for carrying out the supplementation, sometimes offering other child health services (such as screening for undernutrition, deworming, and so on) as a package;
- **Immunization:** The Universal Immunization Program includes vaccines to prevent seven vaccine preventable diseases (tuberculosis, polio, diphtheria, pertussis, tetanus, measles, hepatitis B);
- **Nutrition Rehabilitation Centers:** These have been established for providing medical and nutritional care. Priority is to be given for setting them up in tribal areas under the RMNCH+A approach;
- **Universal iodization of salt program and national goiter control program:** In 1983-84, GoI adopted a policy of universal iodization of edible salt by 1992 to prevent iodine deficiency and goiter. The ban on sale of non-iodized salt was lifted in 2000 but reimposed in 2005 by GoI;

- **Janani Suraksha Yojana (JSY):** This is a conditional cash transfer scheme under NRHM which provides a cash incentive to women for delivering in a medical facility. Incentives are also given to BPL women, over the age of 19 if they deliver at home with the help of a Skilled Birth Attendant. In rural areas of low performing states,⁸⁹ mothers receive up to INR 1,400 and ASHA worker up to INR 600 as cash incentive;⁹⁰ and
- **Village Health Nutrition Day:** Village Health and Nutrition Days (VHNDs) are a major initiative under NRHM to improve access to maternal, new-born, child health and nutrition services at the village level. Across the country, VHNDs are intended to take place in every village once a month usually at the AWC or other suitable locations. VHNDs provide a basket of health and nutrition services and counselling to the community on a pre-designated day, time and place. VHNDs require convergent actions from the Departments of Health and Family Welfare and Women and Child Development at state, district and block levels to plan, implement and monitor the program.

Despite the existence of multiple health services provided through different programs, evaluation studies undertaken by the Planning Commission, MoHFW and independent authorities indicate that the quality of services is poor in most states.⁹¹ Lack of health infrastructure, medical equipment and manpower are some of the reasons for poor performance of the programs. Overall, in India, as of March 2012, there is a shortfall of 18 percent of PHCs. A shortfall of PHCs during the same period was the highest in Jharkhand (66 percent) putting a high burden on the existing PHCs to deliver health services to a large rural population in the state.

NRHM in Jharkhand and Odisha

There is a shortage of health care personnel and physical infrastructure in Jharkhand and Odisha. A PHC in Jharkhand covers 75,870 people which is way above the norms⁹² set by GoI. In Odisha, although there is a shortfall of PHCs, it is relatively low (6 percent) and, on an average, a PHC covers 28,508 people in the state (Rural Health Statistics, 2012). In tribal areas, while there is no shortfall in the availability of ANMs at the sub-centers in both Jharkhand and Odisha, there is severe shortage of availability of health care providers at the CHCs, particularly obstetricians and gynecologists as well as pediatricians (Table 3.3)

	Jharkhand			Odisha		
	Required in number*	In position or existing	Shortfall	Required	In position or existing	Shortfall
Health Infrastructure and Personnel						
Sub-center's	2,589	2,053	536	2,866	2,689	177
PHCs	388	123	265	429	403	26
CHCs	97	90	7	107	135	NA
Allopathic doctors at PHCs	123	185	NA	403	416	87
Pediatricians at CHCs	90	5	85	135	39	96
Surgeon at CHCs	90	3	87	135	22	113

⁸⁹Uttar Pradesh, Uttarakhand, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Rajasthan, Odisha, Assam and Jammu and Kashmir.

⁹⁰See JSY. Available at: <http://jknrm.com/PDF/JSR.pdf>

⁹¹Zakir Hussain. 2011. Health of National Rural Health Mission. *Economic and Political Weekly*, vol xlv no 4, pp 53-60.

⁹² According to GoI norms, there should be one PHC for 30,000 people in the plain areas and one for 20,000 people in hilly, tribal or difficult areas.

Obstetrician/Gynecologist at CHCs	90	10	80	135	84	51
*As per Gol norms Source: Rural Health Statistics, 2012, MoHFW.						

3.3.2. Nirmal Bharat Abhiyan

NBA, implemented by the Ministry of Drinking Water and Sanitation, formerly known as TSC, took effect in 1999. It is designed as a demand-driven approach to increase demand for sanitary facilities in rural areas. In 2000, to give a boost to TSC, the Nirmal Gram Puraskar (NGP) was launched to recognize efforts in achieving complete sanitation status in rural areas. TSC was renamed NBA in 2012 with a shift from the TSC approach of motivating individual household toilet construction to “covering the entire community,” with an increased focus on outcomes at the GP level. Allocations for rural sanitation were INR 34,377 crores (US\$5,534 million) in the 12th Five Year Plan, marking a 42.5 percent increase in the allocation from the 11th Five Year Plan.

Under NBA, special financial incentives for constructing individual household toilets are given to all BPL households, APL households, restricted small and marginal farmers, the physically handicapped and women-headed households, landless laborers, and SCs/STs.⁹³ Priority is also given to provision of sanitation facilities and solid and liquid waste management in each GP. Despite these efforts, open defecation is rampant in the country.

Despite over 10 years of NBA, open defecation remains entrenched. According to Census 2011, 53.1 percent of the households in India do not have a toilet with a higher percentage of rural households resorting to open defecation (69 percent) (Census, 2011). The Indian sanitation scenario faces two major challenges: inter-state disparities in toilet coverage and the gap between coverage and usage. India has been constructing 1.5 million toilets a year under TSC; however, nearly half of them remain unused.⁹⁴

Toilet construction has been hindered by operational issues as well as mismanagement of funds. Operational aspects such as well-defined institutional roles and mechanisms, appropriate plans for management of funds, coordination between the departments to deal with all aspects of sanitation, empowerment and capacity building of people within these institutions, and use of improved and appropriate technologies have been found to be important determinants for improving sanitation outcomes. Current evidence indicates that there is a gap between the number of toilets provided by the TSC and the actual existing toilets, according to Census figures, which suggests a gross mismanagement of funds, which in turn has significantly hindered progress in sanitation. For instance, while Census 2011 reported only 32 percent of rural households as having access to toilets, NBA reports about 74 percent of rural households as having toilets.⁹⁵

Toilet use is limited by the low impact of Information, Education and Communication (IEC) activities for behavior change. Many states have invested more in hardware (toilet construction) rather than in software activities (demand generation for toilet use) with the result construction has not led to concomitant usage. For instance, in Jharkhand, of a proposed 151,716 IEC activities across the state, only 14,490 have been conducted in the current year. In Odisha, of a target of 995,650 IEC activities, only 18,588 have been conducted so far.⁹⁶

⁹³See Ministry of Drinking Water and Sanitation. Guidelines, NBA. Available at: [http://www.mdws.gov.in/sites/upload_files/ddws/files/pdfs/Final%20Guidelines%20\(English\).pdf](http://www.mdws.gov.in/sites/upload_files/ddws/files/pdfs/Final%20Guidelines%20(English).pdf)

⁹⁴See Richard Mahapatra. 2011. A toilet per second. Available at: <http://www.downtoearth.org.in/content/toilet-second>

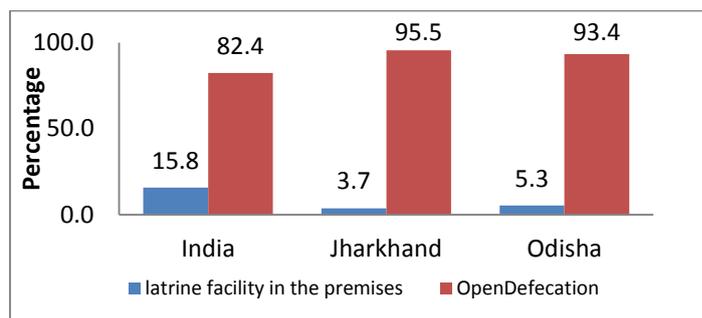
⁹⁵See Percentage physical progress report. Available at: http://tsc.gov.in/tsc/Report/Physical/RptStateWisePerAch_OnlyTSC_net.aspx?id=Home

⁹⁶See http://tsc.gov.in/tsc/Report/MonitoringStatusReport/RptAchofIEC_HRDStatewiseDistrictwiseDetails.aspx?fin=2013-2014&id=AIP

NBA in Jharkhand and Odisha

In Jharkhand, 77 percent of homes have no toilet facilities, while the figure is 76.6 percent for Odisha. In both Jharkhand and Odisha, open defecation is rampant with 92 percent of rural households in Jharkhand and 85 percent of rural households in Odisha not having any toilet facility as of 2011 (Census 2011). The number of GPs that won an NGP is low in both states as compared to other states in India. In fact, Jharkhand did not receive an NGP in 2009 and 2010 and only two GPs won the NGP in 2011. Toilet coverage among ST households is extremely low despite over 10 years of implementation of TSC (Figure 3.1).

Figure 3.1: Toilet coverage among ST households in Rural Areas in Jharkhand and Odisha, 2011



Source: Registrar General of India, Census 2011.

3.4. Income Generation

3.4.1. Mahatma Gandhi National Employment Guarantee Scheme

The MGNREGA Bill was passed by the Parliament in August 2005 and became the National Rural Employment Guarantee Act, 2005 (NREGA). MGNREGA was notified in September, 2005 with the aim to enhance livelihood security in rural areas by providing at least 100 days of guaranteed wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work. The program is implemented by the Ministry of Rural Development and, for FY 2012-13, the budget allocated for the program is INR 33,000 crore (US\$5,226 million). **A few recent studies have brought to the fore how workfare programs such as MGNREGS (or more often referred as its predecessor, NREGS, or 100-days work program), can be instrumental in providing much-needed cash income to poor households.** These households are otherwise left to manage with uncertain livelihoods such as collecting and foraging for minor forest products, or requiring seasonal outmigration. In particular, studies have highlighted the significant role of gender in this regard; evidence indicate that, in largely poor TABAs such as Jharkhand, NREGS has helped in significantly increasing women's access to paid work. The positive channels of influence of women's paid work and household FNS outcomes, whereby the additional incomes due to the wages received have been found to help in avoiding episodes of hunger and unequal intra-household distribution of food, and allowing more reliable food-stock reserves,⁹⁷ suggests a more focused approach to maximize higher return to FNS outcomes through the gender-employment pathways.

Overall, the performance of MGNREGS as observed by the PEEP survey (2013) has not been encouraging, with wage rates frozen in real terms and delinked from minimum wages. Delays in

⁹⁷See, for example, Pankaj, A. and R. Tankha. 2010. Empowerment Effects of the NREGS on Women Workers: A Study in Four States, *Economic and Political Weekly*, Vol. XLV, No. 30, pp. 45-55; Pankaj, A. 2008. "Processes, Institutions and Mechanisms of Implementation of NREGA: Impact Assessment of Bihar and Jharkhand", IHD, Delhi; Khera, Reetika and Nandini Nayak. 2009. "Women Workers and Perceptions of the National Rural Employment Guarantee Act", *Economic and Political Weekly*, 44(43): 49-57.

wage payments further reduced the value of MGNREGA, coupled with denial of other entitlements of MGNREGA workers at the worksites. Comparing the observations made on people’s expectations of MGNREGA and awareness of entitlements five years ago by the team, no further improvement was observed in the recent PEEP survey. Lack of job opportunities was commonly observed, with only 8 percent of the respondents surveyed receiving 100 days of work under the scheme, pooled for all 10 study states.

MGNREGA in Jharkhand and Odisha

The implementation status of MGNREGS in Jharkhand and Odisha suggests that a considerable number and proportion of the ST population has benefited from the program (Table 3.4). The Jharkhand 2013 data find that, in the ethnic composition with a majority of Santhals (53 percent), followed by Oraons (20 percent), Kharwars (10 percent), Chero (6 percent) and other smaller tribes, a larger proportion of households possessed either a BPL (44 percent) or AAY (11 percent) card – denoting ‘officially poor’ status. Around 9 percent did not have any cards, and 37 percent held APL cards. However, the phenomenon might be attributed to the sampling stratification that was followed. The later phase of the present study, in the intervention villages of Odisha that had a large proportion of tribal inhabitancy, showed many households did not have ration cards which entitle them to access PDS benefits. The tribal households often faced difficulties in applying for such card, due to the number of formalities and requirement of numerous documents.

MGNREGS Status	India	Jharkhand	Odisha
Employment provided to households	3.67 crore	9.64 lakh	12.38 lakh
Person Days			
Total	113.45 crore	283.51 lakh	275.21 lakh
SCs	25.87 [22.8%]	34.85 [12.29%]	51.32 [18.65%]
STs	17.36 [15.3%]	114.75 [40.48%]	87.3 [31.72%]
Women	61.13 [53.88%]	91.59 [32.31%]	105.63 [38.38%]
Others	70.23 [61.9%]	133.91 [47.23%]	136.59 [49.63%]
Source: www.nrega.nic.in			

Low disbursement, utilization and slow payment. Odisha was able to spend only INR 1,000 crore in 2012-13, under the Act even though it had a potential to utilize INR 3,500-4000 crore per year as allocated by Gol. In 2007-08, Odisha recorded only 21 days of employment per household, according to the Central Employment Guarantee Council. In 2009-10, only 1,902 households had completed 100 days in Balangir district out of 2,35,897 job cardholders. In Kalahandi district, only 180 households completed 100 days of work out of 2,69,834 job card holders. In all these districts, the unemployment allowance is still pending for a large number of people, which is in breach of Section 7 of the Act, and there has been a decline in the average number of employment days provided per household.

Low participation rates in tribal dominated areas in Jharkhand: The Jharkhand 2013 data also find that the participation rates among ST households was low (30 percent). Unavailability of work under the program remains the major reason for households not participating under MGNREGS (48 percent). Other reasons include not possessing the job card (31 percent); unawareness of such programs (11 percent); uncertainty of wage payments (7 percent); and higher market wages (3 percent) which are less common reasons preventing participation in program, even when awareness or required eligibility documents exist.

3.5. What are the Implications of These Policies and Programs for NRLM?

First, we note that an array of programs and policies cover the range of nutrition-related sub-issues that was identified in the previous chapter. Indeed, we discussed some of the most relevant; there are others that were not included such as the Prime Minister’s Rural Roads Program (Table 3.5).

Table 3.5: Programs and policies that impact FNS outcomes	
Broad Objectives to Improve FNS Outcomes in Tribal Areas	Existing Programs and Policies
Increase dietary diversity and overall consumption	PDS, ICDS, MDMS, NFSA
Reduce seasonal food security shocks; lower susceptibility of disease	PDS, NRHM
Improve water, sanitation, health and other essential services and their utilization	NBA, TSP, NRHM
Optimize maternal and child care practices	ICDS, NRHM
Foster adoption of hygienic behaviors	ICDS, NRHM, NBA
Reduce barriers to credit and employment	NRLM, MGNREGA
Increase connectivity and public infrastructure	TSP, MGNREGA
Preserve access to lands and forest resources	FRA, LAA
Foster political and civil engagement	PESA

Source: Based on authors’ review of existing programs and policies related to FNS.

Yet, as we discussed above, nearly all these major programs suffer from service delivery and utilization challenges, often at the community level, that reduce their intended effectiveness. PDS struggles to maintain sufficient supplies, has low quality goods, people who need BPL cards do not have them or, even if they do, face discrimination in trying to get their rations. ICDS faces similar challenges in providing wide coverage, maintaining adequately trained personnel or ensuring high levels of utilization. MGNREGS is plagued by insufficient work, slow or late pay, missing job cards and low participation. NRHM or MDMS, similarly, faces infrastructure gaps and insufficient teachers or health professionals. Both the ICDS and NBA have been less than successful in their IEC activities, whether to encourage breastfeeding or toilet use. There are charges of financial mismanagement or leaked resources around each of these programs. Indeed, many people simply seem unaware of these entitlements or, especially in the case of STs, face discrimination in trying to access them. The policies too face similar implementation challenges as in the case of PESA or TSP. Others seem flawed in their very design such as the LAA.

With its grassroots focused, SHG-driven implementation model, NRLM might optimally be placed to improve tribal malnutrition by supporting communities to engage with existing programs and policies for food and nutrition. Empowered SHGs could bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality. Indeed, there are already a number of instances of community-managed food and nutrition activities of this kind. For instance, in some villages of Rayagada district in Odisha, considered one of the worst food insecure region, SHGs have had dramatic impacts on reducing chronic food insecurity risks. We will explore such community-managed food and nutrition interventions in the next chapter.

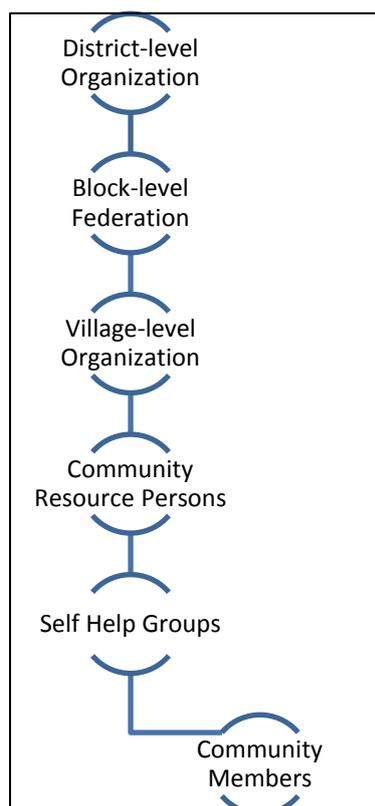
Chapter 4: Community-focused Food and Nutrition Interventions

In the first chapter, we noted the critical state of tribal malnutrition and the need for intervention. The two chapters that followed discussed what could be done and what GoI was already doing vis-à-vis malnutrition and key constraints to some of those efforts. We concluded that NRLM was ideally situated to support communities to engage with the existing programs and policies to improve food and nutrition outcomes. In this chapter, we first explore the attributes that community-managed interventions should have to be compatible with NRLM. Then, we scan the Indian landscape to identify compatible interventions that are being or have been tried. We conclude that there are numerous FNS interventions that SHGs under the NRLM structure could successfully undertake, but a thin evidence base for most suggests a more cautious path forward, focused on experimentation to understand what might work in the tribal context.

4.1. Mapping of Community-managed FNS Interventions

The discussions in the preceding chapters suggest several attributes that an intervention which is NRLM compatible should have. First, the intervention must be founded on a theory of change that logically connects the outputs of the intervention to meaningful impact on nutrition outcomes in

Figure 4.1. NRLM Institutional Model



tribal areas. Second, it could leverage or supplement other existing programs and policies. Third, it should be community-owned and -managed to address the service delivery and utilization challenges that the existing programs face. Fourth, it should align with the NRLM implementation model. That is to say, in short, that the intervention should be implementable by a SHG. Indeed, it should strengthen SHGs. Finally, and this is related the previous point, it should be light in terms of inputs: time required, effort and funds – all of which are scarce in rural tribal areas.

A natural place to form an understanding of the sort of interventions that might be compatible with the NRLM framework would be to look at the food and nutrition related interventions that have already been tried by livelihoods programs in India.

We draw on a mapping of approximately 30 community-managed FNS interventions from across India in addition to those discussed already.⁹⁸ By design, they have a similar implementation structure to that of NRLM. A government organization or NGO provides technical and financial inputs to the mobile Community Resource Persons (CRPs) who then mobilizes a group within the community to carry out a set of activities. In a number of instances, the organization might directly mobilize the group. There can also be varying levels of autonomy in allowing the mobilized groups to choose the issues to engage with in their community. The groups are of various types: SHG, Village Health

and Sanitation Committees (VHSCs), or elements of the local governance (Panchayat) structure.

⁹⁸"Typology of Community Managed Health and Nutrition Initiatives in India": Anindita Adhikari, Sitaramachandra Machiraju and Parmesh Shah. 2013. Funded under the SAFANSI Trust Fund for Strengthening Community Managed Food and Nutrition Security Initiatives in High Poverty States in India.

Figure 4.1. Stylized Implementation Model of Interventions



Source: Based on authors’ review of existing programs and policies related to FNS.

When considering the main objectives of the interventions, we were able to categorize them into four rough groups. These include those focused on maternal and child health; those focused on food security; those monitoring existing services and advocating for improvements; and those that are directly supporting service delivery of state services. We discuss a sample from each of these groups below.

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Table 4.1: Sampling of community-managed FNS interventions

I. Maternal and Newborn Care Services	II. Manage Food Shocks	III. Monitoring and Entitlement Advocacy	IV. Devolution of Food, Nutrition & WASH Service Delivery
<ul style="list-style-type: none"> • Ekjut: Core Program • Deepak Foundation: Safe Motherhood and Child Project • SEARCH: ANKUR • Mahatma Gandhi Institute of Medical Sciences: Initiative for Child Survival • SEARCH: Home-based Newborn Care • Johns Hopkins: Shaksham • Krishi Gram Vikas: Low Birth weight Project • CINI – Mother and Child Health • CARE: RACHNA • SEWA: Family Centered Safe Motherhood and Newborn Care Project • UNICEF: Behavior Change for Nutrition 	<ul style="list-style-type: none"> • HKI: Homestead Kitchen Gardens • Jagruti: Revival of Minor Millet Cultivation • Government of Andhra Pradesh: Rice Credit Line • Government of Madhya Pradesh: Sanjha Chulha - Supplementary Feeding Program • MYRADA: Community Corn Storage • Agragamee: Grain Banks 	<ul style="list-style-type: none"> • MSSRF: Community Hunger Fighters • Government of Chattisgarh: Mitandin (ICDS) • SAHAJ: Community Action for Maternal Health • SAHAYOG: Mahila Swasthya Adhikar Manch • CINI: Community Based Malnutrition Tracking • Sakhi Arogya Samudaya Trust: Swayam Shikshan Prayog 	<ul style="list-style-type: none"> • Government of Andhra Pradesh: Nutrition Day Care Centers • Government of Odisha: PDS Operation by SHG • Government of Gujarat: Decentralization to SHGs for Supplementary Nutrition Provision • Government of Nagaland: Communitization Initiative for Health Services • Government of Uttar Pradesh: Swajal Project for Community Water Management • Government of Gujarat/Aga Khan Foundation: Gujarat Health Systems Development Project

Source: Based on authors’ review of existing programs and policies related to FNS, and Anindita Adhikari, Sitaramachandra Machiraju and Parmesh Shah. 2013.

4.1.1. Maternal Health and Newborn Care

The bulk of the activities focused on maternal and newborn care services range from antenatal and neonatal check-ups, supplemental nutrition provision, optimal feeding and care practices, hygienic behaviors like handwashing or clean water use, immunization and support during birth. These services fill an essential gap where ICDS coverage is poor or service delivery weak, and adopt a structure akin to the Jamkhed Model of community-based primary health care.⁹⁹

SERP: Community-managed Nutrition Day Care Center¹⁰⁰

The most significant intervention on nutrition is the Nutrition Day Care Centers (NDCCs) developed since 2007 by the Government of Andhra Pradesh's Society for Elimination of Rural Poor (SERP). Twenty-two centers are located in tribal area districts of the state, and provide an array of maternal and child nutrition services. SERP has been working in the state since 2000, implementing the poverty reduction project called Indira Kranthi Patham (IKP)¹⁰¹ in rural areas. IKP serves as the foundation point of origin for the NRLM.

The NDCC intervention was developed in response to the improved access to health and nutrition services for pregnant and lactating women as well as children that we have discussed in previous chapters. The model adopts a lifecycle approach and aims to address the nutrition and health needs in different phases of life including pregnancy, lactation, childhood and adolescence, with a special focus of the first 1,000 days of life. It has two major objectives:

- To provide two nutritionally balanced meals per day to pregnant and lactating women and children in the age group of six months to two years or children between six months to five years in tribal areas; and
- To serve as a venue for behavior change communication, health education and social interaction among the beneficiaries, leading to behavior change so that health and nutrition habits are adopted at the household level even after the beneficiaries are no longer enrolled at the center.

A key feature of the program is that, unlike ICDS, the entire intervention is community owned, managed and paid for. Technical inputs are provided by SERP, and users of the NDCC pay a fee for the services though there are arrangements to extend credit for such fees. **The NDCC approach involves six key interventions:**

- **Complete Meals:** The NDCC provides two well-balanced meals each day to pregnant and lactating women and children less than five years of age. The meals are served at the NDCC rather than given as take-home ration so that the beneficiaries receive the complete meal instead of sharing with other members of the household;
- **Community Kitchen Garden:** A few community members take the lead to establish a Community Kitchen Garden to produce vegetables to be used in the meals prepared at the NDCC. They grow a variety of vegetables rich in micronutrients that are often not available in foods prepared at home. There is a particular focus on growing green leafy vegetables as a source of iron to reduce anemia among the pregnant and lactating women;
- **Weaning Food:** Twice a month, the mothers of children six months to one year of age gather at the NDCC to prepare weaning powder to supplement breastfeeding for the children;
- **Health Education and Behavior Change Communication:** Aside from providing meals, the NDCC serves as a venue for health education and behavior change communication. A Health Activist, who is a *community member* selected and trained on maternal and child health topics, shares with beneficiaries the importance of antenatal care and institutional delivery,

⁹⁹ http://www.coregroup.org/storage/Practitioner_Academy/Jamkhed_Model.pdf

¹⁰⁰ 1. http://www.rd.ap.gov.in/Health/CFW%20in%20NRHM%20meeting_ppt_030608.pdf

¹⁰¹ World Bank Newsletter Vol. 10 March 2012, Health Brochure Society for Elimination of Rural Poverty, Innovations in Development-Society for Elimination of Rural Poverty.

components of a balanced diet and knowledge of common diseases when the women comes to the centers for daily meals;

- **Fixed Nutrition and Health Days:** Twice a month, the NDCC hosts a Nutrition and Health Day in convergence with the public health service providers. The event is attended by the ANM from the Health Department, AWWs from the Department of Women Development and Child Welfare, Health Activist, and village Health Committee consisting of five SHG women. Services provided to women and children include health education, antenatal care, immunizations, growth monitoring, and distribution of commonly used medicines such as oral rehydration powder, and distribution of supplementary nutrition powder; and
- **Common Interest Group for Income Generating Activities:** A common activity is identified at the village organization level to allow the beneficiaries to generate income using the NDCC as the activity venue. The earnings help the beneficiaries with micro-credit loan repayments to the NDCC and also act as additional income for the family.

An independent assessment on the early outcomes from NDCCs related to maternal and child was conducted during December 2008, and yielded promising findings:

- A greater percentage of NDCC beneficiaries had three antenatal care visits during their pregnancy compared to similar women from nonintervention villages;
- Beneficiaries who enrolled at NDCCs had newborns with birth weight averaging 2.912 kilogram (kg) compared to an average of 2.588 kg from newborns in the nonintervention group;
- A significantly higher proportion of NDCC beneficiaries was found to register their pregnancy at public health facilities. Throughout their pregnancy, a significantly higher proportion of women from NDCC attended all three antenatal care check-ups at public health facilities;
- A significantly higher proportion of women from NDCC received a full-course of IFA supplements compared to nonintervention group. A significantly higher proportion of women chose to have institutional deliveries rather than home deliveries;
- A significantly higher proportion of women from NDCC fed their newborns with breast milk within one hour of birth. In addition, a significantly smaller proportion of women from NDCC compared to nonintervention group gave pre-lacteal fluids to their newborns;
- Immediate wrapping of newborns, delayed bathing until seven days and exclusive breastfeeding for at least six months were not found to be significantly different between the NDCC group and nonintervention group; and
- In the first year after birth, significantly more mothers brought their children to receive full immunization as per schedule than mothers in the nonintervention group.

Deepak Foundation: Horoscope Tool to Engage Community on Infant Nutrition in Tribal Gujarat

The Deepak Foundation¹⁰² led an intervention across 300 randomly selected villages from four tribal blocks of Vadodara in Gujarat between January 2010 and June 2011. The objective of the intervention was to improve neonatal and infant nutrition practices through convergence of inter-departmental government services, community participation, and use of a culturally accepted tool-- a horoscope that also includes critical health information on the new born. As such, the focus was on children below two years of age, pregnant and lactating mothers, and community members.

The intervention provided horoscopes to parents to sensitize them and elicit community participation in recording vital statistics and improving the nutritional status of under-two children in tribal areas. This intervention was planned in response to the fact that the number of infant

¹⁰² See www.deepakfoundation.org.

deaths in rural areas is often deceptively low because inaccessibility of health facilities hinders accurate reporting of vital health indicators such as birth weight. Apart from conducting house visits, ASHA workers documented time of birth, birth weight, and time of initiation of breastfeeding which is required to prepare the horoscope of a newborn. The use of horoscopes helped increase the recording of birth weight, promoted timely identification and referral of low birth-weight babies, and reduced the proportion of underweight children.

In addition, there was convergence of various local institutions. For instance, VHSCs worked with the Water and Sanitation Management Organization to raise awareness on nutrition and health issues, clean drinking water quality, and timely distribution of fortified complementary food premix at AWCs. The program also focused on birth celebration through community participation to improve vital registration (time of birth, weight) and IYCF practices which allowed timely management of low birth babies

An endline survey of the project revealed that birth registration and exclusive breastfeeding improved and the percentage of children receiving complementary food premix increased. However, referrals for low birth-weight babies were not possible due to lack of newborn care services in the project area.¹⁰³ There was substantial improvement in the convergence of services and joint functioning of relevant government departments such as the Department of Health and ICDS, in particular, the attendance of government officers at the Nutrition Health Days. Interest was generated in maternal-child nutrition-health issues among local community leaders, such as members of the VHSCs, many of whom also gave time and monetary support for the programs.¹⁰⁴

Ekjut: Improving Tribal Health and Nutrition in Jharkhand and Odisha

Ekjut¹⁰⁵ has been working since 2004 in Jharkhand and Odisha to improve health and nutrition outcomes of tribal communities that belong to the Ho, Santhal, Oraon, Juang, Munda and Bhuyian tribes. The group follows a three-pronged approach to address health issues that involves monitoring, empowerment, and advocacy. Women facilitators are selected from local communities and trained to address issues of pregnancy, childbirth and newborn health. Through a series of interactions at monthly meetings, the facilitator takes the women's group through a '10 meeting Participatory Learning and Action Cycle.'¹⁰⁶ She encourages the women to discuss maternal and newborn problems, using visual aids such as picture cards and, at the end of the 10 meetings, they are able to prioritize their problems and find appropriate strategies and solutions to be implemented. At the culmination of the learning cycle, a community meeting is held to inform the larger community through street plays, puppetry and storytelling about how the women achieved the solution and to seek necessary support from the wider community.¹⁰⁷

A rigorous, cluster randomized, impact assessment found that the health and nutritional status of children and women has materially improved due to the intervention. For instance, there was a 70 percent reduction in neonatal mortality among the most marginalized within the intervention clusters compared to the most marginalized in the control areas whereas the reduction in neonatal

¹⁰³World Bank. 2012. *Family and community approaches to improve infant and young child nutrition in South Asia: a report of the World Bank South Asia region development marketplace*. Washington, D.C.: World Bank.

<http://documents.worldbank.org/curated/en/2012/05/16518830/family-community-approaches-improve-infant-young-child-nutrition-south-asia-report-world-bank-south-asia-region-development-marketplace>

¹⁰⁴ Ibid.

¹⁰⁵See www.ekjutindia.org

¹⁰⁶See <http://www.ekjutindia.org/images/womengroupcycle.gif>

¹⁰⁷See <http://www.ekjutindia.org/information.html>

mortality rate (NMR) among the less marginalized was only around 28 percent as compared to those belonging to a similar socioeconomic background.¹⁰⁸

4.1.2. Food Security Management

In Chapter 2, we identified two major issues with regard to food security in tribal communities: seasonal food insecurity and dietary diversity. As noted above, NRLM is already well aware from the experience in Andhra Pradesh of the use of grain banks and the related rice credit line, on managing seasonal shortages of food. Here we examine an experience with a kitchen gardens intervention to improve dietary diversity as well as seasonal food shortages from Bangladesh.

SERP: Grain Banks and Rice Credit Line

Grain banks, typically managed by community organizations such as SHGs, allow for streamlining of food consumption over the course of the agricultural season. Villages contribute surplus grains such as rice after harvest and draw from the grain bank in lean times, usually with an obligation to repay. Effectively, a grain bank serves as an alternate source of credit and is thought to reduce the dependence on moneylenders.

Grain banks have been used across India for decades to manage seasonal food insecurity. GoI has had a centrally-financed program to support their adoption in tribal areas since 1996.¹⁰⁹ NGOs throughout the country, such as Agramee in Odisha, our state of interest, have supported grain banks. In Andhra Pradesh, SERP too has a strategy to develop 50,000 grain banks across 22 districts.¹¹⁰

The Rice Credit Line, covering half a million families, is an innovation on the grain banks concept, tied in with the PDS system. It is being implemented by SERP in Andhra Pradesh. A family is able to borrow an amount that is equal to the difference between its monthly consumption of rice and what the PDS allots from the village federation of SHGs. This also engages the SHGs to proactively ensure that their members receive the PDS rice allotment promptly. The borrower repays in weekly instalments.¹¹¹

Despite the obvious rationale for grain banks, existing evidence calls into question their effectiveness. They are difficult to sustain,¹¹² and their impact on child nutrition is empirically ambiguous though there does appear to be a reduced dependence on moneylenders. Other sources conclude that, despite drawbacks, grain banks do indeed enhance food security for tribal communities.¹¹³

HKI: Homestead Food Production in Bangladesh¹¹⁴

Helen Keller International (HKI), along with Save the Children and a forum of NGOs, implemented a homestead food production intervention targeting 5,600 households with pregnant and lactating mothers in two districts of Barisal in Bangladesh¹¹⁵ between August 2008 and September 2009. The effort was ultimately aimed at reducing the prevalence of night blindness due to a deficiency of

¹⁰⁸Houweling, Tanja A.J. et al. 2013. The equity impact of participatory women's groups to reduce neonatal mortality in India: secondary analysis of a cluster-randomized trial. Available at: <http://ije.oxfordjournals.org/content/42/2/520.full.pdf>

¹⁰⁹ <http://dfpd.nic.in/?q=node/222> Gov of India - Dept of Food and Public Distribution, Village Grain Bank Scheme.

¹¹⁰ SERP - Andhra Pradesh State Perspectives and Implementation Plan 2011.

¹¹¹ Ibid.

¹¹² Bhattamishra, Ruchira. Grain Bank Survival and Longevity: Evidence from Orissa. *The Journal of Applied Economic Research*, August 2012 vol. 6 no. 3 311-336.

¹¹³ Reji, Edakk and Meethal. Community grain banks and food security of the tribal poor in India. *Development in Practice* 23:7, 2013.

¹¹⁴ <http://www.ifpri.org/publication/millions-fed>

¹¹⁵ We focus on the Bangladesh example for its proximity to India, but this intervention has now been tried in several countries of South Asia, Southeast Asia and the Pacific, and Sub-Saharan Africa.

vitamin A suffered by 3 percent of children living in rural parts of the country. The situation is not dissimilar to states in eastern India. In Jharkhand, for instance, less than 20 percent of tribal children under five received any form of vitamin A supplementation, according to the NFHS-3 survey.

Ultimately, the goal is to mobilize and support individuals to grow and consume vegetables grown adjacent to their homes. However, project group leaders also held meetings with the community to discuss the need for regular consumption of foods rich in iron, zinc and vitamin A, or conducted cooking demonstrations to show the importance of washing vegetables before preparing them, or adding meat or eggs to dishes to increase their nutritional value. The intervention aimed to:

- Increase year-round production, varieties, and quantities of vegetables and fruits produced by home gardening;
- Increase consumption of micronutrient-rich foods through increased household production and income, enhanced by improved knowledge and awareness through nutrition education;
- Improve the health and nutritional status of women and children; and
- Empower women through control over the resources that ensure better child care practices.

Available evidence, though still not yet conclusive, suggests that the homestead food production programming yields positive results with regard to food availability, consumption, and utilization on the three aspects of food security:

- **Availability:** the change could be seen in production increase – both in terms of quantities and varieties of vegetable production; more home gardens resulted in: a) year-round gardening increase from 3 percent to 33 percent; b) vegetable varieties increase by more than two-fold; and c) 135 kg instead of 46 kg of vegetables in three months;
- **Consumption:** the changes were: a) egg consumption increased by 48 percentage points; and b) lentils and animal products bought with income earned. Seventy-three percent of gardens are managed by women, and these women are the main decision makers for garden practices and use of the income earned from selling garden produce; and
- **Absorption:** while research showed that children living in households with developed gardens consume 1.6 times more vegetables than children without such gardens. Homestead food production has also led to a 48percent increase in the consumption of eggs, a rich source of bioavailable, pre-formed vitamin A.

Several key lessons emerged from the Bangladesh experience:

- **Dietary diversity requires behavior change in addition to increased availability.** Particularly important are messages about allocation of resources among household members and optimal feeding and care practices for infants, young children, and women;
- **Agriculture and health must be linked.** Linkages between the agricultural and health sectors are particularly needed to help ensure that preventative and curative healthcare is available for mothers and children to address the well-known interactions between nutrition and disease; and
- **Building on local practices and existing organizations is critical for successful adoption.** Practices rooted in local values, customs and practices, homestead food production inherently emphasizes community participation at all stages of the program.

Jagruti: Minor Millet Cultivation

For this study, Jagruti, an NGO based in Odisha, also piloted an activity to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha.¹¹⁶ The idea was to try a variation on the community or home vegetable garden model but with an attempt to leverage traditional knowledge and practices. Local production is meant to stem seasonal food

¹¹⁶ See Annex 2 for Case Study.

insecurity and provide diversity in the diet, and minor millets are attractive because they are locally known, nutritionally dense, can grow on poorer soil, and require less water than rice. While the pilot was successful in generating awareness on minor millet production, there remained too many barriers to adoption. We find that reviving millet cultivation only makes sense if NRLM can support access to the inputs such production requires as well as processing, consumption or sale of outputs. Otherwise, the community or home garden model is likely to prove more expedient. Still, Jagruti's successful work in the LWE areas of Kandhamal are nothing short of heroic and suggest that deep, long-term engagement might be the only way to effectively intervene in tribal areas.

4.1.3. Monitoring and Entitlement Advocacy Programs

The third set of interventions could arguably be in one of the other buckets based on their stated objectives, but we believe it is their modus operandi that sets them apart. In short, the interventions are focused on both mobilizing the community to understand and access various entitlement programs, and engaging service providers to improve quality.

MSSRF: Community Hunger Fighters¹¹⁷

The M. S. Swaminathan Research Foundation (MSSRF) has been working with the tribal communities of Koraput district in Odisha since 2011. We have reviewed the scope of tribal malnutrition in the state already, and the Community Hunger Fighters (CHFs) intervention aims to create a cadre of grassroots level community volunteers, selected by the community, who are trained to address the major causes of malnutrition in the community. Specifically the objectives are to:

- Increase awareness on nutrition- and health-related issue among the community;
- Encourage community participation in addressing malnourishment-related issues;
- Improve access to food and nutrition entitlements; and
- Improve synergy and convergence of existing government schemes relating to nutrition, health care, sanitation and education, leading to spread of an integrated hunger elimination service.

The CHFs are identified by the Gram Sabha (village council). The village communities identify five persons in the age group of 25 to 40 from each hamlet for training as CHFs. The training, using participatory methods, equips the CHFs to identify and address key factors that have an impact on the health and nutritional status of the children, women and men of the villages; impart nutrition literacy to the community; educate on and promote health and hygiene practices; advocate simple and doable measures largely based on local grains and vegetables to address malnutrition-related issues; and facilitate better access to existing government entitlements related to nutrition, health and education.

The intervention is solely based on volunteer participation by the community and led by CHFs. Together they implement an action education approach involving understanding of the nutrition problems, understanding methods of overcoming these problems and making direct nutrition interventions to address these problems. Example of activities related to health and malnutrition are:

- Measurement and monitoring of growth of children;
- Village Knowledge Centers for Nutrition;
- Promotion of local remedies; and
- Consumption of local fortified salt.

¹¹⁷www.mssrf.org/fs/CHF%20Brochure%20Final.pdf

CHFs also work closely with relevant staff of government programs to ensure food and nutrition entitlements reach the unreached. They also facilitate the system of delivery of nutrition support schemes such as ICDS and work with ASHAs to ensure better delivery of health services to the community.

The effectiveness of the program has not yet been evaluated. The intervention involving MSSRF in Koraput district of Odisha was aimed at empowering communities through intensive social mobilization and awareness creation, to expand the gains from services available from the existing entitlement schemes. At the end of intervention period, the access barriers to PDS services were witnessed to be largely overcome through issuance of ration cards to the households, where CRPs played a crucial role. Besides, application for job cards to avail employment opportunity under MGNREGS increased, while enrollment of children under ICDS showed definite signs of improvement. Some of the other key achievements of social mobilization efforts deliberated by the CRPs were: generation of demand among villagers for construction of new ICDS centers, improvement of village road conditions, and enhancement of the quality of services offered under ICDS centers. However, control over availability of entitlement services could not be improved, due to number of externalities. Overall, the short span of intervention successfully highlighted that creation of demand for entitlement services would require capacity enhancement among the communities through a cadre of representative change agents. We will come back to this intervention and this point in Annex 1.

Government of Chhattisgarh: Community Health Volunteer (Mitandin) Program

The *Mitandin* (woman community health volunteer) Program was implemented in 2001 by the Chhattisgarh Health Resource Center along with NGO partners. The objective was to improve child nutritional status particularly in tribal and remote areas: tribals make up 32 percent of the state's population.¹¹⁸ The program has a strong emphasis on nutrition education, community mobilization and monitoring to improve ICDS functioning. *Mitandins* received training and play a pivotal role in linking communities with the public health system. The program was initially piloted in 14 blocks and has witnessed a significant scale up since then. As of 2011, approximately 60,000 *Mitandins* are covering 146 blocks of the state.

The most notable impacts of the program have been on improved breastfeeding practices and better utilization of public health services.¹¹⁹ The government also notes that the program's impact has extended beyond health. For instance, *Mitandins* have taken up issues related to malpractices in PDS distribution, alcoholism and other issues relevant to the communities they serve. A study conducted in one of the tribal dominated districts notes that the *Mitandin* Program has been instrumental in universalizing ICDS services by bringing to light the condition of three of the highly marginalized primitive tribal groups (the Baigas, Pahadi Korwas and Kamars) who suffered from the worst levels of malnutrition and morbidity in the district.¹²⁰

4.1.4. Devolution of Water, Sanitation and Hygiene (WASH) and Food Security Services
In the final category, we find that, in some instances, the state has either made provisions to incorporate community groups in service delivery or to turn over service delivery to the community entirely.

PDS in Odisha and Chhattisgarh

The PDS in Odisha is an example of incorporation. It allows the SHGs to be operators of the FPSs and, indeed, many SHGs are earning an income by doing so.¹²¹

¹¹⁸Garg, 2006.

¹¹⁹Sinha and Bhatia, 2009.

¹²⁰Garg, 2006.

¹²¹http://darpg.gov.in/darpgwebsite_cms/Document/file/ccfoodorissa.pdf

Gujarat: Supplementary Nutrition Program

Gujarat provides another such example. The Ministry of Women and Child Development runs a supplementary nutrition program that aims to provide energy-dense fortified foods for children below six years of age as well as pregnant and lactating mothers daily in 10 blocks of the state. To support procurement and distribution, the state has involved SHGs, Mahila Mandals, Sakhi Mandals; 729,000 beneficiaries received food through this system.¹²²

Communitization of Health in Nagaland

The Communitization of Health project, started in the early 2000s in Nagaland, is an example of wholesale devolution. It involved the transfer of ownership of public resources and assets, control over service delivery, empowerment, decentralization, delegation and capacity building. In the first phase, all health sub-centers were devolved, which meant that the salary of the staff was to be paid through the Village Health Committee. The committees were given funds to purchase medicines from any shop they chose on the prescription of the medical officer. Efforts were made to promote indigenous medicine systems and preventive health care.

The impact assessment supported by UNICEF showed significant results. For instance, attendance of the health functionaries increased to over 90 percent in all 28 villages studied reaching 100 percent in seven. Also, importantly, unauthorized absences decreased to between 3 and 5 percent. There was a 50 percent increase in the number of children accessing health services. There were qualitative improvements in the relationship between health care providers and recipients that led to overall improved quality of both access and care, especially for marginalized communities, women and children.¹²³

4.1.5. What Did We Leave Out?

There were several programs that we came across that we left out of the discussion above for several reasons. Some models we deemed to be too intensive in terms of time and technical inputs required, such as those focused on watershed rehabilitation or adoption of practices such as the System of Rice Intensification that increases agricultural yield. Livelihoods activities such as nontimber forest product processing, and so on, were also omitted obviously to preserve NRLM's core income generation program.¹²⁴

Others were less community-managed programs and more efforts to provide health services in places where such services are entirely missing. Such a private provision of services would be difficult to incorporate into the NRLM structure. Nevertheless, at least one is worth mentioning here as a potential source for expertise on tribal malnutrition and because it incorporates strong elements of community participation.

The Society for Education Action and Community Health (SEARCH)¹²⁵ has been running a hospital for the Gond tribal communities of Gadchiroli, Maharashtra, since 1985.¹²⁶ SEARCH trains local women that are similar to ASHAs, to diagnose and treat infants with common infections at the home and village level and tests new inexpensive interventions that local people can implement after training. For instance, volunteers use a SEARCH designed abacus system to count breaths to identify pneumonia cases.¹²⁷ SEARCH workers also focus on improving hygiene, particularly menstrual

¹²²<http://www.wcd.gujarat.gov.in/int3.html>

¹²³<http://www.cbhi-hsprod.nic.in/searnum.asp?PNUM=128>

¹²⁴Welthungerlife. Foodsteps Community Initiatives for Food Security. October 2008.

¹²⁵Available at: http://searchgadchiroli.org/about%20search_back.htm

¹²⁶ Available at: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(11\)60034-2/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(11)60034-2/fulltext)

¹²⁷ See Priya Shetty. 2011. Rani and Abhay Bang—pioneers of health care in rural India. Available at [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(11\)60034-2/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(11)60034-2/fulltext)

hygiene. Local traditional healers are also trained and are given slides on malaria and provide tablets to treat malaria.

4.2. Community-driven Nutrition Models: A Glance Internationally

Several contemporary nutrition programs operating in other countries are also applying community-driven implementation models. These direct financial and technical support to the local level to support communities to choose which food and nutrition challenges they want to tackle and how. We highlight two here.

4.2.1. Nepal: Community Action for Nutrition Project

***Sunala Hazar Din (SHD)*, as the project is known, translates into English as the “golden 1,000 days.”**

It refers to the period between conception and 24 months of age, when children are most vulnerable to malnutrition. The overall objective of the SHD program is to enable Nepal to develop better knowledge, attitudes and practices to improve nutritional outcomes among children during these first 1,000 days. Changes in knowledge, attitudes and practices would address the key risk factors for child malnutrition and create demand for nutrition-related services and products. SHD is a particular type of community-driven development program in which communities choose certain goals relating to improved nutrition, formulate plans to help achieve the goals, and are granted money to implement these plans.

The SHD program is implemented using an approach that encourages communities to achieve a self-selected goal in 100 day cycles (termed the Rapid Results Approach). First, communities form a Rapid Results for Nutrition Initiative team comprising between eight and 10 individuals. Second, each team is assigned a “coach,” who helps the team select one goal from a menu of 30 which are known to have an impact on nutrition outcomes. The total list of goals is included in Annex 6, but here are some illustrative examples:

- At least ____ families make public pledge for exclusive breastfeeding of children until the age of six months, in the next ____ days;
- At least ____ children with signs of chest infection, diarrhea and/or a fever receive proper treatment within one day of on-set of symptoms, in the next ____ days; and
- ____ percent of households make a public commitment against open defecation, in the next ____ days.

Once the goal is chosen, the team develops a plan to achieve the goal. The coach can provide support as needed to formulate a work plan and budget. Fourth, the work plan and budgets are approved by the local government¹²⁸ and released to the communities. Fifth, communities start to execute their plan, aiming to achieve their goal within 100 days. Finally, at the end of the cycle, the coach (and sometimes an outside monitor) assesses whether or not the goal has been achieved. If the community has been unsuccessful, it can apply for another cycle to try to achieve the same or another goal. If the community has been successful, it can apply for two additional goals at once.

4.2.2. Indonesia: PNPM Generasi¹²⁹

In Indonesia, the Government supports a community grant program known as the National Community Empowerment Program—Healthy and Smart Generation, or PNPM Generasi. As with the Nepali 1,000 Days Project, trained facilitators help communities understand constraints in health and education, and develop solutions for these problem themselves. The community receives grants (conditional cash transfers) from the project to improve several pre-identified target indicators. Those for health were as follows:

¹²⁸Village level government for projects <US\$1,000; by district level government for projects >US\$1000.

¹²⁹“World Bank. 2013. Do Grants to Communities Lead to Better Health and Education? Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/17036> License: CC BY 3.0 IGO.”

- Four prenatal care visits;
- Taking iron tablets during pregnancy;
- Delivery assisted by a trained professional;
- Two postnatal care visits;
- Complete childhood immunizations;
- Adequate monthly weight increases for infants;
- Monthly weighing of children under three and biannually of children under five; and
- Vitamin A twice a year for children under five.

The results of an evaluation were encouraging. Childhood malnutrition reduced by 2.2 percentage points, or nearly 10 percent over the control group. Forty-four percent of the community grant went towards health activities (the rest was used for education). Of the health grant, 41 percent was used for supplementary feeding activities (such as fortified snacks for children), 27 percent for financial assistance for pregnant women to use health services, 26 percent for infrastructure and equipment, 4 percent for health worker incentives, and 3 percent on training.

4.3. What Does this Mean for NRLM?

This chapter began by asking what sort of FNS interventions SHGs could successfully undertake. The survey of experiences above suggests some answers. First, there are numerous community-managed food and nutrition activities that are compatible with the NRLM implementation model. All of those we identified or described above could be undertaken by a SHG or village organization.

Second, mobilized communities are capable of implementing a range of interventions focused on the most relevant sub-issues tied to nutrition outcomes. Not surprisingly, the majority of nutrition interventions focused on essential services for pregnant women, lactating mothers, infants and young children. However, there were also interventions that focused on mitigating seasonal food insecurity or improving diversity of diet. Others focused on improving access to and quality of existing services or managing service delivery entirely. There are several options for NRLM to consider or present to communities themselves to choose from.

Third, to be successful, community groups need a tremendous amount of sustained support in the form of capacity building, technical support, and financial resources; all of this requires a substantial investment in time. We note that in each of the cases we discussed – be it Ekjut, Deepak Foundation, MSSRF or others – the mobilizing agencies had been working in the area and mobilizing the community for a substantial period of time (measured in years) allowing them to build relationships and establish trust. Indeed, developing capacity and leadership skills of the community groups is the engine for community-driven approaches. If community learning is generally essential for any successful intervention, there appear to be two ways of facilitating the process. The first by leveraging what the communities already know and understand, and the second by creating opportunities for community members to learn from their peers or important influencers. Finally, technical inputs must also be supplied from an external source

While there appears to be much that NRLM could possibly do toward improving food and nutrition outcomes, a key constraint to confident action is a weak evidence base for most community-based interventions.¹³⁰ Nevertheless, those we discussed above were primarily chosen because there was evidence documenting their effectiveness. Community interventions by their very nature are difficult to replicate, given the peculiarities of any particular set of individuals in some unique context; this is especially so in tribal communities that are less homogenous culturally and linguistically. Towards

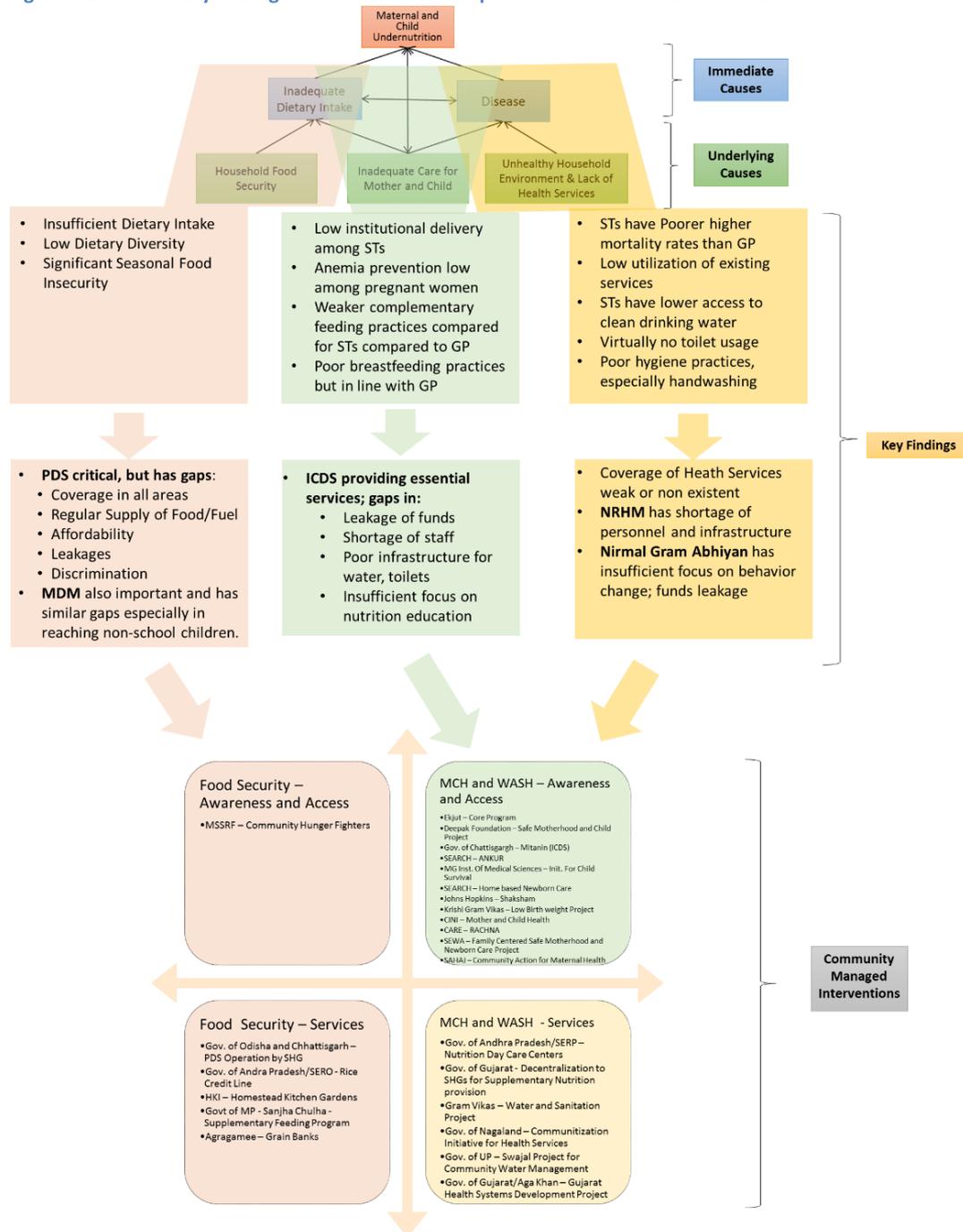
¹³⁰Avula et al. "The Operational Evidence Base for Delivering Direct Nutrition Interventions in India. IFPRI October 2013. <http://www.ifpri.org/sites/default/files/publications/ifpridp01299.pdf>

making a contribution to the existing base of evidence, we ran three short pilot interventions in Jharkhand and Odisha. These are described in detail in the Annexes 1-3.

Chapter 5: NRLM's Role in Improving Food and Nutrition Outcomes in Tribal Areas

This section recapitulates the findings from the previous chapters and suggests a way forward. Figure 5.1 shows the correspondence between the conceptual framework, key findings as well as mapping of community interventions.

Figure 5.1. Community-managed Interventions to Improve FNS Outcomes in Tribal Areas



Source: Based on authors' review of existing programs and policies related to FNS.

5.1. Key Findings

5.1.1. Tribal Communities Lag in Every Major Area Important for Nutrition

Tribal communities lag behind in every major determinant – immediate, intermediate and basic – for malnutrition. This includes year-round access to food, delivery of optimal care and feeding practices, and access to health, water, sanitation, and other basic services. More fundamentally, tribal communities are physically isolated, dependent on a shrinking base of land and forest resources, have limited access to financial, labor and housing markets, and face discrimination in accessing services and participating in the political process.

Low Consumption and Lack of Dietary Diversity are Barriers to Nutrition Outcomes for Tribals

Most studies reviewed for this Report have found that food intake of both tribal children and adults fall much below the RDAs laid down by ICMR, particularly involving deficiencies in proteins and other micronutrients.¹³¹ The NNMB investigation, for example, found that only about 30 percent of the preschool and school age children had adequate intakes of both protein and calories; nearly half the adult men and women suffered from chronic energy deficiency, and there were significantly higher levels of undernutrition among preschool children in terms of all three standard anthropometric outcomes.

Information on regular consumption expenditure by the households from NSSO 66th round reveals a significant difference in food expenditure between tribal and nontribal groups across the major tribal-concentration states in India. This correlates highly with overall poverty levels in the respective states. Inequality in food expenditure is most prominent for consumption of milk and other animal products (eggs, meat and fish), with less intense differentials for cereals and other staple foods.

Per capita availability of food grains is one indicator of overall food availability and gives a sense of the supply side. In Jharkhand, it is 250 (g/day) as compared to 583 nationally¹³² (2008-09) and 389.27 (g of cereals/day) in Odisha as compared to the 420 national level of consumption in 2000.¹³³

The findings from the analysis of our primary data from Jharkhand, which deployed a more granulated region-level analysis, suggest that average food expenditure of tribal families tends to be higher in areas where they account for a relative minority of the total population. Across the region groups, tribals consistently spend a higher proportion of their total income on food than nontribals, with a higher share noted in regions where tribals account for about a quarter to less than half of the total population (*for details see IHD 2013*). The emerging pattern further suggests that, while poorer tribal households tend to allocate a higher proportion of their food budgets on cereals vis-à-vis their nontribal counterparts of similar economic standing, the gap narrows down on moving up the economic status levels. Results for more basic expenditure distribution-based inequalities account for several important findings; a poor tribal household – in rural and urban areas alike – consistently and significantly spends a lower amount on food than a poor nontribal household, when one considers separate expenditure distributions for these groups.

Continuous Access to Food Remains a Substantial Problem for STs

With regard to continuity of food access, we can turn to the primary data on the ST population in Jharkhand (Figure 5.2) to note that 55 percent of the population faces some degree of food

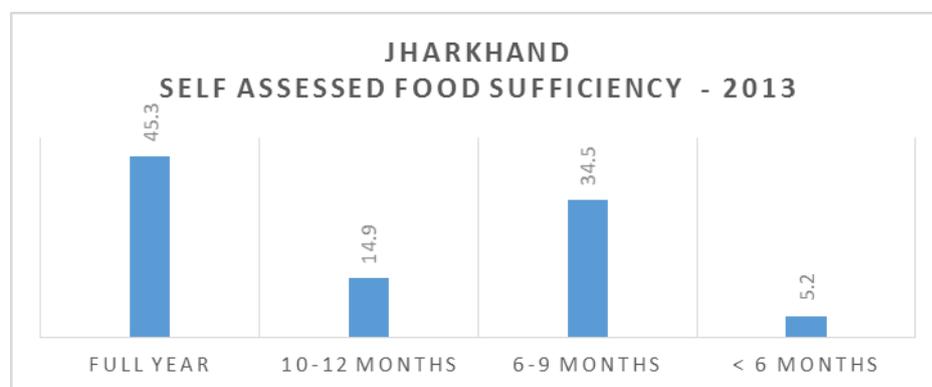
¹³¹ The most representative study has been a large, nationwide survey of tribal households, conducted by the NNMB/NIN, with the main results summarized in: NNMB (2000): Diet and Nutritional Status of Tribal Population. NNMB Tech Report No. 19, NIN, Hyderabad, and in: NNMB (2009): Diet and Nutritional Status of Tribal Population and Prevalence of Hypertension among Adults: Report on Second Repeat Survey. NNMB Tech Report No. 25, NIN, Hyderabad.

¹³² http://finance-jharkhand.gov.in/budgetjhr/download/economic_survey/economic_survey_201112.pdf

¹³³ UNWFP, Food Insecurity in Odisha, an analysis of secondary data, India.

insecurity at some point in the year. In a 2006 study, Chakravarty and Dand¹³⁴ found a direr situation in Gujarat where nearly three-quarters of the tribal households in Panchmahals, faced severe food insecurity for more than six months a year, while only 19 percent faced the same situation amongst a comparable sample of nontribal households in Rajkot. Overall, only about 7 percent of the tribal households were found to be food secure round the year.

Figure 5.2. Self-assessed Food Sufficiency, Jharkhand, 2013



Source: Jharkhand 2013 data.

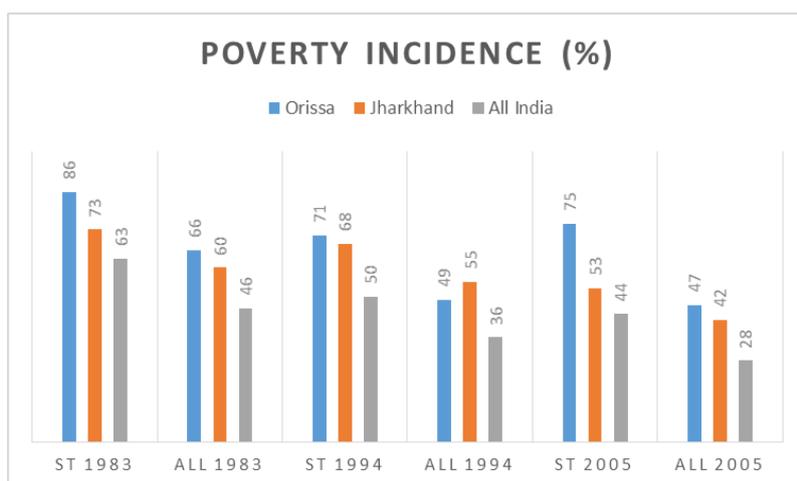
The implications of seasonal food insecurity can have devastating short- and long-term consequences. Our data from Jharkhand suggest that households and communities use progressive, more aggressive coping strategies in dealing with shortages. For acute shortages, of less than five days, there might be dietary changes such as reducing the number and quantity of meals, and borrowing food from friends/relatives and skipping meals by adults. Responding to chronic shortages lasting longer, often during droughts or the monsoon months, more drastic measures are taken such as gathering wild fruits, outmigration, and distress selling of critical assets such as land, or withdrawing children from school to work. In places where grain banks are available, this was cited as a means to manage chronic shocks.

STs Face Higher Levels of Poverty and Low Levels of Income which Translate to Lower Food Security

The official estimates show that income poverty declined from 55 percent in the early 1970s to 28 percent in 2004-05, but states with larger tribal populations have not kept pace with the rates nationwide. In states with high tribal populations (about 10 percent of the state’s total population), ST households exhibited poverty rates that were higher than across the nation as a whole in 2004-05 (with the exception of Assam). The highest poverty rates recorded for tribal groups were in Odisha, with the tribal population registering a head count ratio of 75 percent in 2004-05 – an *increase* of about 6 percent from 1993-94 levels. Tribals in rural areas in Odisha were particularly worse off, with poverty levels among the group declining at a slower pace (13 percent) during 1983-2005 compared to a decline of 44 percent for other groups (non SCs and -STs). Tribals in rural areas in Madhya Pradesh, Maharashtra, Rajasthan, Jharkhand and Chhattisgarh too recorded far lower declines in poverty than other groups (Das et al., 2010) (Figure 5.3). Overall, the level of chronic childhood malnutrition in states having higher tribal populations accounts for higher rates, as per NFHS-3.

Figure 5.3. Poverty Incidence (%)

¹³⁴Chakravarty, S. and S. Dand. 2006. Food Insecurity in Gujarat: A Study of Two Rural Populations, *Economic and Political Weekly*, June 3, 2006, pp. 2248-2258.



Source: Das et al. 2010.

The Jharkhand 2013 data show that higher income translates almost directly to higher food security, but FNS outcomes in the richest quintile are still poor, and dietary diversity (indicating the qualitative aspect of food security) in particular is, again, an issue across the board. Overall, 86 percent of the richest quintile is food secure compared to only 33 percent of the poorest. Further, 27 percent of the poorest quintile suffers from acute lack of food security, or hunger, while only 8 percent of the richest quintile does. However, the data show that the phenomenon of food insecurity is pervasive even in the richer households. Nearly 15 percent in the richest quintile is found to be food insecure, 70 percent has low or moderate food frequency scores, 75 percent has low or moderate dietary diversity, and 25 percent report not having enough food to last the entire year. Indeed, poor dietary diversity is a common theme across socioeconomic profiles. Even in households that have some measure of food security, the quality of that diet is quite poor in terms of dietary diversity. This is, perhaps, another reason that food security is not translating into higher nutrition outcomes.

STs Lag in Most Maternal and Child Care Practices

The NFHS-3 data show that, while the indicators for maternal and child care are poor across India, the tribal population is generally worse (breastfeeding proving the exception). In case of childcare, as per the recommendation on preferable initiation of immediate breastfeeding after one hour of birth, slightly less than one-third (28.5 percent) of the ST infants were found to be initiated with highly nutritious first breast milk (colostrum); the rate is comparatively higher than among SCs (23.2 percent), also in general (25.2 percent) (Table 5.1). However, only 10 percent of ST infants in Jharkhand were given colostrum, compared to a similar situation among SCs (9.6 percent) and in general (11.2 percent).

Table 5.1: Maternal and childcare indicators

	ST	SC	Overall
Antenatal care check up	70.5	74.2	77.1
Percentage of institutional deliveries	17.7	32.9	38.7
Childhood vaccination	31.3	39.7	43.5
Children breastfed within an hour of birth	28.5	23.2	25.2
Median duration of predominant breastfeeding (in months)	6.2	5.3	6.4
Percentage of children (6-23 months) fed with 3 IYCF practices	14.0	18.8	20.7
Percentage of children (6-23 months) fed with 3 or more food groups	14.3	19.6	22.1

Source: NFHS, 2005-06.

STs Face Gaps in Health, Water and Sanitation and Other Services Essential for Nutrition

The supply of health services is quite poor in tribal areas. Often, in spite of the physical existence of a large number of PHCs established in government buildings across the states, availability of doctors

at PHCs in the tribal areas remains as the biggest challenge. There is also a massive shortfall of nurses/midwives/staff nurses at PHCs and CHCs in tribal areas. The phenomenon is random in Odisha with 799 vacant posts in the said categories, followed by Madhya Pradesh with 646 and Chhattisgarh with a shortfall of 556 nurses/midwives/staff nurses.

The poor supply of services is matched by low utilization. As per the estimates of NFHS-3, the likelihood of receiving care from a doctor is the lowest for ST mothers (only 33 percent compared to the all India total of 50 percent and 42 percent for SCs). Among ST children who suffered from diarrhea in the two weeks preceding the survey, nearly one in every three did not receive any treatment. Only 27 percent of ST women visited a health facility or camp for themselves or their children in the three months preceding the survey. Notably, distance emerges as a major barrier (44 percent women reported it as a major reason) preventing women from visiting health centers to seek treatment or related health service. Again, compared to about 19 percent of women overall reporting that no female health care providers were available at these facilities, the proportion in the case of ST women was a high of 28 percent.

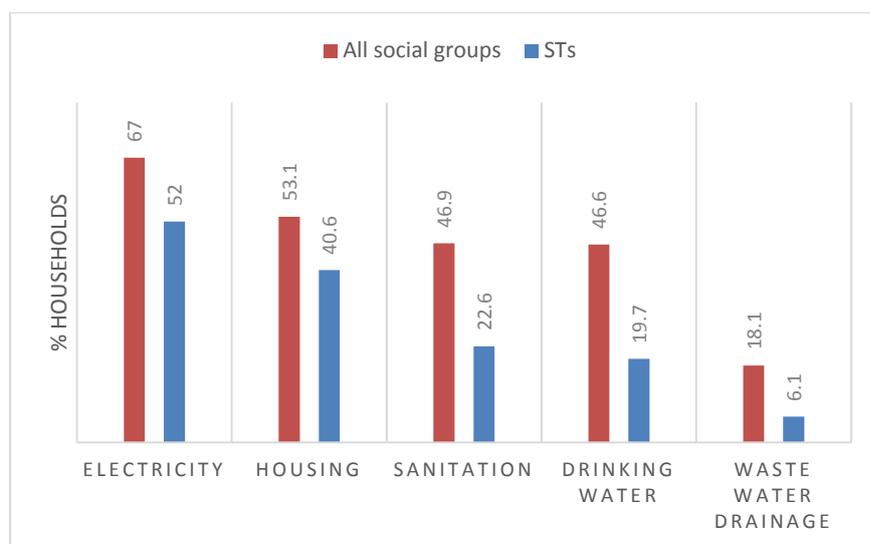
Despite the critical importance of water and sanitation services, they are generally missing or, as was the case with health, of poor quality in tribal communities (though this is true for India generally). Even more troubling is the situation on sanitation facilities. In rural areas, the highest proportion of nonavailability of toilet facilities was noticed in the case of ST households (74 percent) and availability of a within-premises toilet facility was lowest among ST households (nearly 6percent)(NSSO 2008-09). Even the recent Census estimated only around 23 percent tribal households, at a pan-India level, had access to toilets, which is about half of that reported by the overall population (46.9 percent). Two-thirds (75 percent) of the tribal households in India have no access to latrines, compared to the national figures of 50 percent. The Jharkhand survey (2013) showed that less than 2 percent of tribal households have proper drainage facilities or modern toilet facilities, highlighting significant public health risks.

Table 5.2: Proportion of households (per 1,000) who <u>do not</u> get sufficient drinking water throughout the year			
Household social group	Rural	Urban	Combined
ST	237	157	228
SC	131	107	126
OBC	120	87	111
Others	130	80	108
All	138	89	124

Source: NSSO Housing Conditions and Amenities in India, 2008-09.

Other essential services, especially those related to water (Table 5.2) and sanitation, demonstrate a similar pattern of poor service delivery (Figure 5.4).

Figure 5.4. Tribals Trail in All Basic Amenities



Source: Census 2011.

Perspectives from the Communities Seem to Support Analytical Findings

The qualitative discussions undertaken by the Jharkhand 2013 survey offer perspectives into how food security and nutrition are perceived and understood. Culturally, days with three meals are considered to be good food days, on par with festivals or days when households earn a cash income. These good days are from December to January, and bad days are September to November and again in March and April. This suggests the seasonal variation in food security noted from the data.

In terms of perceived causes, the view seemed to be that food insecurity resulted from lack of land and low productivity of land due to poor irrigation. The lack of jobs and mono-cropping were also mentioned by several participants of FGDs. Additionally, people commented on the lack of access to government services, especially due to misallocated BPL cards. Though this did not come through in the data analysis, alcohol and illness were persistently mentioned factors.

Prioritization of Issues: Seasonal Food Insecurity, Dietary Diversity, Nutrition Behaviors, and Access to FNS Services Most Important

The Jharkhand 2013 data offer a few hints on which issues could be prioritized using a regression model of childhood chronic malnutrition against an array of explanatory factors.¹³⁵ It suggests that household-level vulnerability factors¹³⁶ are most important, followed by health and sanitation supply-side factors, and then mothers' cash income status. Being in moderately vulnerable households compared to low vulnerability households increased the odds of being underweight by 44 percent. Utilization of health services, in this case measured by immunization, reduced the odds of being underweight by 30 percent. ICDS clearly has a big impact on reducing the odds of malnutrition by 30 percent compared to those who do not use ICDS. Household health and sanitation behaviors dramatically reduce the odds of being underweight by 23 percent. Mothers

¹³⁵ The factors were: age, sex, income, household vulnerability, village vulnerability, hygiene practices, whether the mother earns a cash income, quality of essential services, child health status, and health service utilization.

¹³⁶ The household-level vulnerability index was derived based on a factor analysis of the following variables: income, assets, household environment, housing type, source of drinking water, purity of drinking water, latrine type, education level, livelihood activity, landholding patterns, social capital, and shocks. The index was derived based on a factor analysis of these variables, which was then normalized into a scale of 0-100. Instead of any subjective thresholds to classify households based on this normalized index score values, we designate the lowest third of the distribution (that is, households with a score of 0-33) as of high vulnerability, the middle-third (with a score of 34-66) as of moderate vulnerability, and the highest third (with a score of 67-100) as of low vulnerability. This variable was then checked for consistency with other variables and found to be consistent (Annex 5).

earning cash reduces the odds of being underweight by 20 percent. From the above, we conclude that four major areas for intervention focus could be: (i) hygiene behaviors; (ii) improved access to and utilization of services could serve as areas for intervention to which we add (ii) dietary diversity; and (iv) seasonal food insecurity.

5.1.2. An Array of Government Programs Exist to Address Nutrition but Implementation Issues Constrain Effectiveness

GoI has been implementing a number of programs that impact nutrition and food security outcomes directly or indirectly. The direct programs include the targeted PDS, ICDS, MDMS in primary schools (now under extension to secondary schools), and the recent NFSA. On the other hand, MGNREGS and NRLM aim at increasing household income and purchasing power for food security, particularly for BPL households. Programs such as NRHM and NBA aim to provide health and community environmental hygiene services that are important for nutrition wellbeing.

Nearly all of these major programs face supply-side, service delivery and utilization challenges, often at the community level, that reduce their intended effectiveness. Despite showing improved performance in many states such as Odisha and Bihar, PDS struggles to maintain sufficient supply, has low quality of goods, or people who need BPL cards do not have them or, even if they do, they face discrimination in trying to get their rations. ICDS faces similar challenges in providing wide coverage, maintaining adequately trained personnel or ensuring high levels of utilization. MNREGS is plagued by insufficient work, slow or late pay, missing job cards and low participation. NRHM or MDMS similarly face infrastructure gaps and insufficient teachers or health professionals. Both the ICDS and NBA have been less than successful in their IEC activities, whether to encourage breastfeeding or toilet use. There are charges of financial mismanagement or leaked resources around each of these programs. Indeed, many people simply seem unaware of these entitlements or, especially in the case of STs, face discrimination in trying to access them. The policies too face similar implementation challenges as in the case of PESA or TSP. The incidence of LWE is also seen as having contributed to disruption in delivery of many of these programs, especially in far-flung remote habitations which also happen to be tribal areas.

Despite improvements in PDS, MDMS and ICDS, key structural and last mile constraints remain.

PDS in Odisha has seen substantial improvements in terms of proximity of PDS outlets, regular supply and increased quantity of food grains. Recent studies show that there is a trend towards improvement in PDS even in the KBK region (Jena, 2008; Khera 2008; Aggarwal 2011). While Jharkhand has also been improving at a slower pace, both states need to plug leakages in the PDS system and expand PDS management from private dealers to g GPs, cooperatives and women's SHGs. A comprehensive study on ICDS by the Planning Commission found significant gaps in service delivery and utilization in Odisha and Jharkhand. The Jharkhand 2013 data show many areas of strengthening for ICDS, such as irregular weighing, counselling on growth charts,¹³⁷ and deworming. Overall, MDMS has made a substantial contribution to improving school enrolment; however, in terms of reducing social inequalities and caste discrimination, the results have been mixed. While MDMS is performing better in Odisha, in Jharkhand, recent evidence shows that in 11 districts of the state, almost all with high tribal concentrations, utilization levels were around 40-50 percent on an average.¹³⁸

¹³⁷IHD. 2013. Determinants of Food Security and Nutrition in Tribal and Backward Areas. A report submitted to the World Bank (unpublished).

¹³⁸ Report available online at:
http://mdm.nic.in/Files/Review/Reports/2012/Jharkhand_Review_Mission_Report_Feb_2012.pdf

Weaker coverage and uptake of FNS programs in tribal areas. PDS coverage tends to be weaker in tribal areas due to the nonavailability of PDS shops in the vicinity, absence of stocks, poor grain quality, erratic availability and schedule, and overall lack of household cash to purchase grains. These factors lead to lower uptake of PDS in tribal areas. A number of micro studies have reported that, in backward regions, often with a higher concentration of tribal and other vulnerable populations, ICDS services are grossly inadequate, and more likely to exclude households and children at the greatest risk of undernutrition. Leakage and unavailability of funds to purchase the PDS good, and unavailability of PDS goods at the shops restrict tribal households from availing PDS in Jharkhand (Centre for Environment and Food Security, 2005). The Jharkhand 2013 data also find that the NREGA participation rates among ST households was low (30 percent). Unavailability of work carried out under the program remains the major reason for households not participating in MNREGS (48 percent). Other reasons include not possessing the job card (31 percent), and unaware of such programs (11 percent).

Communities value FNS programs, but face several access constraints. Community-level interactions in Jharkhand and Odisha have highlighted the community's perceptions on and problems with many programs. The qualitative discussions also offer insights on the grassroots perceptions:

- *PDS is seen as extremely important, but coverage is thought to be poor and not universally accessible.* Further, supply of food materials is noted to be insufficient. People also cited measurement discrepancies, poor rice quality, and irregular rations. Research has also shown that beneficiary communities are not well aware of their food entitlements under PDS. The later phase of the present study, in the intervention villages of Odisha that had a large proportion of tribal inhabitancy, showed many households did not have ration cards which entitle them to access PDS benefits. Often the tribal households, as mentioned, faced difficulties in applying for such cards, due to the number of formalities and documents required;
- *Health services weak in providing information and counselling.* The ANM is seen as a vital member of the community but mostly imparts services (immunization) or items (iron pills) rather than information or counselling related to optimal food, nutrition and hygiene behaviors that impact nutrition wellbeing;
- *ICDS seen as a good source of information.* The AWWs are seen as agents of information (encourage dietary diversity, for example). However, a common complaint was the proximity of the AWC;
- *Schools and mid-day meals are thought to be important,* but there were concerns about teacher absenteeism. Teachers often do not attend forcing the schools to close and the associated MDMS program becoming unavailable; and
- *MNREGA is important, but people want more work and faster pay.* People complain of not getting enough days, work unsuitable for women, and low frequency of wages. There are also charges of malpractices through falsified work and payments. Nevertheless, the program does seem to reduce outmigration.

5.1.3. Community-managed Models Could Have Successes in Addressing Gaps in Government Programs

With its grassroots focused, SHG-driven implementation model, NRLM might optimally be placed to improve tribal malnutrition by supporting communities to engage with existing programs and policies for food and nutrition. Empowered SHGs could bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality.

A scan of the Indian landscape to identify FNS interventions that are being or have been tried suggests that there are a number that SHGs under the NRLM structure could successfully

undertake these interventions. Indeed, SERP in Andhra Pradesh has developed several models that are operating at scale. Other groups have undertaken promising micro interventions. Some of these have evidence of impact but, by and large, a thin evidence base for most suggests a more cautious path forward, focused on experimentation to understand what might work in a tribal context.

SERP's Experience in Andhra Pradesh

Community-managed Nutrition Day Care Center

The most significant intervention on nutrition is the NDCCs developed since 2007 by the Government of Andhra Pradesh's SERP. Twenty-two centers are located in tribal area districts of the state, and provide an array of maternal and child nutrition services. SERP has been working in the state since 2000, implementing the poverty reduction project called IKP in rural areas. IKP serves as the foundational point of origin for the NRLM. The NDCC intervention was developed in response to the need for improved access to health and nutrition services for pregnant and lactating women as well as children that we have discussed in previous chapters. The model adopts a lifecycle approach and aims to address the nutrition and health needs in different phases of life including pregnancy, lactation, childhood and adolescence, with a special focus of the first 1,000 days of life. It has two major objectives:

- To provide two nutritionally balanced meals per day to pregnant and lactating women and children in the age group of six months to two years or children between six months to five years in tribal areas; and
- To serve as a venue for behavior change communication, health education and social interaction among the beneficiaries, leading to behavior change so that health and nutrition habits are adopted at the household level even after the beneficiaries are no longer enrolled at the center.

An independent assessment on the early outcomes from NDCCs related to maternal and child care was conducted during December 2008, and yielded promising findings:

- A greater percentage of NDCC beneficiaries had three antenatal care visits during their pregnancy compared to similar women from nonintervention villages;
- Beneficiaries who enrolled at NDCCs had newborns with birth weight averaging 2.912 kg compared to an average of 2.588 kg in newborns in the nonintervention group;
- A significantly higher proportion of NDCC beneficiaries was found to register their pregnancy at public health facilities. Throughout their pregnancy, a significantly higher proportion of women from NDCC attended all three antenatal care check-ups at public health facilities;
- A significantly higher proportion of women from NDCC received the full course of IFA supplements compared to the nonintervention group. A significantly higher proportion of women chose to have institutional deliveries rather than home deliveries;
- A significantly higher proportion of women from NDCC fed their newborns with breast milk within one hour of birth. In addition, a significantly smaller proportion of women from NDCC compared to the nonintervention group gave pre-lacteal fluids to their newborns;
- Immediate wrapping of the newborn, delayed bathing until seven days and exclusive breastfeeding for at least six months were not found to be significantly different between the NDCC and nonintervention groups; and
- In the first year after birth, significantly more mothers brought their children to receive full immunization as per schedule than mothers in the nonintervention group.

Grain Banks and the Rice Credit Line

Grain banks, typically managed by community organizations such as SHGs, allow for streamlining of food consumption over the course of the agricultural season. Villages contribute surplus grains such as rice after harvest and draw from the grain bank in lean times, usually with an obligation to

repay. Effectively, a grain bank serves as an alternate source of credit and is thought to reduce the dependence on moneylenders.

Grain banks have been used across India for decades to manage seasonal food insecurity. GoI has had a centrally financed program to support its adoption in tribal areas since 1996. NGOs throughout the country, such as Agramamee in Odisha, our state of interest, have supported grain banks. In Andhra Pradesh, SERP too has a strategy to develop 50,000 grain banks across 22 districts.

The rice credit line, covering half a million families, is an innovation on the grain banks concept tied in with the PDS system. It is being implemented by SERP in Andhra Pradesh. A family is able to borrow an amount that is equal to the difference between their monthly consumption of rice and what the PDS allots from the village federation of SHGs. This also engages the SHGs to proactively ensure that their members receive the PDS rice allotment promptly. The borrower repays in weekly instalments.

Despite the obvious rationale for grain banks, existing evidence calls their effectiveness into question. They are difficult to sustain, and their impact on child nutrition is empirically ambiguous though there does appear to be a reduced dependence on moneylenders. Other sources conclude that, despite drawbacks, grain banks do indeed enhance food security for tribal communities.

CRP-supported, SHG-led, Community-managed Models

There are numerous community-managed food and nutrition activities that are compatible with the NRLM implementation model. All of those we identified or described could be undertaken by a SHG or village organization facilitated by a resources person with general skills in (i) mobilization, monitoring or advocacy; (ii) food security interventions; or (iii) maternal and child care and nutrition. Finally, another set of interventions are (iv) a mixture of the above where SHGs are linked to an existing scheme and assume implementation responsibilities. (A sample these interventions are shown in **Error! Reference source not found.**, and we describe an illustrative example from each of these four.)

Table 5.3: Sampling of community-managed FNS interventions

I. Maternal and Newborn Care Services	II. Manage Food Shocks	III. Monitoring and Entitlement Advocacy	IV. Devolution of Food, Nutrition & WASH Service Delivery
<ul style="list-style-type: none"> • Ekjut: Core Program • Deepak Foundation: Safe Motherhood and Child Project • SEARCH: ANKUR • Mahatma Gandhi Institute of Medical Sciences: Initiative for Child Survival • SEARCH: Home-based Newborn Care • Johns Hopkins: Shaksham • Krishi Gram Vikas: Low Birth weight Project • CINI – Mother and Child Health • CARE: RACHNA • SEWA: Family Centered Safe Motherhood and Newborn Care Project • UNICEF: Behavior Change for Nutrition 	<ul style="list-style-type: none"> • HKI: Homestead Kitchen Gardens • Jagruti: Revival of Minor Millet Cultivation • Government of Andhra Pradesh: Rice Credit Line • Government of Madhya Pradesh: Sanjha Chulha - Supplementary Feeding Program • MYRADA: Community Corn Storage • Agramamee: Grain Banks 	<ul style="list-style-type: none"> • MSSRF: Community Hunger Fighters • Government of Chattisgarh: Mitandin (ICDS) • SAHAJ: Community Action for Maternal Health • SAHAYOG: Mahila Swasthya Adhikar Manch • CINI: Community Based Malnutrition Tracking • Sakhi Arogya Samudaya Trust: Swayam Shikshan Prayog 	<ul style="list-style-type: none"> • Government of Andhra Pradesh: Nutrition Day Care Centers • Government of Odisha: PDS Operation by SHG • Government of Gujarat: Decentralization to SHGs for Supplementary Nutrition Provision • Government of Nagaland: Communitization Initiative for Health Services • Government of Uttar Pradesh: Swajal Project for Community Water Management • Government of Gujarat/Aga Khan Foundation: Gujarat Health Systems Development Project

Source: Based on authors' review of existing programs and policies related to FNS

CRPs Focused on Maternal and Child Nutrition

Ekjut has been working since 2004 in Jharkhand and Odisha to improve health and nutrition outcomes of tribal communities. The group follows a three-pronged approach to address health issues that involves monitoring, empowerment and advocacy. Women facilitators are selected and trained from local communities to address issues of pregnancy, childbirth and newborn health. Through a series of interactions at monthly meetings, the facilitator takes the women's group through a '10 meeting Participatory Learning and Action Cycle.' She encourages the women to discuss maternal and newborn problems, using visual aids such as picture cards, and, at the end of the 10 meetings, they are able to prioritize their problems and find appropriate strategies and solutions to be implemented. At the culmination of the learning cycle, a community meeting is held to inform the larger community, through street plays, puppetry and storytelling, about how the women achieved the solution and to seek necessary support from the wider community.

A rigorous, cluster randomized, impact assessment found that the health and nutritional status of children and women have been materially improved due to the intervention. For instance, there was a 70 percent reduction in NMR among the most marginalized within the intervention clusters compared to the most marginalized in the control areas, whereas the reduction in NMR among the less marginalized was only around 28 percent as compared to those belonging to a similar socioeconomic background.

CRPs Focused on General Entitlement Access and Advocacy

MSSRF piloted a model for this study that aimed to improve access to government entitlement schemes that can have a direct bearing on FNS outcomes such as ICDS, MDMS, PDS, and KSY. It was implemented in tribal areas of Koraput district, Odisha. This intervention of supporting a dedicated resource person to mobilize the community to access food and nutrition entitlements has much appeal for us because it allows for both community mobilization activities and the leveraging of existing programs. The combination appeared to be "low hanging fruit," and we found that to, indeed, be the case. The intervention proved effective in a short period of time, and we can recommend the approach for NRLM to adopt. However, an important caveat is that, while demand for services is relatively easy to generate, the corresponding improvement in service delivery is not. As such, an intervention can only have limited utility in the long run.

CRPs Focused on Food Shocks

The objective of the HKI Home Vegetable Garden intervention is to mobilize and support individuals to grow and consume vegetables grown adjacent to their homes. However, project group leaders also held meetings with the community to discuss the need for regular consumption of foods rich in iron, zinc, and vitamin A, or the group leaders conduct cooking demonstrations to show the importance of washing vegetables before preparing them, or adding meat or eggs to dishes to increase their nutritional value. **Available evidence, though still not yet conclusive, suggests that the homestead food production programming yields positive results with regard to food availability, consumption, and utilization of the three aspects of food security.**

For this study, Jagruti, an NGO based in Odisha, also piloted an activity to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha.¹³⁹ The idea was to attempt a variation on the community or home vegetable garden model but with an attempt to leverage traditional knowledge and practices (see Annex 2 for details). Local production is meant to stem seasonal food insecurity and provide diversity in the diet, and minor millets are

¹³⁹ See Annex 2 for the Case Study.

attractive because they are locally known, nutritionally dense, can grow on poorer soil, and require less water than rice. While the pilot was successful in generating awareness for minor millet production, there remained too many barriers to adoption. We find that reviving millet cultivation only makes sense if NRLM can support access to the inputs such production requires as well as the processing, consumption or sale of the outputs. Otherwise, the community or home garden model is likely to prove more expedient. Still, Jagruti's successful work in the LWE areas of Kandhamal are nothing short of heroic and suggest that deep, long-term engagement might be the only way to effectively intervene in tribal areas.

SHGs or Community Groups Providing Last Mile Service Delivery for Government Schemes

In the final category, we find that, in some instances, the state has either made provisions to incorporate community groups in service delivery or to turn over service delivery to the community entirely. The PDS in Odisha is an example of incorporation. It allows the SHGs to be operators of the fair price shops and indeed many SHGs are earning an income by doing so.¹⁴⁰ Gujarat provides another such example. There the Ministry of Women and Child Development runs a supplementary nutrition program that aims to provide energy-dense fortified food for children below six years of age as well as pregnant and lactating mothers daily in 10 blocks of the state. To support procurement and distribution, the state has involved SHGs, Mahila Mandals, and Sakhi Mandals; 729,000 beneficiaries received food through this system.

The Communitization of Health Project in the early 2000s in Nagaland is an example of wholesale devolution. It involved the transfer of ownership of public resources and assets, control over service delivery, empowerment, decentralization, delegation and capacity building. In the first phase, all health sub-centers were devolved, which meant that the salary of the staff was to be paid through the VHCs. VHCs were given funds to purchase medicines from any shop they chose on the prescription of the medical officer. Efforts were made to promote indigenous medicine systems and preventive health care. **The impact assessment supported by UNICEF showed significant results.** For instance, attendance of the health functionaries increased to over 90 percent in all 28 villages studied reaching 100 percent in seven. Also, importantly, unauthorized absences decreased to between 3 and 5 percent. There was a 50 percent increase in the number of children accessing health services. There were qualitative improvements in the relationship between health care providers and recipients that led to overall improved quality of both access and care, especially for marginalized communities, women and children.

5.2. Key Recommendations

5.2.1. Recommendation 1: Articulate and Support FNS as a Core Approach for Tribal Areas

First, we recommend the NRLM articulate FNS as a core area of focus in tribal areas and direct the state-level missions to prioritize the issue in implementation plans. The scope of the malnutrition problem in tribal areas and its stark implications strongly suggest that all major public programs, including NRLM, that are able to directly or indirectly address the issue do so. With its grassroots focused, SHG-driven implementation model, NRLM might optimally be placed to improve tribal malnutrition by supporting communities to engage with existing programs and policies for food and nutrition. Empowered SHGs could bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality.

5.2.2. Recommendation 2: Assist State Rural Livelihood Missions to Promote Community-managed FNS Activities in Tribal Areas

Second, we recommend that NRLM develop a national technical and financial assistance program for FNS to support State Rural Livelihood Missions (SLRMs) to promote community-led FNS

¹⁴⁰<http://darpg.gov.in/darpgwebsite/cms/Document/file/ccfoodorissa.pdf>

activities in TABAs. We envision such a program to have three roles: (i) identification and validation of suitable interventions; (ii) technical support for their implementation and scale up; and (iii) resources to catalyze scale up. The findings above offer NRLM a place to start on food and nutrition challenges in tribal areas, but not stop. The interventions noted above could use independent validation, and many others could be also be tried and tested. This suggests that NRLM take an experimental attitude toward FNS interventions and systematically test promising and emerging ideas. A Social Observatory already exists as a center for assessing real time impact for the project, and it might prove a good model for the suggested tribal area program which could take forward the “identify – pilot – validate” learning cycle that this study has started in a small way. Once programs are thought to be suitable for scale up, a great deal of technical and financial support would be needed for the initial roll out to the state programs.

5.2.3. Recommendation 3: Create Institutional Structures in SRLMs to Support Investments in Community-managed FNS Interventions

Our third recommendation is for the SRLMs to create an institutional space to undertake these activities, possibly in the form of a FNS committee or task force. Even with a directive and a mix of technical and financial support from the NRLM at the center, it is ultimately the SRLMs that must plan, finance, and support the implementation of FNS interventions. A dedicated team in the SRLM would undertake these activities. Such committees for gender and water and sanitation already exist in some states such as Odisha and Jharkhand, and they need not be large: two people to spearhead FNS interventions should be sufficient in most cases.

A funding mechanism and planning support to the community are essential requirements to catalyze community managed FNS interventions; NRLM already has some experience with this. With regard to planning, interventions or pilots could be included in the annual action plans. A community investment fund is also standard to the program which provides capital to SHG federations, which, in turn, can make loans to individual SHGs according to a micro-credit plan. This requires a plan for use of the loan, and acceptable use of such funds already includes FNS. However, this mechanism could be expanded, streamlined and more specifically targeted toward community FNS interventions. SHGs could be offered a menu of possible FNS interventions and given a fast track to loan access, should they wish to undertake an activity from the list. This, in combination with technical support from a trained CRP (as noted in the previous recommendation), would allow community groups to more easily take up FNS activities. Aside from proactive funding mechanisms, there could also be an expansion of funds available in the case of emergencies. The Food Risk Fund is an example and in this arrangement families could contribute to a food-related savings fund and draw from it in times of food shortage or emergency. Variations of this include the rice credit line, discussed above, which involves credit for financing the gap in PDS allotment and household need. These mechanisms are useful if the shock is idiosyncratic or specific to an individual or household. However, should there be a covariate shock affecting entire regions or communities (in the event of a drought, for example), there could be better resourced emergency measures such as the bulk purchase and distribution of food from the market.

Finally, an important aspect of implementation will be building partnerships with technical agencies to support village organizations and SHGs to develop capacity and deploy interventions. The mapping in this report suggests a way forward to potential partnerships. Such partnerships will facilitate the final recommendation below.

5.2.4. Recommendation 4: Promote a Cadre of FNS Community Resource Persons

Specially training CRPs are an essential catalytic element of the successful community-managed FNS programs discussed above. As such, we recommend that SRLMs promote a cadre of FNS CRPs to assist the adoption of community-managed FNS models in tribal areas. The specialized CRPs must have the capacity to mobilize the community and SHGs but, specifically, they could be trained in one

of three areas. One area would lead efforts to manage food security, such as kitchen gardens or grain banks and to support the access and utilization of related programs such as PDS or MDMS. A second area would be to lead efforts to support the adoption of optimal maternal and child care. This would include support for behaviors related to handwashing, clean water use, toilet construction and use, breastfeeding, complimentary feeding, antenatal care and supplemental nutrition for the mother and so on. It would also include supporting communities to access and utilize ICDS and AWWs and other related services. A third area of special training for CRPs would be to support SHGs or village organizations to manage the local service delivery of FNS-related schemes, especially MDMS and PDS.

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Annex 1

Case Study: SHGs Mobilized to Facilitate Entitlement Access for the Community: *MSSRF in Koraput, Odisha*

This annex describes the first of three pilot interventions that were undertaken for the study. These pilots were implemented by NGO partners of the state-level rural livelihood programs of Jharkhand and Odisha in coordination with NRLP. The pilots were designed in consultation with stakeholders such as NGOs, communities and district administrators, and drew on the analytical discussion of the preceding chapters.

This pilot intervention by MSSRF aimed to improve access to government entitlement schemes that can have a direct bearing on FNS outcomes such as ICDS, MDMS, PDS, and Kishori Shakti Yojana (KSY). It was implemented in tribal areas of Koraput district, Odisha. This intervention of supporting a dedicated resource person to mobilize the community to access food and nutrition entitlements had much appeal for us because it allows for both community mobilization activities and leveraging of existing programs. The combination appeared to be a “low hanging fruit,” and we found this to indeed be the case. The intervention proved effective in short period of time, and we can recommend the approach for NRLM to adopt. However, an important caveat is that, while demand for services is relatively easy to generate, the corresponding improvement in service delivery is not. As such, an intervention can only have limited utility in the long run.

I. Background

MSSRF was established in 1988 as a nonprofit trust with its headquarters at Chennai, India. The basic mandate of the organization is to impart a pro-nature, pro-poor, pro-women and pro-livelihood, environmentally sustainable and socially equitable pattern of development, based on the principles of social inclusion in access to technologies. MSSRF initiated its activities in remote areas of Jeypore, Koraput district, Odisha in 1994, with the help of its regional center. The Foundation, deploying science and technology-based interventions, focused on improving the health and nutrition status among women and children. Various need-based and community centric interventions were undertaken in and around 62 villages/hamlets in the tribal region of Koraput. Land conservation projects taken up by MSSRF, involving societal participation, won it recognition from the Food and Agriculture Organization, as a globally important agricultural heritage system and one of its kinds in India. A special program of MSSRF is focused on women and children under three years for improving health, nutrition and hygiene, based on sustainable agriculture.

The nutritional status of the tribal communities living in Koraput district is generally poor. The 2007 Nutrition Survey (DFW, Odisha) found about 39 percent pregnant women and 49 percent lactating women to be anemic. Some of the possible key barriers for FNS outcomes include widespread poverty, low accessibility and utilization of entitlement schemes, poor health status, and lack of appropriate hygiene practices. The scenario does not seem to have change much despite the presence of about 34 government schemes operating in the district such as ICDS, MDMS, KSY, PDS, NBA, all of which are well-positioned and designed to positively impact and have considerable potential to improve nutrition outcomes. However, as discussed in the earlier chapter, flaws in service delivery systems impede the realization of these potentials. With such a setting, the present intervention being discussed was designed and implemented as a pilot concept, targeted to improve access and utilization of existing entitlement schemes in the district by the tribal population through a course of social mobilization and awareness generation. It was expected that social mobilization

would help in empowering communities to demand and utilize services toward improving nutritional outcomes.

II. Description of the Pilot Intervention

A. Coverage and Targeting

The pilot covered seven intervention villages from Kundra block of Koraput district, chosen on the basis of the presence of ongoing field activities by MSSRF, functional centers of ICDS, and existence of active SHGs within the village. From these villages, 322 households were systematically chosen with 99 households drawn from the two comparison villages where no intervention was run, while the rest were chosen from five experimental villages which received all intervention activities. As per the design of the intervention, the targeted beneficiaries included pregnant and lactating women, children between six months to five years, elderly people, BPL households, APL households, AAY beneficiaries, school students and adolescent girls.

B. Objectives of the Intervention

The pilot intervention intended to benefit the targeted groups by:

- Increasing availability of basic information on status of the community, with special reference to access to ICDS, MDMS, PDS and KSY;
- Sensitizing Jaanch Committees, Matru Committees, SHGs and community-based organizations (CBOs) on provisions under the following entitlements: ICDS, MDMS, PDS and KSY;
- Enhancing the community's awareness on the entitlements and empowering SHGs, other CBOs and individual beneficiaries to be able to demand their entitlements; and
- Creating a cadre of people in the community that, with necessary handholding assistance extended by the implementing organization, are able to continue efforts in improving awareness and accessibility of entitlement schemes, beyond the intervention period

C. Intervention Components

The pilot intervention had two major components: a) keeping an account of all major government schemes operational in Koraput district, so detailed information on the schemes was collated with the support of district government officials; and b) to launch the pilot intervention for empowering communities through intensive social mobilization and awareness creation, to expand the gains received from the schemes (namely, PDS, ICDS, MDMD and KSY). The key features of social mobilization processes followed in the pilot intervention involved:

- **Capacity building and training:** MSSRF selected and trained a cadre of CRPs who were mandated to help the selected village communities to avail benefits from the existing government schemes. Alongside, grassroots institutions such as SHGs, Jaanch Committees, Matru Committees, school committees and other stakeholders were also imparted training on accessing benefits for FNS;
- **Entitlement cards:** The trained CRPs distributed household-level 'Entitlement' pass books to all intervention households, encompassing details on the government schemes related to food and nutrition entitlements offered by ICDS, MDMS, PDS and SABLA schemes;
- **Orientation programs:** CRPs were optimally oriented to create social mobilization, enhance the community's bargaining power and expand access of benefits offered by the schemes; and

- **Awareness generation about entitlement schemes:** Multi-pronged strategies including community meetings and regular household visits by CRPs, wall-writing, street plays, and so on, were adopted to enhance the level of awareness among the population

The strategic framework of the MSSRF pilot intervention is shown in Figure A1.1.

A PILOT PROJECT OF WORLD BANK TOWARDS ESTABLISHING A MODEL ON IMPROVED FOOD SECURITY AND NUTRITION FOR NRLM		
Goal	Improved Food Security and Nutrition Status among Tribals	
Objective	Improved access to entitlements related to Food Security schemes under Central and State Government	
Program Area	2 Gram Panchayat in Koraput District of Odisha covering 5 villages	
Components	Information collation and dissemination on schemes	Community empowerment on Entitlement
Results	Profile of schemes and entitlements documented and shared	Increased demand on entitlements by the community
Interventions	Listing of schemes - Integrated Child Development Services (ICDS), Mid-Day Meals (MDMs), Public Distribution System (PDS) and Kishori Samrudhi Yojana (KSY)	Capacity building programs on entitlement schemes on Integrated Child Development Services (ICDS), Mid-Day Meals (MDMs), Public Distribution System (PDS) and Kishori Samrudhi Yojana (KSY)
	Visits to government offices for information collation	Residential training programs for the Community Resource persons (CRPs)
	Collation of the entitlement schemes	Residential training programs for the Jaanch committee and Matru committee members.
	Wall writing on provisions of entitlement schemes at prime locations in each village	Training program for the school management committee members
	Awareness creation programs on the schemes through street play professional groups.	Training programs for Self Help Groups (SHGs) and committee members
	Distribution of entitlement passbook related to ICDS, MDM, PDS and KSY by the CRPs and the SHGs	Interface with the line departments for the change agents (CRPs/SHGs and other committees)
Risks and Assumptions:	1. Change in Government Policies 2. Reluctance from Government institutions for the provision of support due to structural issues 3. Inability to build the capacity of the communities within the project duration of 5 months 4. Non-availability of required data on various schemes from their respective Government Departments	

D. Cost of Intervention and Inputs Required

The total cost incurred towards the intervention for a six-month period amounted to INR 1.075 million, including remuneration of resource persons at MSSRF and temporary project assistance procured at the program level, and other reimbursable expenses. The latter component accounted for almost 80 percent of the total expenditure incurred under the pilot and was made towards meeting costs of local travel, communication and other direct payment requirements. The SHG members selected as CRPs were provided with some nominal financial incentives by MSSRF, which was budgeted under MSSRF project assistance costs.

III. Intervention Implementation

A. Challenges Faced

As one of the country's most backward districts, Koraput is a current recipient of funds under the Backward Regions Grant Fund Programme provided by the Ministry of Panchayati Raj, GoI. This underscores its geographical remoteness and marked gaps in basic infrastructure. The area experiences a constant threat from LWE which largely hampers law and order in the district and, consequently, development programs and interventions. Almost, paradoxically, notwithstanding its

agricultural diversity, the area often faces problems related to food insecurity. In fact, prior to the national general elections, LWE reportedly increased considerably, thereby posing serious security problems for the intervention team and hampering their activities. Nevertheless, the long-term presence of MSSRF in the district helped in managing and overcoming of many of these odds.

B. Monitoring of the Intervention

In order to maintain control on the quality, a steady monitoring of different activities including mobilization of community awareness was ensured. Towards this, monthly community-level meetings were organized by MSSRF with CRPs/SHGs to review progress in accessing entitlement schemes. CRPs, SHGs and the committees were tracked on assessment of increased access to entitlements by targeted beneficiaries.

The system's functioning on implementation of each scheme was monitored by the CRPs on a monthly basis, deploying a structured monitoring format. External resource persons with extensive knowledge about the community were engaged in the process for intermediate assessment of the progress made by the intervention activities. These resource persons made monthly visits to the field areas and ensured timeliness and quality of services.

Social mobilization and community monitoring were the two specific components carried out under pilot implementation. As mentioned earlier, members of SHGs were chosen as CRPs at the beginning of pilot to facilitate exposure to the different entitlements that existed, and later to build pressure on the Matru Committees, Jaanch Committees and School Management Committees, to make the schemes work for the benefit of the poor. Interestingly, with adequate exposure and information about the schemes, CRPs and SHG members were able to identify shortages and deficiencies linked to service provisions.

The information provided by the CRPs and assistance provided for acquiring entitlement cards was largely beneficial. Typical intervention village households were listed to ensure zero-exclusion from PDS. The barriers in submitting applications to availing ration cards were also largely overcome and many new applicants could receive ration cards by the end of intervention period, largely due to CRPs' assistance. There was a clear increase in the households that became aware of PDS (85 percent to 100 percent) and that applied for PDS ration cards (31 percent to 94 percent) during the five months period between baseline and endline evaluation. Information provided by CRPs and entitlement cards seem to have played a key role in this, apart from the efforts of the Government of Odisha. Notably, there is a clear trend towards households getting regular monthly PDS entitlements (73 percent to 90 percent).

The groups motivated households to attend and receive benefits of Mamata Dibas (VHNDs) on particular occasions. In time, the CRPs understood the basics of routine immunization, supplementary feeding, growth monitoring and other essential services that are offered under ICDS to improve childhood nutrition status. The CRPs played meaningful roles in communicating grievance redressal about inadequate services to the concerned officials, placed both at the block and district levels.

IV. Assessment of Effectiveness

At the end of six months of the pilot intervention, an end-term evaluation was conducted by the study team to assess differences in the levels of awareness and access to benefits achieved for the four specific entitlement schemes (PDS, ICDS, MDMS and SABLA). The possible opportunities for replication and scaling up of the model were examined for further advocacy on initiatives under NRLM, aimed at serving the broader goal of ensuring better productivity through improving overall

FNS outcomes among tribal communities. Of the total 322 sample households selected at the baseline, 305 were included for quantitative assessment, comprising 89 households from the comparison population and 216 households from the treatment population. Additionally, qualitative assessment of community perceptions was carried out by conducting FGDs among male, female and adolescent girl groups, in two of the five intervention villages, and one of the two comparison villages. The FGDs followed a cut of six members per group.

Based on the 'Theory of Change' envisaged by the program, a concurrent mixed method design was employed to evaluate it on the basis of its indicators. The methods included:

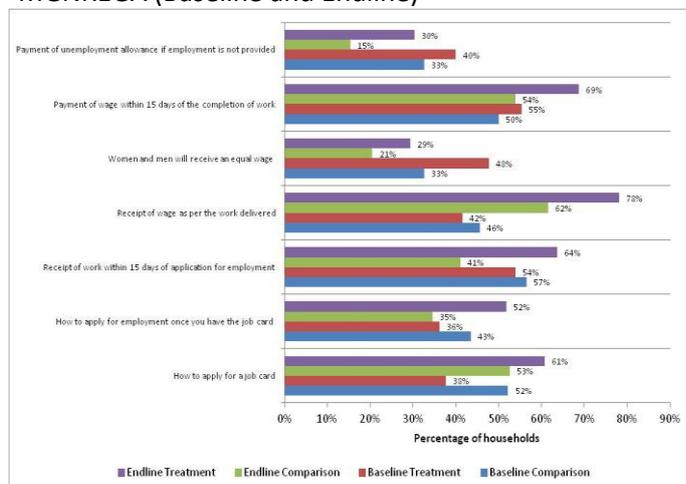
- A detailed household questionnaire for quantitative data collection;
- For qualitative data, FGDs were designed to assess the awareness levels, perceptions, and barriers in accessing entitlements;
- Village profiles were administered to collect information on availability of services and access to basic facilities in the village; and
- Key informant interviews were carried out with key people (AWWs, ASHAs, Ward and Panchayat members) from the village, to elicit views on awareness and access levels of the entitlement schemes that prevails in the village communities

A. What Worked in the Intervention Model?

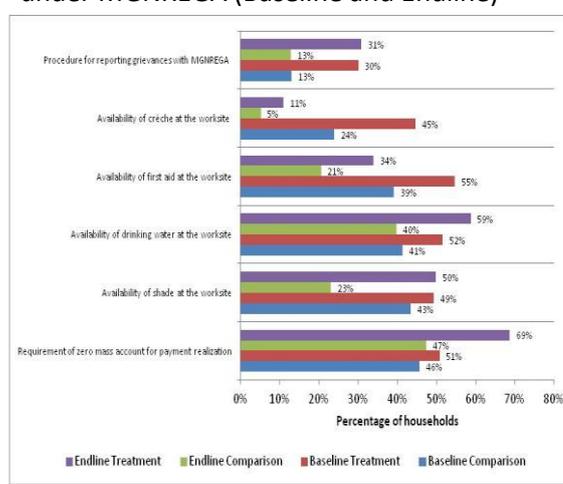
Overall, the intervention showed that concentrated efforts can lead to an increased level of awareness in the community about key development schemes. A remote tribal community, even in a short term of six months, could recognize the efforts made by the civil society partners, aided by their acceptance, and demonstrated willingness to gain knowledge about the schemes. However, an improved level of knowledge and awareness of the schemes was observed even in the comparison villages, which could be a possible spill-over effect of the intervention. As support to such assertions, some households from the comparison villages mentioned MSSRF as the primary source of information that imparted knowledge about the schemes. However, the actual impacts of the intervention on increasing the level of awareness could not be quantified through robust statistical techniques, although there was a strong indication on the role played by some intervention activities to improve awareness and access of benefits from the said schemes. Overall, the intervention strategy to work with CRPs and AWWs has been successful, with community members mentioning the positive role played by the enablers. Hence, even though the period of the intervention was limited, CRPs could bring in signs of change in awareness that, in turn, generated demand in the community for service entitlements and increased access.

Figure A1.2: Awareness about Different MGNREGA Schemes

Level of awareness about different schemes under MGNREGA (Baseline and Endline)



Level of awareness about different schemes under MGNREGA (Baseline and Endline)



It was observed that the communities already possessed a certain level of knowledge and awareness about MGNREGS, since it is the only livelihood entitlement scheme available currently, and also because it was launched fairly recently following a better sensitization process. A significant increase (74 percent to 92 percent) in the level of applications for job cards was noticed in the intervention villages. A large section of these households have also received their job cards (64 percent). A significant increase in access to various provisions under MGNREGA by households from the treatment villages could be noticed. The increase in access to the provisions of MGNREGA corresponds with an increase in awareness with respect to them. There has been a significant reduction in people feeling discriminated against while accessing the services of MGNREGA (Figure A1.3).

There has been an increase in the access to the various services under ICDS, particularly for pregnant and lactating/nursing mothers. Better access has occurred primarily in terms of better provision of services as well as higher enrollment of children. Increase in access to ICDS is found to have followed influence of an enhanced level of awareness with respect to its provisions as well as the economic status of the household. There has been an increase in the satisfaction of families with services provided under ICDS. The increase in satisfaction has a positive correlation with the increase in awareness and access of the provisions under ICDS.

A subtle intention or aim of the pilot was to create demand through greater awareness. During a mid-term monitoring of the pilot within two months of intervention in the treatment village of Kenduguda, villagers demanded a new ICDS center in the village. This was planned by the government to be constructed in the near future. The CRPs helped in increasing services at the ICDS center in Phukiaguda treatment village. On the whole, the level of awareness (75 percent) and attendance of meetings organized by MSSRF (72 percent) were quite high among the respondents. The main activities recalled by the respondents were information about different entitlements and support in access to certain entitlements. The demand from the community for work under MGNREGA was realized, in some contexts; in one of the intervention sites, villagers identified a road that needed to be built around the village. They applied to the GP and got the project sanctioned. Soon after, raw material was delivered to the site, and villagers were hopeful of getting the project

started in the near future. It was found that the CRPs and MSSRF representatives were with the team throughout the process and provided handholding support.

B. What Did not Seem to Work?

The access to entitlement services was found to have improved to a certain extent. However, facilitation of continuous access to services crucially hinges on availability of services over which an intervention of this present scale and scope had limited control. The intervention has brought out a significant improvement in cases of PDS and MGNREGA, probably backed by the survival needs of the communities. The results were better in PDS and MGNREGA compared to the progress achieved in case of ICDS or KSY which were perceived to have more intangible FNS benefits. However, access to jobs through MGNREGA, depended on two important aspects: a) possession of job cards; and b) availability of job opportunities as generated by the scheme. The intervention activities could, however, increase application and issuance of job cards, but creating jobs opportunities under MGNREGS was beyond the control of the program intervention. In the case of PDS, although level of awareness and possession of ration cards increased considerably, differential access to certain commodities was commonly witnessed. While access to key items under PDS, such as rice and kerosene, was commonplace across all villages, not a single household received sugar for the past one year. Nonavailability of certain commodities under PDS was also affected by certain external supply-related factors where the intervention had no control. There was, however, no discrimination in accessing PDS supplies across villages. Awareness of and access to services under KYS could not be improved, partly due to lack of available services in the intervention villages.

The intervention could broadly highlight a clear need for innovative approaches to reach out to certain hard-to-reach pockets where, even after the intervention, few households were found not to have gained awareness and did not show any inclination to avail the services. On the whole, the grievance redressal mechanism was still found to be largely weak requiring further strengthening through ensuring program-level accountability for protecting the community's interests. It is also required that, while scaling-up, the program and its component interventions consider innovative approaches to reach all pockets and expand opportunities that facilitate access to the schemes.

C. Effect on SHGs

The SHGs members identified as CRPs possessed the natural leadership quality. Hence, even with some exposure to entitlement rights of the community, they were geared to spread key messages while acting as change agents. Women CRPs played crucial roles in social mobilization, being naturally more concerned about families' health and nutrition outcomes. At the end of intervention program, even without formal assistance extended by the implementing agency, the SHGs were seen to continue their engagement with the communities as catalysts. These groups continued monitoring the adequacy of entitlement services available to the villagers and all discrepancies were brought to the notice of supervisors or district authorities with immediate effect. The intervention, hence, might be considered successful in raising demands for entitlement services in the community through the key strategy of community participation.

V. Recommendations for Replication in the NRLM Context

The intervention model, during its short time span, has been successful in highlighting that creating demand for entitlement services would require capacity enhancement among the communities through a cadre of representative change agents, as adopted by the intervention. Emerging findings indicate that different layers of training, consistent supervision, and assessment of mobilization capacities generated among the CRPs should be rigorous and involve dedicated

monitoring and evaluation agencies working in close connection with an intervention site. A large section (92 percent) of the household members interviewed during endline evaluation was of the opinion that change had taken place in their community during the course of program. The main change cited was better awareness of and access to entitlement schemes.

However, improving access and utilization of entitlement benefits may not always immediately reflect on better or improved levels of FNS outcomes. Only gradually, through consistent efforts embedded in a long-lasting social mobilization approach, would systemic changes be established in the ways that the schemes would yield intended success. Hence, scaling up options need grounding in the present institutional arrangements, involving Gram Sabhas, GPs, different SHGs, village committees representing peoples' demands, and not depend on any external mechanism to keep the pace.

The effects of intervention are not fool proof; they must be implemented over a long duration. However, evidence collected through this pilot may indicate important dimensions to inform initiatives engineered under NRLM; the evolution of SHGs for livelihood interventions can very well act as a platform for enhancing utilization of other public service benefits.

Overall, if the bane of 'ignorance' is targeted to be removed by enhancing community awareness and access to services through effective social mobilization by indigenous agents, the strategy may prove to be effective on multiple fronts, and can ultimately encourage paradigm shifts in tribal FNS outcomes.

A. What are Essential Pieces that must be Replicated to Ensure Success?

Empowering the community through social mobilization, either through participatory or top-down approaches, would be a first choice to achieve success under similar NRLM initiatives. Social mobilization of groups and involving them in the targeted intervention is a prerequisite for increasing the uptake of Government entitlements and schemes among the tribal and poor communities. While supervision and monitoring of intervention by experienced organizations would be crucial to ensure consistent performance and quality of intervention activities.

The set of interventions could aim to generate awareness and demand in the community for entitlement benefits, through multi-pronged strategies. Engagement of mass media and innovative art forms may prove to be successful. Training and capacity building of community representatives could be taken up as one of the key vehicles, since they in turn will spread the benefits further to the community. Similar replication of intervention may also contain important components of bank access, facilitation in developing of village plans, and developing linkages with line departments. This will help in creating entitlement access in a far better way. Robust measurement of learnings, based on the impacts of the intervention, would serve the purpose of further advocacies.

The role of women as social change agents once again is clearly established by the intervention. It was also observed that the woman of the household is more aware about the schemes pertaining to women and child care than a man. Hence, it would be crucial to involve women as CRPs in much higher numbers. However, in view of existing social dynamics based on patriarchal notions, it may be strategic to involve couples as CRPs.

Engaging with various institutions involved in implementation of NRLM at the district and block levels would be critical, without which no facilitation of entitlement benefits could be realized. At the national and state levels, steering committees needs to be built with participation of

representatives from the Ministry of Rural Development, NRLM, secretaries of various connected departments and civil society representatives.

Actual plans for the implementation of such interventions could be developed for the districts and blocks since all NRLM vehicles are set up at these levels. Existing provisions for community monitoring such as social audits through the involvement of Gram Sabhas would be vital to roll out the overall intervention and facilitation of various processes.

The intermediary role played by MSSRF as an initial facilitator was found to be crucial. Nevertheless, correct mobilization of community awareness and demands through identification and strengthening of proactive CBOs/SHGs would further serve as a vehicle for successful replication of similar models.

Annex 2

Case Study: SHGs Mobilized to Revive and Promote Traditional Agriculture: *Jagruti in Daringbari, Kandhamal District, Odisha*

This chapter describes the second of the three pilot interventions that were undertaken for the study. These pilots were implemented by NGO partners of the state-level rural livelihood programs of Jharkhand and Odisha in coordination with NRLP. They were designed in consultation with stakeholders such as NGOs, communities and district administrators, and drew on the analytical discussion of the first four chapters.

The present pilot by Jagruti, a NGO, set out to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha. The idea was to try a variation on the community or home vegetable garden model that we identified in Chapter 4 but with an attempt to leverage traditional knowledge and practices. Local production is meant to stem seasonal food insecurity and provide diversity in the diet. Minor millets are attractive because they are locally known, nutritionally dense, can grow on poorer soil, and require less water than rice. While the pilot was successful in generating awareness of minor millet production, there remain too many barriers to adoption. We find that reviving millet cultivation only makes sense if NRLM can support access to inputs such production requires as well as processing, consumption or sale of outputs. Otherwise, the community or home garden model is likely to prove more expedient. Still, Jagruti's successful work in the LWE areas of Kandhamal are nothing short of heroic and suggest that deep, long-term engagement might be the only way to effectively intervene in tribal areas.

I. Background

Jagruti is an NGO founded in 1990 that has been working with marginalized communities in in Kandhamal, Koraput and Kalahandi districts of Odisha over the last three decades. It had played an important catalyst's role in empowering disadvantaged groups of the society for sustainable and self-reliant development and demonstrated mobilization of community groups at different levels, involved people in decision making, planning and monitoring of development projects, and extensively engaged in lobbying and advocacy. At present, it works with 28,795 families from 1,025 villages of 72 GPs, covering tribal and dalit dominated Daringbari, Kotagarh, Tumudibandh and Raikia blocks of Kandhamal district and Lamataput block of Koraput district. Some activities performed under the present intervention showed considerable overlaps with the initiatives that were already put in action by Jagruti in the community.

Diminishing production and consumption of traditional varieties of paddy and millets in Kandhamal district have led to food insecurity during the lean period of the agricultural season. A related concern stems from livelihood concerns owing to uncertainty of forest based opportunities and access to non-timber forest produce due to LWE faced by the villagers, often forcing them into near starvation. Again, skewed exposure to mass media and subtle promotion of consumerism alters traditional food habits in tribal societies too, with growing preference for food rich in fat content but deficient in nutritional values. In hindsight, limited access to basic infrastructure, that is, roads, bridge, electricity, telecom, markets, continues to determine the lack of economic opportunity and enhances their vulnerability to exploitation.

As per the Orissa Human Development Report (2004), Kandhamal was found to be one of the poorest districts of the state with a Human Development Index (HDI) value of 0.389 as against an HDI value 0.579 determined overall for the state. It ranked 29th of the total 30 districts of Odisha, followed only by Malakangiri. According to the District Level Household and Facility Survey Round 3,

93.5 percent of all households in the district fell in the low standard of living category measured by the composite Standard of Living Index. The intervention GP was predominantly inhabited by the Khanda tribe which speaks a unique *Kueri* language. Mostly agrarian, the community's livelihoods center on agriculture and livestock-rearing. The Khanda households worship different forces of nature and land, and use of fertilizers and pesticides is still considered an offence against their traditional belief. Such practices, unfortunately, often restricts their returns from agriculture.

The baseline assessment suggested high levels of childhood malnutrition in the community. The data showed nearly 80 percent of the total households, that had children in the age group 6-36 months, were receiving supplementary nutrition for moderate severity, and in about one-third of the households supplements were given for fighting severe malnutrition among children below three years of age. However, recent death incidences due to starvation or malnourishment were almost nonexistent.

According to the baseline survey in the intervention communities, nearly 55 percent of the households were found engaged in agriculture as their primary occupation, with some extent of casual wage labour. Nearly 96 percent of the households possessed homestead land and about slightly over two-thirds of these also had agriculture lands, with an average size of 1.46 acres. Most of these households (65 percent) owned land in upland areas or in medium elevation. About one-third of the households practiced agriculture in forest lands. Farmers generally practiced traditional agriculture in fixed farm lands using their own seeds, farm yard manure, where no mechanized implements were used for cultivation.

In response, Jagruti suggested revival of tradition cropping and cultivation practices, especially of millets which are hardier crops that can grow with less water and on poorer soil; they are also more nutrient-dense than rice. As observed by Jagruti through its decades of involvement, the community used to grow a wide variety of crops, which included millets, pulses, and other varieties of cereals, oil seeds, vegetables and spices. There was dependence on wild tubers, mushrooms and meat, collected mostly from the forest lands. However, substantial reduction could be noted in terms of the variety of crops that are commonly grown at present; only 13 to 15 varieties are usually cultivated now against 45 common varieties grown about two decades ago. The change was broadly determined by certain crucial factors: changing climate and related uncertainties, deforestation, changing food preferences, and supports or incentives provided by the state for promotion of paddy. Such changes, had, to a large extent, compromised the nutritional security of the study community, with grave implications.

Baseline assessment of changing agricultural practices over a decade showed that there has been a significant drop in the area under millets from 215 acres to 151 acres, and under rice from 131 acres to 120 acres. One of the key factors for such substantial decline has been the restriction on cultivation in forest lands which are highly fertile, but are largely affected by LWE. Crops grown in forest lands are also exposed to destruction by animals. Other important determinants of the decline in area have been low soil fertility and unavailability of good seeds. Interestingly, the villagers' perception is that the provision of 35 kg of rice per month under PDS, which serves as sufficient ration for a family for about 15 to 20 days, offsets production losses due to declining soil fertility. Also, the commercial value of these traditional crops was perceived to be much lower than *haldi* (turmeric) and pulse seeds, which led many traditional millet growers switching to *haldi* in the recent past. A much lower proportion among SC, ST, and OBC households reportedly produced millets, compared to general households. Production of millets was common for cultivation taking place in uplands or forest lands.

Households' food preference for millet consumption in the daily diet was found low. A greater preference was, however, noticed for rice, which is consumed almost thrice a day along with certain leafy vegetables. More than two-thirds of the households were found not consuming millets even once a day and, in no cases, did any household prefer millets more than twice a day. Mostly, due to lower preference and changing food habits, traditional millet varieties such as kangu, kueri, mandia, suan, andjanha are now cultivated by only a handful of farmers, even though people considered them as healthy food options. To some extent, the changing preferences are partly a result of the unwillingness of the women to engage in the laborious activities of processing millets into ready-to-consume forms.

It was believed that getting casual labor for millet cultivation has also become a problem now, since the launch of MGNREGA has largely shrunk labor availability at lower market prices. The market value of millets largely depends on processing of the grain after harvest, which is a labor-intensive process. In general, the community showed almost no knowledge about methods of value addition to millet grains before being sold in the market. No household knew about the existence of agriculture processing units near their villages. The requirement of immediate sale of the surplus production was, however, considerable, mainly for loan repayment, and also since households lacked facilities for stocking. The only value addition practiced in the community was manual cleaning. None of the households knew about key methods of processing grains such as grading, grinding, certification, packing and labeling.

II. Description of the Pilot Intervention

A. Coverage and Targeting

A total of 257 households were selected from eight villages located in the Daringbari block of Kandhamal district as targeted beneficiaries, who received multiple exposures related to traditional farming of millet and rice varieties. As was planned, the households were expected to gain from: (a) production of minor millets which facilitates the availability of nutritious foods at home; (b) selling of surplus production in the market, which would help in generating extra income; and (c) the mechanism of procurement of surplus produce by the government, which was to be utilized as grains for PDS. The period of implementation continued over six months between September 2013 and March 2014.

B. Objective of Intervention

The broad goal of the intervention was to strengthen FNS of the poor households through the revival of cultivation of traditional millets and consumption of millets in the regular diet. The specific objective aimed to provide knowledge and awareness about millet cultivation and to support the adoption of these practices.

C. Intervention Components

The components included:

- **Capacity building and training:** Jagruti selected and trained a cadre of CRPs from active SHGs working in the village, who were mandated to sensitize village communities on approaches to traditional farming. The intervention attempted to create awareness on eight areas that were assessed as essential for best practices. These together constituted the Package of Practices (PoP) necessary for millet and rice cultivation. Specifically, these practices were on the following topics: land preparation, soil testing, seed selection, sowing and transplanting, fertilizer and manure application, pest management, weed management, and irrigation management. Identified stakeholders were then given training for essential capacity building through assessment of needs following a clear cut capacity building plan;

- **Social mobilization** was carried out to promote traditional rice and minor millet variety cultivation in the intervention villages with the help of CRPs. The members made regular visits to the households, organized village meetings with farmers at ICDS centers, schools and village level institutions. Other communication channels such as wall paintings, street plays and dissemination of key messages were utilized to generate awareness. Knowledge on traditional cultivation was also imparted by establishing linkages with farm-related programs broadcast/telecast on All India Radio, Doordarshan and featured in local newspapers;
- **Formation of a community seed bank:** To address the issues of availability of local varieties of rice and millet seeds, a Community Seed Bank was formed, with proper selection of place and structure, treatment and preservation methods, collection and storage of seeds;
- **A standard crop diversity plan** was developed especially for the lands secured under FRA, to influence community leaders to cultivate millets; and
- **Establishment of linkages with local institutions** such as Gram Sabhas ICDS, MDMS, KSY, Udyan Vikash Samiti (Farmers' Development Committee) and block-level stakeholders and officials were given priority. Block and district level dissemination meetings were held at the end of the intervention period for further information dissemination and stakeholders' knowledge sharing.

The intervention followed a **result framework**, where *inputs* for the program would come from NRLM, about 20 percent land available to people would come from FRA, and the government would provide the capital for the seed bank and knowledge inputs. The recommended *activities, that is*, social mobilization would be in place to recruit interested farmers for building capacity to support millet production, and also for marketing. Training on seed bank formation, through direct production support and direct marketing support were suggested to be carried out. It was expected that as *outputs* of the intervention, farmer groups would be motivated and supported to grow minor millets appropriate to their area. Following which, as an outcome of the intervention, the households that produced minor millets would have nutritious foods to supplement uncertain quality and availability from PDS or the field. This would also reduce seasonal uncertainty of food availability. Households that have surplus will be able to sell minor millets in the market and generate income. Alternatively, surplus could be acquired by PDS and sold at lower prices back to the community through FPSs. As the long-term goals, hence, the intervention should prove to be successful in improving the FNS status of the community.

D. Cost of Intervention and Inputs Required

The total cost incurred for the intervention over a period of five months was approximately INR 0.8 million. This included both remuneration of resource persons at Jagruti and temporary project assistance procured at the program level, and also towards the heads under reimbursable expenditure. The later component contained almost 70 percent of the total expenditure incurred under the pilot and was made towards meeting the costs of local travel, communication and expenses of other direct payment requirements. The SHG members selected as CRPs were purely volunteers and were not given any financial incentives by Jagruti.

III. Intervention Implementation

A. Challenges Faced

The broad challenges faced by the implementation team related to the geographical remoteness of the villages and the presence of left wing extremist elements. The villages are isolated in terms of both physical distance and telecommunication. The fear from LWE always posed a threat, together with risk from the police mistaking intervention team members as informers of LWE groups. The consistent challenges faced by the community and the intervention, in particular, were

also related to the lack of backward and forward linkages with the market, mainly due to its remoteness.

Overall, promoting traditional agriculture in the selected villages of Daringbari district was never an easy job. The appointed field volunteers and recruited CRPs, who were mandated to educate communities on traditional cultivation, faced a large number of practical concerns raised by the recipients in terms of its utility on crop yields, availability of good variety of seeds, fertility of land, and so on. The focus was, hence, redirected on promoting awareness about the PoP for traditional agriculture which would be essential to gain from millet and rice cultivation.

B. Monitoring of the Intervention

Monitoring of intervention activities such as home visits of CRPs, community meetings, and so on, was carried out on a regular basis. It was assessed through intermediate external expert's visits made to the intervention sites and found satisfactory in terms of successful social mobilization processes. Almost every household was found in agreement and appreciated cultivation of traditional rice and millets within two months of implementation of the intervention.

Participants were encouraged to adopt small changes in cultivation practices through hands-on training, and using locally available organic inputs such as cow dung or urine which can have four or five times higher yield than current conventional traditional practices. The training was focused on field preparation, seed treatment, and seed planting. Jagruti also organized two exposure visits for farmer club members and SHG members to the cultivation practices followed in Koraput district where MSSRF was undertaking traditional agricultural practices. Around 20 farmers participated in the exposure visits in two batches. During the exposure visit, farmers witnessed demonstrations on field preparation and production of vermi-compost by using agricultural waste and cow dung. The facilitators at MSSRF demonstrated the preparation of Beejamruta, a natural solution for effective protection against pest, diseases and fungi by using cow dung, cow urine and also explained how to use Beejamruta while preparing land for sowing.

IV. Assessment for Effectiveness

At the end of five months of the pilot intervention, an end term evaluation of the intervention was conducted by the study team to assess differences in the awareness and practice of evaluation of community's awareness about traditional millet cultivation and related aspects. It was essential to measure impacts of the intervention, if it had any, to provide useful advocacy messages for NRLM where similar projects could be designed as scaled-up options, while targeting overall FNS issues among tribal communities. Of the total of 322 sample households selected at the baseline, 300 were assessed quantitatively at the endline phase, which comprised 43 households from the comparison population and 257 households from the treatment population. Additionally qualitative assessment of community perception was carried out by conducting FGDs among male farmer group members and female SHG members, and key informant interviews carried out among village opinion leaders.

A. What Worked in the Intervention Model?

Activities carried out during the intervention were broadly accepted by the community members. Nearly 87 percent of the respondents interviewed during endline assessment of the intervention could recall having heard about Jagruti, while about two-thirds were aware about intervention activities that were performed. Of those who could recall intervention events, about 74 percent

believed that these have improved their perception about traditional agriculture. Further 30 percent recalled having seen wall paintings creating awareness on traditional agriculture and 15 percent also recalled having seen street plays promoting traditional agriculture. Nearly 90 percent reported that they felt comfortable in meeting the volunteers and CRPs. About 20 among CRPs and farmers club members participated in exposure visits to Koraput. This made an enormous impact on their intention of using similar methods in the next crop cycle. Nearly 90 percent of the respondents communicated in the affirmative about awareness of the presence of seed banks in the village. On training and other agricultural extension services, about 70 percent of the exposed respondents mentioned having attended training sessions related to agriculture or millet/rice production.

The intervention attempted to create awareness on eight areas that were assessed as essential for best practices but, as it turned out, the community was quite knowledgeable to begin with. These, together constituted the PoP necessary for millet and rice cultivation. Specifically, these practices were on the following topics: land preparation, soil testing, seed selection, sowing and transplanting, fertilizer and manure application, pest management, weed management and irrigation management.

- **Of the households that were exposed to the intervention, about 53 percent mentioned that they were already aware of or were practicing land preparation in the last season (74 percent in comparison).** However, about 7 percent first came to know about the need for land preparation once they were exposed to the intervention activities.
- **The knowledge and awareness about the variety of available seeds were considerable among the groups (92 percent), even before the intervention.** About 8 percent of the responses indicated they were not aware about varieties such as mandia, koaska, kuesaprior to the start of the program. However, with exposure gained from the intervention, farmers were found willing to seek further services and support in selecting the right kind of seeds which can give a better yield. About 4 percent of treatment households mentioned having used seeds sourced by Jagruti, while only a meager proportion sourced seeds from the seed bank.
- **Sowing and transplanting of seeds** crucial aspects of the PoP of millet and rice. While about 78 percent of the households were found engaged in direct sowing, largely through broadcasting, about 14 percent practiced transplantation and the rest followed either line sowing or drilling in a row. However, changes in the practice to ensure higher yield could not be noticed within a short span of five months of the intervention period.
- **For improving soil fertility, it was found that farmers already knew the best practice prior to the start of the program.** A majority of households were found using manures, and mostly preferred cow dung, at the time of land preparation or tilling.
- **About three-fourth of the households showed knowledge about different types of pests that were affecting their crop yields.** These included, leaf diseases, *kandabinda*, stem bore, white ant, *patrapoda*, and so on. However, only 4 percent of households exposed to the intervention could mention that they knew how to control these problems prior to the intervention. Some of the methods of pest control already practiced by the community included use of branches of Gangarinli, or Salap leaf.
- **A large gap in available irrigation facilities was noted in the villages, with only 4 percent of household-owned lands owned having access to such facilities.** More than half, however, mentioned the need for further provision, since a large majority was dependent on rainfall.
- **Nearly three-fourths of the households practiced weeding, largely manually, which was already in practice prior to the intervention.** No households mentioned that chemical methods for weeding were used.

- **Knowledge of harvesting of matured crops already existed in the communities prior to the intervention, even specific to millets.** Some typical practices included harvesting the crop when these turn yellowish brown, and keeping the stalks in the field for one or two days.
- **The households reportedly mentioned their knowledge of crop rotation, as practiced even prior to the intervention.** The rotation of crops, such as paddy and turmeric, was mostly practiced, while some households mentioned that they grew millets in turn. On the whole, households having members educated up to the 10th standard and those which practiced agriculture on medium lands showed better awareness of crop rotation.

The intervention generated demand for services in seed selection which was expressed by a large proportion (81 percent) followed by weed control and irrigation management (70 percent each) and pest management (66 percent). Nearly 43 percent of the respondents mentioned the need for soil testing services and 20 percent expressed the need for marketing-related services. About 75 percent of the villagers expressed the need for technical support services for millet and rice cultivation sometime in the future, and a majority preferred support provided by Jagruti staff and government line departments such as agriculture and horticulture.

Though only 4 percent could be seen having used seeds from available the seed bank, a majority (82 percent) perceived that having a seed bank would help improve the cultivation of millets or rice. It was also felt that it would be helpful in preserving traditional varieties.

The impact of the intervention on the overall food security situation was found to be somewhat limited from the assessment of status between baseline and endline. It was triggered by seasonal changes in the employment situation with the passing of monsoon where wages are more commonly earned. However, the food security situation as mentioned by the households showed little improvement over the past one year. It was found that, during the lean season, household dependency on rations from PDS increased. The provision of 35 kg of rice mostly proved to be sufficient for a family, for a month's duration, unless the family has many members. To cope with food insecurities, households often resort to debt and some to distress migration or earn a living from selling turmeric.

B. What Did not Seem to Work?

Awareness is only one essential input for reviving traditional agriculture, but many others beyond the scope of the intervention are also required. An example is irrigation which is more of a construction issue. Similar is the issue of post-harvest processing of agricultural produce, which is yet to be developed at a large scale. However, the intervention design took into consideration that if awareness and demand existed, many of these supporting initiatives could be undertaken with funds from NRLM or MGNREGA, and so on. These programs could be leveraged to improve the existing infrastructure for irrigation, storage and processing in the villages as a direct method for increasing crop yields and salability while simultaneously minimizing wastage. We did note though that there were gaps even in awareness. For instance, there remained a lack of understanding among the farmers on the transplanting technique even after exposure to the intervention activities.

It is not clear whether awareness will translate into adoption of traditional agrarian practices. This was not possible to ascertain over the short span of six months; we could only note that clear indications of changes in awareness on optimal farming practices could be noted. It was realized that the critical aspect of encouraging adoption of traditional varieties of millets, therefore, has to be driven through enabling access to seeds. Towards this, the seed bank created under the program, though at present utilized only by few, showed indication of possible potential of seed usage in the coming cycle. The impacts on FNS are, however, long-term goals and change in the yield can only be

assessed after three or four crop cycles. It is not possible to measure the increase in land under cultivation of traditional crops such as millets, or increase in the yield or change in consumption habits of the people. However, the efforts made by Jagruti can be assessed through increase in awareness levels about PoP with regard to the millet crops.

C. Impact on SHGs Implementing Project

The impact of SHGs involved as CRPs was found to be positive overall, as they were found to have gained significantly in confidence and know-how during the intervention process. CRPs' interactions with fellow tribals helped increase perceived reliance on traditional cultivation of millets and rice in the community and boosted overall motivation. The experience, as witnessed by CRP members from the Koraput MSSRF worksite, was shared by the farmer club and SHG members along with their family members and fellow farmers during group meetings, which triggered an enthusiasm to revive traditional cultivation practices.

It was generally felt by the community that PoP promoted by Jagruti will help them in securing better health. A statement by a community member supports this: "We believe that if we follow Jagruti's direction, we can develop our cultivation in the near future."¹⁴¹ A socially active group of women in Jihoibajiri SHG of Budanpipali village showed utmost interest in traditional farming, where they were found have set up a seed bank in their own group building, with had already procured 3.15 quintals of paddy, foxtail millet, little millet, ragi, kodos millet, pulses, and so on, to be used for the coming season. The groups showed a tremendous boost in confidence through regular interaction which was part of the intervention, increased their leadership quality for further training, and demonstrated considerable improvement in knowledge of traditional agriculture and related nutritional security. As stated by one of the group member, "It (the intervention) will not only revive traditional agriculture, it will revive our Kui culture, which is at stake. But it is the beginning, once we reach our goal, then only can we count our achievements. A day will come, when Kandhamal will look towards us for technology transfer."

V. Discussion and Considerations for Replication in the NRLM Context

In undertaking this pilot, we made two mistaken assumptions that limited effectiveness. First, we assumed that substantial key constraint in reviving interest in millet cultivation was a lack of knowledge and awareness about how to do this; this assumption was clearly incorrect. As the evidence from the endline data clearly suggests, people are generally aware of how to cultivate minor millets. The constraints were elsewhere: a lack of inputs such as land, traditional seed varieties, irrigation, mechanized post-harvest processing (since millet processing is laborious work), and marketing support. A second tenuous assumption was that additional millet production will translate into higher consumption. If we keep in mind the experience of the HKI household food production model discussed in Chapter 4, we know that this is not likely to be the case unless there is a substantial focus on education and behavior change that accompanies the main activity.

Yet, we found the Jagruti activity remarkable and worth trying to replicate for several reasons but, most importantly, because it rebuilds trust and confidence in state institutions. First, was the fact that Jagruti was able to successfully operate at all in the midst of a LWE area. Over many years, Jagruti have developed relationships with the LWE group as well as the local community which allows them the space to implement interventions like this one. They were able to mobilize and empower the community to take ownership and act on an issue critical to them. They were able to set up a seed bank to provide one critical input. For another, land, they were able to leverage MGNREGA to make land available that would otherwise not be. They were able to create demand for and linkages to other government schemes and policies. In the area where they are operating,

¹⁴¹"Amejyadi, Jagruti Group ra, kothamani kichaso karibu, tahahel leame bhavishya tare bhalo chasokari paribu."

these are remarkable achievements in six months, and we recommend the organization as a NRLM partner when the project moves into their areas.

In a sense, this activity only makes sense as a first step into broader NRLM activities rather than a standalone FNS intervention. For farmers to successfully grow millets, there must be support for the total chain of activities leading to millet production and ending in consumption or sale. We believe that NRLM could indeed do this, and the following considerations could be part of any effort to replicate Jagruti's model:

- **Linkages to other schemes to support the ecosystem of needed services.** The issues of land availability, access to traditional varieties of seeds, promotion of PoP, irrigation, and processing need to be addressed in a holistic approach for this intervention to be successful. The program has set an example of how entitlements can be linked to cultivation of millets. MNREGA's access to till and bund own land is a unique example of developing strong linkages and benefitting from the scheme. If a direct link to make PDS a buyer of minor millets could be established, the economic incentive to produce millets would necessarily be strengthened;
- **Infrastructure creation:** One of the challenges in millet cultivation is the processing. It is seen in the pilot initiative that farmers have stopped cultivating millets due to processing issues. The lack of processing units can be turned into an opportunity with the scale-up intervention supporting farmer groups to establish a **micro processing unit** with the support of NRLM funds;
- **Marketing Support.** The intervention can look at the formation of farmers' collectives or farmer producer organizations. The pilot study conducted was in a geography that had largely small and marginal farmers. Collectivization of the farmers would help them to better access the market with cumulated produce;
- **Revolving Fund:** NRLM provides scope for availing catalytic capital for micro activities, such as formation of seed banks, which can be taken up accordingly. In addition, SHGs can also look at being **Agriculture Technical Service Providers**, whereby they can provide farm mechanization and technology support to farmers on a payment basis; and
- **Core seed bank.** The pilot has demonstrated that forming a seed bank by a SHG is a novel initiative. However, the SHG itself may have limited outreach. Therefore, the scale-up intervention can engage with the SHG federations to be the **Core Seed Bank**. The member SHGs can work as **franchises**.

In the final analysis, however, it is difficult to recommend this minor millet revival model ahead of the more straightforward or, at least, a more tried and tested, model of the HKI homestead production or t community garden model that SERP is already using with the NDCCs, discussed in Chapter 4. Vegetable gardens would still require seed, land and water inputs along with a behavior change element, but the outputs are easier to process, and their perishable nature makes them more likely to be used for consumption.

Annex 3

Case Study: SHGs Promoting Hygiene through Handwashing and Clean Water Use: *CINI in Gumla, Jharkhand*

The third intervention undertaken by the study as a NRLM pilot was targeted at promotion of hygiene behavior, specifically among women and children under five, with a focus on the optimal hand washing practice, and storage of clean drinking water. The intervention was implemented by Child in Need Institute (CINI) in five villages of Chainpur block in Gumla district, Jharkhand, over a period of six months. The quality of the implementation was rather poor, however, and, as such, we primarily focused on the design elements described below rather than outcome and replication elements which were included in the other two case studies.

I. Background

CINI, an Indian NGO, has been actively engaged in research and technical assistance, capacity building and implementation of programs through action research over the past four decades, following its foundation in 1974, in Kolkata. The major focus of CINI's endeavors has been in areas of health, nutrition, education and child right protection. Maintaining a close tie with the Government of Jharkhand, CINI, since 2002, has been active in strengthening the health system in Jharkhand. One successful collaboration, so far, has been in functioning of Village Health Committee Sahiyya Resource Centers. Sahiyya, the innovation in establishing linkages through the community-based action research initiative, aiming to reduce incidence of low birth-weight as early as in 2003-4 in the pre-NRHM phase, has been notable. The concept of Sahiyya is derived from the local dialect: Sahiyya means friend.

Jharkhand, carved out of undivided Bihar, scores poorly in terms of household access to safe drinking water and toilets. Only 75.4 percent of the householders have safe drinking water access and 16.8 percent have toilet facilities (Census 2011). Poor household sanitation conditions further enhance several health risks. While, as discussed in Chapter 2, wide-scale poverty, especially among the tribal population and high dependency on agriculture (70 percent of the state's population), make the population vulnerable to begin with. It is estimated that about 40 percent of the state's population is socioeconomically deprived, and about half the population lives below the official state-specific poverty line. Hence coupled with a low rate of adult literacy (68 percent) and further lower rate among females (56 percent), SCs (37.6 percent) and STs (40.7 percent)(Census 2011), the state indeed loses the opportunity to prevent many emerging health risks, which could be possible through low-cost public health solutions and people's awareness about these choices. The low performance of these essential background characteristics reflects in poor health indicators. The median age at marriage of 15.8 years contributes to a high maternal mortality rate of 371 per 100,000 live births (SRS, 2003). The infant mortality rate hovers around 504 (NSSO, 55th Round, 2009-10) and as per NFHS-3 69/1,000 among recent birth, compared to the national average of 57/1,000 live births.

The broad focus on public health in Jharkhand is maintained through various activities undertaken by the Village Health and Sanitation Committees, Mata Samitis and Panchayat Raj institutions (PRIs) that carry out important projects on hand washing and safe drinking water. Also, the Sahiyya Resource Center addresses health and sanitation issues in the community through a series of

activities related to maintenance of drinking water sources, ensuring safe practices during antenatal and postnatal periods, facilitation of hand washing in AWCs and schools, storage and maintenance of drinking water, use of the ladle, safe disposal of waste, use of toilets, water conservation, and so on. The Village Health and Sanitation Committees and GPS are the bodies providing financial support and facilitating the work assigned to the Sahiyya and JalSahiyya.

Hygiene is an important issue related to health care practices, since the very word “hygiene” means practices that prevent spread of disease-causing organisms. The cleansing processes (for example, hand washing), of removing ill-health causing agents are a vital means to achieve hygiene, as they break the chain of infections. This is particularly important in the context of childcare that can save disease risks to young children. The morbidity-undernutrition dynamics, strongly prevailed in the first two years, could largely be impacted by good hygiene practices maintained in the households. In the long run, this possibly will have the potential to break the inter-generational cycle of childhood undernutrition in India.

Hence, the intervention tested an innovative approach of addressing tribal malnutrition, particularly among young children, by focusing on improving knowledge, attitude, and behavior of the community and caregivers on hygienic childcare practices, involving CRPs. The intervention builds on the age-old recommendation of keeping the community’s health in the community’s hands.

II. Description of the Pilot Intervention

A. Coverage and Targeting

The study covered seven villages from two GPs of Gumla district in Jharkhand, of which five received intervention, and the rest were considered for comparison without any intervention. A total of 969 households was sampled across the seven villages (five treatments and two comparisons); the number of households selected in each village was based on probability proportion to size of the village. The baseline and end-line surveys were, however, conducted across the same set of 320 households, to ensure comparability.

As per the ethnic composition, nearly 90 percent of the households were STs (88 percent in treatment and 89 percent in comparison), followed by SCs. A large majority practiced Christianity (48percent in treatment and 77 percent in comparison villages), and Sarnaism, an indigenous religion followed by the Adivasis living in central-east India (14 percent in treatment and 22 percent in comparison villages). A third of the selected household-heads from treatment villages had no education (35 percent), compared to their counterparts of 22 percent in control villages. The rest were found to have attended various education levels between four to 12 years, with a quarter from treatment villages having completed the higher secondary level (12 years) and 41 percent having attended similar levels in comparison villages. A large majority (72 percent treatment and 89 percent comparison) of these households depended on agriculture. Households’ income levels varied largely due to high dependency on agriculture and related income generation. The poverty status, measured by possession of BPL cards, showed that nearly half the treatment households (53 percent) had BPL cards, and an additional 11 percent possessed AYY card, indicating extremely poor families; households from the comparison villages were socioeconomically better off (41 percent APL category, 26 percent BPL and 13 percent AYY card holders). Slightly over half the women from the selected households (52 percent from treatment and 58 percent from comparison) had an active SHG member status.

B. Objectives of the Intervention

In response to the need of the community to maintain hygiene, CINI’s intervention plan primarily focused on sensitizing the community and stakeholders on optimal hand washing behavior, and sources and storage of clean drinking water inside and outside homes. The intervention consisted of

introducing a trained CRP to educate the target group of pregnant women, lactating mothers and adolescents on best practices. It focused on mobilizing the support for existing SHGs in monitoring behavior change at the community level (using a community report card), and at the household level through frequent visits.

The CRPs were expected to engage frontline workers in the communities (Sahhiya, AWWs, Jal Sahhiya), and the local administration to improve overall services and to support behavior change. The production and supply of requisite IEC material and training of CRPs and frontline workers were intensely carried out in the six-month period. CINI supported the monitoring efforts and facilitated interactions between the local administrators and the community.

C. Intervention Components

The intervention was designed to specifically empower the community with knowledge, and practice of the following hygiene behaviors. Key features of social mobilization processes followed under the pilot intervention involved promotion of:

- Hand washing, using cleaning agents, prior to and following specific critical events during the day; and
- Hygiene through improved practices at the source of drinking water, surroundings near the drinking water source, storage, and handling of drinking water inside the home.

The program’s strategic framework is illustrated in Table A3.1.

Table A3.1: Program framework

A PILOT PROJECT OF WORLD BANK TOWARDS ESTABLISHING A MODEL ON IMPROVED HEALTH , HYGIENE AND NUTRITION FOR NRLM		
Goal	Improved health, hygiene and Nutrition Status among Tribals	
Objective	To promote hygiene in the form of optimal hand washing behaviour, clean storage of drinking water among mothers of children under 2 and pregnant females	
Program Area	5 Villages in Chainpur Block - Gumla District	
Components	Community Awareness	Capacity building of community groups for monitoring delivery of services related to hygiene
Results	Improved awareness on hygiene and clean drinking water	Sustained use of clean drinking water, behaviour change for better hygiene practices
Interventions	Capacity building of Community Resource persons	Capacity building of SHG and other community groups
	Development and distribution of IEC materials	Community report card of village hygiene practices
	Facilitate discussions between local administrators and communities	Monitoring of schools, Aganwadi's for cleanliness and hygiene practices
		Monitoring of households for adoption of better hygiene practices
Risks and Assumptions:	1. Change in Govt Policies 2. Reluctance to provide support from Govt institution on synergised support due to structural issues 3. Capacities of the communities not being built in the project duration of 5 months 4. Non availability of required data on schemes in Govt departments	

D. Cost of Intervention and Inputs Required

The total cost incurred on the intervention over a the period of six months amounted to INR 0.9 million, including the budget needed for remuneration of resource persons working with CINI, temporary project assistance procured at the program level, and other reimbursable expenses. The latter component accounted for about 60 percent of the total expenditure incurred on the pilot, met the costs of local travel, communication and other direct expenses related to the intervention.

III. Intervention Implementation

As part of the project, CINI adopted the strategies of involving CRPs and SHGs, promoting a community group to monitor the status of water and sanitation in the treatment villages and preparing periodic report cards to be shared with the community. This was supplemented by awareness creation and IEC activities, and ensured the sustainability of the entire initiative. However, unfortunately, monitoring groups formed by CINI's intervention efforts were largely dormant. The poor performance of monitoring groups could be well identified from the fact that only four respondents could refer to the group's existence, all of them belonging to a particular village. These respondents mentioned that monitoring groups made visits to the community to inspect or ask questions on water and sanitation. The group was found visiting the community monthly once. Of the four families, two also claimed to have received benefits in terms of the hygiene situation, mostly due to the involvement of this community group. Overall, very few respondents recalled having heard of the community group or its activities. However, this could be partly due to the existing presence of many other entities such as SHGs, Jal Sahiyyas, AWWs and ANMs, all giving the same message in many ways.

Annex 4

Review of Key Policies

Apart from the programs mentioned in this report, there are some key policies/Acts introduced by Gol, that have a direct bearing on the welfare of the STs and issues of food and nutrition.

A. National Food Security Act

The National Food Security Act (NFSA), 2013¹⁴² (also Right to Food Act), was notified as a law on September 12, 2013. This law aims to provide subsidized food grains to approximately two-thirds of India's 1.2 billion people. Under the provisions of the bill, beneficiaries are to be able to purchase 5 kg of cereals per eligible person per month at very affordable prices. NFSA will be implemented by the Ministry of Consumer Affairs, Food and Subsidies and a budget of INR 10,000 crore (US\$1,584 million) is allocated for FY 2013-14. Some key features of the Act:

- **Coverage under PDS:** The combined coverage of priority and Antyodaya households (called "eligible households") shall extend up to 75 percent of the rural population and up to 50 percent of the urban population. The PDS issue prices are: INR 3/2/1 per kg for rice/wheat/millet. These may be revised after three years;
- **Children's Entitlements:** For children in the age group of six months to six years, an age-appropriate meal, free of charge, will be made available through the local Anganwadi. For children aged 6-14 years: one free mid-day meal every day (except on school holidays) will be provided in all government and government-aided schools, up to Class VIII. For children below six months, "exclusive breastfeeding shall be promoted." For children who suffer from malnutrition, meals will be provided free of charge "through the local Anganwadi;"
- **Entitlements of Pregnant and Lactating Women:** Every pregnant and lactating mother is entitled to a free meal at the local Anganwadi (during pregnancy and six months after child birth) as well as maternity benefits of INR 6,000, in instalments;
- **Identification of Eligible Households:** The Act does not specify criteria for the identification of households eligible for PDS entitlements. Gol is to determine the state-wise coverage of the PDS (proportion of the rural/urban population). Then numbers of eligible persons will be calculated from Census population figures. The identification of eligible households is left to state governments, subject to the scheme's guidelines for Antyodaya, and subject to guidelines to be "specified" by the state government for priority households. The identification of eligible households is to be completed within 365 days. The lists of eligible households are to be placed in the public domain and "displayed prominently;"
- **Food Commissions:** The Act provides for the creation of State Food Commissions. Their main function is to monitor the implementation of the Act, give advice to the states governments and their agencies, and inquire into violations of entitlements;
- **Transparency and Grievance Redressal:** The Act provides for a two-tier grievance redressal structure, involving the District Grievance Redressal Officer and State Food Commission. State governments must also put in place an internal grievance redressal mechanism which may include call centers, helplines, and so on; and
- **PDS Reforms:** The Act states that central and state governments "shall endeavor to progressively undertake" various PDS reforms, including: doorstep delivery of food grains; end-to-end computerization; leveraging Aadhaar cards for unique identification of entitled beneficiaries; full transparency of records; preference to public institutions or bodies in

¹⁴²See The National Food Security Act, 2013. Available at: http://www.righttofoodindia.org/data/right_to_food_act_data/official_documents/NFSA_2013_Full_Text.pdf

licensing of FPSs; management of FPSs by women or their collectives; diversification of commodities distributed under the PDS; full transparency of records; and “introducing schemes such as cash transfer, food coupons or other schemes to the targeted beneficiaries in order to ensure their food grain entitlements” as prescribed by Gol.

B. The Provisions of the Panchayats (Extension to the Scheduled Areas) Act (PESA, 1996)

Provisions of the Panchayats (Extension to the Scheduled Areas) Act or PESA, 1996, provides for extension of the provisions of Part IX of the Constitution relating to GPs in Scheduled Areas defined under the act correspondent to the Article 244 of the Constitution. Important issues of tribal land, culture, tradition, and customs, are brought under the legal purview to prevent tribal alienation. Greater roles for Gram Sabhas and GPs in terms of safeguarding and preserving traditional customs, community resources and customary mode of dispute resolution were envisioned. More responsibilities were devolved to the Gram Sabhas in Scheduled Areas, in relation to approval and overseeing of development projects, including TSPs and identification of BPL households that would serve as the beneficiaries. To protect tribal political rights in representation at local governments, the Act specified all seats of Chairpersons of GPs at all levels to be kept reserved for STs. Preservation of natural resources, that is, minor minerals, water bodies, forest produce, all that helps in earning a livelihood for tribal communities, were strictly given rights for control to the relevant GP or Gram Sabha.

In Odisha, the Orissa Gram Panchayat Act, 1964, Orissa Panchayat Samiti Act, 1959 and Orissa Zila Parishad Act, 1991, adopted the provisions of the PESA Act, as it came into force in December 1996. Several of the critical development initiatives that protect tribal rights could be observed across different sectors, while a number of relevant departments have devolved some powers to PRIs and PRIs have suitably brought amendments to the existing rules (for details see Dash, S.K., 2011¹⁴³). However, the state is faced with multiple challenges too, that is, implementation of PESA often seems a routine matter, without its true spirit of application, which often does not devolve powers to GPS, or drive actions that provide life-choices for tribals to live with dignity. Another important challenge is that the state government is implementing PESA only till the revenue boundaries of villages, while, often, tribal communities live in forest areas which are away from the village boundary. In fact, PESA, in its true spirit, is yet to be implemented in almost all states, including Odisha and Jharkhand.

C. Tribal Sub-Plan

TSA’s strategy was developed by an Expert Committee set up by the Ministry of Education and Social Welfare in 1972 for the rapid socioeconomic development of tribal people and for reduction of poverty among the tribal population of the states. The strategy was first adopted in the Fifth Five Year Plan (1974-78), which was mandated to focus on the unique challenges faced by remote tribal communities, Primitive Tribal Groups, bonded laborers, shifting cultivators, forest villagers, and displaced persons, in order to evolve an appropriate frame for development.

The main objectives of TSP are: (i) socioeconomic development of STs; and (ii) protection of tribals against exploitation (Planning Commission 2012). The development of the tribal economy under TSP is envisaged through sectoral efforts including: (i) agriculture and allied activities, through provision of minor and medium irrigation facilities supplemented by programs for animal husbandry, dairy, poultry, and so on; (ii) improvised credit and marketing facilities so as to ensure adequate return of the produce of tribals in respect of agriculture and minor forest products; (iii) special training

¹⁴³Dash, S.K. 2011. PESA Conformity and Operational Issues: A Case Study of Orissa, *Orissa Review*, February-March, 2011.

programs for tribal farmers for agricultural extension supported by the provision of agricultural infrastructure; (iv) preparing suitable forestry programs promoting tribals' participation as equal partners; and (v) promoting agricultural production through improved methods of cultivation, and rural electrification to promote small-scale industry.

Special Central Assistance to TSP: The Ministry of Tribal Affairs extends special central assistance to the TSP states and union territories and also to the North-eastern states of Assam, Manipur and Tripura as an additional grant. These grants are meant for family oriented income generating scheme in various TSP areas to meet the gaps that have not otherwise been taken care of by the State Plan. Special central assistance is released for the economic development of the following:-

- Integrated Tribal Development Project area: a contiguous large area in which the ST population is 50 percent or more of the total population;
- Modified Area Development Approach pockets: identification of pockets containing 50 percent or more of ST population of a total population of 10,000 and above; and
- Clusters: identified pockets containing 50 percent or more ST population of a total population of 5,000.

However, a review of the implementation of TSP after about 30 years raises disappointments, since such a promising strategy that had huge potential to tackle poverty conditions through provision of assistance to the tribal communities to develop according to their needs, also had met the fate of lost opportunities (ISS 2003).¹⁴⁴ The early response to TSP in Odisha was realized with the adoption of central sector scheme in two districts (Gunupur and Baliguda) with the primary objective of combating agrarian unrest and LWE in certain tribal areas. Several tribal development agencies were created for strengthening institutional focus. For the implementation of different strategies under TSP, Jharkhand and Odisha, in FY 2013-14, received INR12,187 lakh and INR 13321 lakh, respectively, as allocated through Special Central Assistance. This is expected to be utilized for the purposes of economic development mentioned above.

D. Forest Rights Act

To correct the 'historic injustice done to forest-dwelling communities,' the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, popularly known as the FRA, was enacted in 2007 by the Ministry of Tribal Affairs (Planning Commission, 2012). These communities were cultivating/occupying forest land and using forest produce for years but had no security of tenure, as their rights of occupation and usage were not recorded during the settlement process. The Act recognizes and vests individual forest-dwellers with forest rights to live in and cultivate forest land that was occupied before December 13, 2005, and grants community forest rights to manage, protect and generate the forest and to own and dispose minor forest products from forests where they had traditional access.

Implementation is slow and has mostly ignored community forest rights resulting in limited impact. The process of implementation of FRA begins right from the Gram Sabha level, where Forest Rights Committees (FRCs) are constituted and authorized to assist the Gram Sabha collate, verify and approve claims to rights as required. As per the Act, the Gram Sabhas in the Scheduled Areas must be convened at the hamlet level while, in the traditional villages, it has to be convened at the village level. In 11 states, the implementation of Individual Forest Rights (IFRs) has not yet started. This includes the north-eastern states (except Tripura), Bihar, Uttarakhand, Himachal Pradesh and Goa. In Tamil Nadu, because of restrictive orders by the High Court on a petition filed, the progress has been

¹⁴⁴Institute for Social Sciences. 2003. Impact of the Tribal Sub-Plan Implementation in Improving the Socio- Economic Condition of the Tribal People with Special Focus on Reduction of Poverty Level covering the States of Assam and Tamil Nadu. Submitted to the Planning Commission, New Delhi, 2003.

slow. Some states (such as Jharkhand) have lagged behind in terms of both getting a plausible number of claims and in processing the received claims. The findings of a government committee set up to study the implementation of FRA reveal that most states have concentrated almost entirely on implementing the provisions for IFRs and the implementation of the Community Forest Rights (CFRs) has been poor due to lack of awareness on CFRs among the communities as well as civil society organizations (Planning Commission, 2012).

FRA in Jharkhand and Odisha

Although the law was enacted in 2006, its implementation was virtually nonexistent in Jharkhand for more than two years due to the absence of elected PRIs. Even when the long-awaited PRIs came into place, the prerequisite for extending forest rights titles has made little difference in the tribal state. For instance, out of 42,000 claims, only 15,296 titles had been distributed until October 2012 to forest dwellers under FRA.¹⁴⁵ According to official records, titles for 37,698-acre forestland have so far been distributed in Jharkhand, while the state is yet to form FRCs in all the districts, sub-divisions and villages. FRA asks for elected members in district and sub-divisional committees, empowering only elected PRIs to call Gram Sabha meetings. Finally, in July 2008, the government clarified that since, it was not possible to hold panchayat elections immediately, as the matter was pending before the apex court, vacancies in the FRCs in Scheduled Areas could be filled up in consultation with traditional Gram Sabhas. In November 2008, FRCs were formed in East Singhbhum, West Singhbhum and Latehar districts (MoTA, 2013).

In Odisha, the process of implementing FRA began in 2008 with four departments – tribal welfare, revenue, forest and panchayati raj – working in coordination. Given the low literacy among people in the tribal areas and their limited access to different channels of information, many potential beneficiaries have not been able to apply for benefits under the different provisions of the Act. The implementation of FRA has been operationalized mostly by bureaucrats at the state level without much input from the political process. Till now, only the individual claims of STs and a few community claims to forestland, including in the Critical Wild Life Habitats, have been settled. There is no evidence of the implementation of other FRA provisions (Sarap et al., 2013).

In Odisha, more than four-fifths of the 2.1 million tribal households, live in villages on the fringes of forests, a majority of them in the Scheduled Area, cultivating forestland. That only 3,00,000 tribal households have so far got land rights under FRA appears to be a very low figure. Many Other Traditional Forest Dwellers claimants have either not applied under FRA or the claims of those who have applied have not been processed, presumably because they could not prove residency in the area for three generations (Sarap et al., 2013). The number of community claims and titles issued so far have also been meagre, given that there are 29,302 forest fringe villages in the state (about 60 percent of the total villages) and the number of villages in forests is around 12,000 (Kothari 2011). This has been so because there is ambiguity in the interpretation of FRA's provisions on the various type of CFRs, the procedure for claiming them, and how the claims should be mapped and processed, alongside undue emphasis on IFRs. Further, lack of awareness campaigns, an inadequate supply of the appropriate forms, and opportunistic behavior by some individual households not interested in such claims have been responsible for this situation (Kothari 2011, Mahapatra, et al., 2010).

Key Challenges in Implementation

Rejection of claims: Among the many concerns plaguing FRA, rejection of the claims for various reasons, mostly on flimsy grounds, has hampered the recognition of claimants' rights in a big way

¹⁴⁵See "State lags in forest dues." Available at:

http://www.telegraphindia.com/1121219/jsp/jharkhand/story_16335234.jsp#.UnyBg_lgdfB

(Bandi, 2013). More than 3.13 million claims have been filed till June 30, 2011, of which 2.68 million (86 percent) have been disposed of. A total of 1.19 million titles (34 percent of those disposed of) have been distributed and the rest have been rejected (Planning Commission, 2012). In most cases, the claimants are not given an opportunity to even appeal (Saxena, 2010).

Overlap with other laws: Although FRA is an Act in itself, there is scope for other already existing laws to prevail upon the Act. This happens especially with the overlapping laws on conservation and sustainability of wildlife and forests. The laws most often overlap with the objectives of FRA when the national and state governments use their authority to issue lands for development projects, overlooking the possible claims on such lands (Kothari 2011). Such overriding authority gains strength because FRA remains subject to the state's domain in the acquisition of lands in the name of development projects (Bose 2010).

Lack of awareness: Lack of awareness among the main stakeholders of FRA in the wildlife protection areas, specifically among the Particularly Vulnerable Tribal Groups and pastoralists, is a major factor in poor implementation (Kothari, 2011). Moreover, in the case of Other Traditional Forest Dwellers, having to prove their residency for three generations, or their use of the forest for 75 years, appears to discourage them from claiming their rights through this stringent criterion. Raising apprehensions about gender equity, Reddy et al. (2011) point to the inheritance clause in FRA because, in the absence of a direct heir, the Act passes the right to the next of kin, but is not clear about the successor, especially if it is a female child.

Resistance from foresters: As per the Act, the forest departments have only a negligible role in the implementation process of FRA. Their representatives are required merely to be present with the FRCs during the verification stage. Even this presence is not mandatory, according to the rules, and will not impact the decision of the FRC (GoI, 2010). However, in total disregard of FRA, forest departments are seen to be functioning as a “veto” in denying rights to the people, and by rejecting their claims at the screening stage itself (Write Petition, 2011). Although FRA appears to be people-oriented, the final shots are called by committees of bureaucrats, elected representatives, and the forest department, which incidentally was never in favor of this Act (Bandi, 2013).

E. Land Acquisition Act

LAA (amended in 1984) makes it possible for state or central government to acquire land for development of infrastructure and economic growth initiatives. It provides for payment of only cash compensation and only those who have a direct interest in the title to such land are eligible for cash compensation (Vaswani 1988). The compulsory acquisition of land for public purposes and for public sector or private sector companies has had a tremendous impact on the tribal populations, leading to their displacement and alienation from their land (Ambagudia, 2010). The discussion on tribal displacement (under Section 2.6.3) clearly points out that in the process of development and as a result of limited access to market linkages, tribal communities continue to lose control on land.

Land Acquisition in Jharkhand and Odisha

In Jharkhand and Odisha, tribals are the worst sufferers over the land question due to the mineral resources of substantial value that lie beneath the land. Development projects, particularly related to dams and mining, have led to widespread displacement of tribal. For instance, as per the statistical figures of the Planning Commission, more than 40 percent of the families displaced due to developmental projects in Odisha are tribals and they lost control over their source of livelihoods (Mohanty, 2005). Similarly, in Jharkhand, one of the major causes of land alienation and displacement in the area is the mining industry, particularly coal. Jharkhand, accounts for 9 percent of India's forests; it also holds 29 percent of India's coal and 14 percent of its iron ore reserves. The percentage of area under forest cover in all the mining districts, barring Dhanbad and Bokaro, is more than 20 percent. In the past, vast tracts of coal bearing areas of Damodar Valley had been

acquired by private firms, often by fraud, and turned into wastelands through unregulated mining (Areeparampil, 1996). According to the Ministry of Environment and Forests, in 1985-2004, more than 9,000 hectare of forest land had been diverted for mining in the state. This is approximately 10 percent of the total forest land diverted for mining in India. It is estimated that 55 percent of the people displaced due to mining in the state are tribals (Centre for Science and Environment, 2008¹⁴⁶).

¹⁴⁶See CSE' s6th State of India's Environment Report, Rich Lands, Poor People -- Is Sustainable Mining Possible?

Annex 6

Goal Templates

NEPAL: Sunaula Hazar Din – Community Action for Nutrition Project

Girls and young women aged 15 to 25 (Priorities: Anemia, delayed pregnancy, school attendance)
 These RRIs would be implemented primarily by youth aged 15 to 25. Senior leaders would mostly likely be members of an SMC, Citizen Ward Forum or FSNC. Alternatively, the team could be formed from an existing youth-focused group. However, at the group’s discretion, for some goals there could be overlap into other sub-populations (for example, the goal focused on FP could focus on all women who want to delay a first or next pregnancy and not just youths).

Goal Template	Indicative Project-funded Inputs
At least ___ families with adolescent girls make a public pledge to delay marriage and first pregnancy of daughter(s) until at least 20 years of age, in the next ___ days	Training for health facilities to provide youth-friendly services, peer program costs
At least ___ girls who do not want to become pregnant are regularly attending school, in the next ___ days	Scholarships, books, school supplies
At least ___ girls receive de-worming and weekly iron-folic acid supplementation, for the next ___ weeks	
At least ___ girls/women who do not want to become pregnant are using a family planning method, in the next ___ days	Training for health facilities to provide youth-friendly services

Pregnant women or women who want to become pregnant in the next 6 months. (Priorities: Protein, iron, smoking, breastfeeding) These RRIs would mostly like be implemented by mother’s/women’s groups, or an existing health-focused group. Senior leaders would be from Ward Citizen Forum or FSNSC

Goal Template	Indicative Project-funded Inputs
At least ___ women who want to become pregnant/are pregnant take the appropriate amount of supplements of iron and folic acid, and (when pregnant) calcium in the next ___ days.	Calcium tablets (??)
At least ___ women who want to become pregnant/are pregnant complete a treatment of de-worming in the next ___ days	Peer program costs
At least ___ (families with) women who want to become pregnant/are pregnant make a public declaration not to smoke inside the house, in the next ___ days	

At least ___ women who want to become pregnant make a public declaration to stop smoking before pregnancy, in the next ___ days	
At least ___ families with women who are pregnant make a public pledge to lessen their workload so they can breastfeed appropriately	
At least ___ families with underweight girls who are pregnant or	Funds for goat/chicken

Children 0-6 months and breast feeding mothers (Priorities: Breastfeeding, hygiene, immunization, BMI). These RRIs would mostly like be implemented by mother's/women's groups, or an existing health-focused group. Senior leadership could come from Ward Citizen Forum or FSNSC.

Goal Template	Indicative Project-funded Inputs
At least ___ children under the age of 1 year receive immunizations to be in compliance with the recommended schedule, in the next ___ days	
At least ___ families with make public pledge for exclusive breast feeding of children until the age of 6 months, in the next ___ days	
At least ___ households with children 0-24 mo pass hand washing checklist, in the next ___ days	
At least ___ lactating women eat three times a day, including, at least one animal-sourced food per day for the next ___ days.	
At least ___ households with children 0-24 that have an improved cooking stove, in the next ___ days	
At least ___ women with children 0-24 months make a public pledge to keep the inside of their house smoke-free , in the next ___ days	Construction materials for improved stoves, TA for improved stove construction
At least ___ children with signs of chest infection, diarrhea and/or a fever receive proper treatment within 1 day of on-set of symptoms, in the next ___ days	

Children 6-24 Months (Priorities: Comp feeding. Iron/MNPs, protein, diarrhea/ORS)
 These RRIs would mostly like be implemented by Mother's/Women's groups, or an existing health-focused group. Senior leadership could come from Ward Citizen Forum.

Goal Template	Indicative Project-funded Inputs
At least ___ underweight children gain an appropriate amount of weight, in the next ___ days	
At least ___ children age 6-24 months eat at least one egg/piece of meat/fish or a glass of dairy each day for the next ___ days	Funds for goat/chicken rearing supplies

At least ___ households with children 6-24 months pass a IYCF checklist, in the next ___ days	
At least ___ households with children 6-24 months eat a meal with MNPs once a day, each day for the next ___ days	
At least ___ children with diarrhea immediately receive proper treatment (ORS, zinc and increased feeding), in the next ___ days	
At least ___ households with children 0-24 months old pass hand washing check-list, in the next ___ days	

Community wide (Priorities: Protein, safe water, hygiene). Teams could come from a variety of different community-based groups, selected at large by the Ward Committee. Senior leaders could come from Ward Citizen Forum or FSNCS.

Goal Template	Indicative Project-funded Inputs
___% of households make public commitment against open defecation, in the next ___ days	Open defecation free technical support, funds for limited latrine construction
Community declared open defecation free within ___ days	
Ensure ___ sources of water in the community pass "clean water check list" at the point of consumption, in the next ___ days	Funds for small construction (spring boxes, pumps, etc.)
At least ___ households with children or women of child bearing age have access to a source of eggs, meat/fish or dairy, in the next ___ days	Funds for goat/chicken rearing supplies
School has appropriate number of latrines in ___ days	Funds for latrine construction

Annex 10

Integrating Food Security and Nutrition Interventions with National Rural Livelihood Mission in Odisha and Jharkhand

GUIDANCE NOTE¹⁴⁷

1. This Guidance Note has been prepared as part of the World Bank study on *Food and Nutrition Security in Tribal Areas* that focused on identifying, examining and recommending community-based approaches for improving food and nutrition security (FNS) services and outcomes in tribal and backward areas, especially in the context of the National Rural Livelihoods Mission (NRLM)/National Rural Livelihoods Project (NRLP¹⁴⁸) program in Odisha and Jharkhand. The study included collecting and examining primary and secondary data, supporting action research pilots implemented by nongovernmental organization (NGO) partners, and conducting evaluation of the pilots in Odisha and Jharkhand. The pilots were implemented in Koraput (M.S. Swaminathan Research Foundation (MSSRF)), Kandhamal (Jagruti) and Gumla (Child in Need Institute (CINI)). These pilots were evaluated for their immediate outcomes through a household survey, focus group discussions, village profiles and key informant interviews with Anganwadi Workers (AWWs), Accredited Social Health Activists (ASHAs) and Panchayati Raj Institution (PRI) representatives. Based on findings and lessons from the study, the pilots and interaction with State Rural Livelihoods Missions (SRLMs), this note summarizes the various entry points that could be used to integrate FNS interventions under NRLM implementation in Odisha and Jharkhand, and even in other states.

A. STATE RURAL LIVELIHOODS MISSIONS

2. **Odisha Livelihoods Mission (OLM).** Odisha was the first state to adopt the SRLM model as OLM in 2011. Under NRLM, OLM has been scaling up social, financial and livelihood interventions under the ongoing World Bank-supported project, *Targeted Initiatives for Poverty Termination and Infrastructure* (TRIPTI), as well as self-help groups (SHGs) promoted under the earlier Mission Shakti Programme of the Women and Child Development (WCD) department. The OLM action plan mentions food security and risk mitigation as an area where it will promote convergence with other government missions and programs. The action plan lists the various government programs on food and nutrition, including Targeted Public Distribution Programme (TPDS), Antyodaya Anna Yojana, (AAY), Mid-day Meal Scheme (MDMS)/Emergency Feeding Programme (EFP) and Supplementary Nutrition Programme (SNP). Ensuring household food security for the extremely poor and vulnerable groups is considered as a core priority. Recently, OLM has started implementing a “backyard vegetable kitchen garden” program (“Mo Badi”) that aims to provide continuous nutrition support to pregnant and lactating mothers, adolescent girls and children from poor households in

¹⁴⁷ The note builds on lessons from pilots in Odisha and Jharkhand and consultations with Odisha Livelihood Mission and the Jharkhand State Livelihood Promotion Society (JSLPS). The note summarizes and provides generic guidance which would need to be adapted for specific contexts.

¹⁴⁸ National Rural Livelihood Project is the intensive phase of NRLM that is supported by the World Bank.

rural Odisha. The program aims to cover 50,000 households in 2014-15. OLM has been holding consultations with relevant stakeholders, including the study team, to roll out the program.

3. **Jharkhand State Livelihoods Promotion Society (JSLPS).** JSLPS, under the Jharkhand Rural Development Department, is implementing NRLM in Jharkhand, using different strategies for social inclusion and mobilization of poor and vulnerable households in the SHG fold. These community institutions provide savings, credit and other financial services to its rural poor members to meet requirements for consumption, loan repayment, food and health security and livelihoods. The NRLM intensive blocks are being targeted to ensure food security and overall vulnerability reduction through various livelihood initiatives. Under a special project, *Sanjivani*, implemented by UNICEF in East Singhbhum district, Community Resource Persons (CRPs) are involved in identification of infants to ensure 100 percent immunization. A special component of community investment support (CIS) relates to food security and health security funds. In 2012-13, JSLPS targeted 500 SHGs, to facilitate their microcredit and food security plans and access to CIS. JSLPS has also initiated participatory needs assessment for household food security. It is also working on a proposal on promoting millet-based food items for the tribal-dominated and conflict-affected areas of the state. JSLPS has an ambitious program of integrating water and sanitation and nutrition into the core NRLM interventions. With support from UNICEF, JSLPS has established a water and sanitation cell to implement water, sanitation and hygiene (WASH) interventions in the intensive blocks of Ranchi, West Singhbhum and Pakur. The JSLPS is also developing convergence with other state missions and programs on wage employment, food security, and risk mitigation. JSLPS is considering the adoption of the pilot in Gumla on WASH and its dissemination to other government line departments.

B. FOOD AND NUTRITION SECURITY STRATEGY

4. Supporting improved access to FNS services and reducing food- and health-related vulnerability is one of the core objectives of NRLM. With focus on community mobilization, institution building, livelihood development, and especially vulnerability reduction of the rural poor, the NRLM institutional and intervention framework is well placed to improve FNS outcomes among the rural poor, especially those in tribal and conflict-affected areas. NRLM also supports community and household level convergence of social protection schemes such as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Public Distribution System (PDS), Integrated Child Development Scheme (ICDS), MDMS, social insurance and pensions. It envisages that the empowered village organizations (VOs)/federations would bridge service delivery gaps, increase awareness and utilization of programs, or advocate for improved coverage and service quality. NRLM is also initiating comprehensive food security pilots in tribal blocks of Chhattisgarh, Jharkhand, Maharashtra, Madhya Pradesh and Rajasthan. The Bank study documents a number of community-managed FNS interventions that could be supported and scaled up under NRLM. These are summarized under four categories: maternal and newborn care services; managing food shocks; monitoring and entitlement advocacy; and community management of food, nutrition and WASH services (Table 1).

Table 1: Selection of Community-managed FNS Interventions

I. Maternal and Newborn Care Services	II. Manage Food Shocks	III. Monitoring and Entitlement Advocacy	IV. Devolution of Food, Nutrition & WASH Service Delivery
<ul style="list-style-type: none"> • Ekjut: Core Program • Deepak Foundation: Safe Motherhood and Child Project • SEARCH: ANKUR • Mahatma Gandhi Institute of Medical Sciences: Initiative for Child Survival • SEARCH: Home-based Newborn Care • Johns Hopkins: Shaksham • Krishi Gram Vikas: Low Birth weight Project • CINI – Mother and Child Health • CARE: RACHNA • SEWA: Family Centered Safe Motherhood and Newborn Care Project • UNICEF: Behavior Change for Nutrition 	<ul style="list-style-type: none"> • HKI: Homestead Kitchen Gardens • Jagruti: Revival of Minor Millet Cultivation • Government of Andhra Pradesh: Rice Credit Line • Government of Madhya Pradesh: Sanjha Chulha - Supplementary Feeding Program • MYRADA: Community Corn Storage • Agrabamee: Grain Banks 	<ul style="list-style-type: none"> • MSSRF: Community Hunger Fighters • Government of Chattisgarh: Mitandin (ICDS) • SAHAJ: Community Action for Maternal Health • SAHAYOG: Mahila Swasthya Adhikar Manch • CINI: Community Based Malnutrition Tracking • Sakhi Arogya Samudaya Trust: Swayam Shikshan Prayog 	<ul style="list-style-type: none"> • Government of Andhra Pradesh: Nutrition Day Care Centers • Government of Odisha: PDS Operation by SHG • Government of Gujarat: Decentralization to SHGs for Supplementary Nutrition Provision • Government of Nagaland: Communitization Initiative for Health Services • Government of Uttar Pradesh: Swajal Project for Community Water Management • Government of Gujarat/Aga Khan Foundation: Gujarat Health Systems Development Project

5. **Articulating FNS in tribal areas as a core development strategy.** Given that Odisha and Jharkhand have a significant tribal population and pockets of high food insecurity and malnourishment, the SRLMs could develop and articulate a FNS strategy and program targeting the tribal -dominated and conflict-affected blocks in the states. Both OLM and JSLPS are well placed to leverage their existing ongoing FNS-related interventions, in this regard. The SRLM strategy could include the following dimensions:

- a. Food security: FNS overview in intensive blocks, community perceived last mile gaps in FNS services, core household food security model for the state; models of food procurement through community institutions, other community-managed/based FNS initiatives eligible for SRLM support; specific modalities of food risk funds;
- b. Health security: Strategy for reduction of health expenditure among the rural poor, existing government models for convergence with NRLM, specific need-based health financing mechanism, role of VOs/federations in health security;
- c. Access to services/entitlements: Models for accessing key entitlements such as MGNREGA, pensions, and so on; role of VOs/federations and relationships with line departments; promotion of a CRP cadre in ensuring access to FNS entitlements for the poor; and
- d. State level partnerships with resource agencies and NGOs, including those covered in the study.

6. **CRPs promoting Maternal and Child Nutrition (Ekjut MCH Program).** The Ekjut program on mother and child health (MCH) has been working in Jharkhand and Odisha to improve health and nutrition outcomes of tribal communities since 2004. It has a three-pronged approach: monitoring,

empowerment, and advocacy. Women facilitators are selected from local communities and trained as CRPs to address issues of pregnancy, childbirth and newborn health. Through a series of interactions at monthly meetings, the facilitator takes the women's groups through a 10-meeting, 'Participatory Learning and Action Cycle'. The CRP encourages the women to discuss their maternal and newborn problems, using visual aids such as picture cards. At completion of the 10 meetings, the women are able to prioritize their problems and find appropriate strategies and solutions for themselves. Upon completion of the learning cycle, a community meeting is held to inform the larger community, through street plays, puppetry and storytelling, about how the women achieved the solution and seek necessary support from the wider community. A rigorous, randomized, impact assessment has found that the health and nutritional status of children and women has materially improved due to this intervention. For instance, neonatal mortality reduced by 70 percent among the 'participant households' compared to a 28 percent reduction among the 'nonparticipant' households in control areas.

7. **Managing Food Shocks.** Grain banks have been used across India for long to manage seasonal food insecurity. In Andhra Pradesh (AP), the Society for Elimination of Rural Poverty (SERP) has been supporting 50,000 grain banks across 22 districts. Grain banks, typically managed by SHGs/VOs, allow for smoothening of food consumption over the agricultural season. Members contribute surplus grains such as rice after harvest and withdraw in lean times, usually with an obligation to repay. Effectively, a grain bank serves as an alternate source of credit and is thought to reduce the dependence on moneylenders. The Rice Credit Line, covering half a million families, is an innovation on the grain banks concept tied with the PDS system in AP. A family is able to borrow to meet the gap between its monthly consumption of rice and what the PDS allots. This engages the SHGs to proactively ensure that their members receive the PDS rice allotment promptly. The borrower repays in weekly instalments. Despite gaps in empirical evidence of impacts, it is well recognized that grain banks reduce dependence on moneylenders and enhance food security for tribal communities. NGOs throughout the country, such as Agramee in Odisha, have also supported grain banks.

8. Homestead Vegetable Garden. Helen Keller International (HKI), along with Save the Children and a forum of NGOs, implemented a homestead food production intervention targeting 5,600 household with pregnant and lactating mothers in Bangladesh¹⁴⁹ between August 2008 and September 2009. The program is aimed at reducing the prevalence of night blindness among rural children, caused by a deficiency of vitamin A, and suffered by 3 percent of children living in rural Bangladesh. The situation is not dissimilar to eastern India. In Jharkhand, for instance, less than 20 percent of tribal children under five received any form of vitamin A supplementation, according the National Family Health Survey (NFHS)-3. The program involved: i) mobilizing and supporting households to grow vegetables adjacent to their homes and consume them; ii) community meetings on the need for regular consumption of foods rich in iron, zinc, and vitamin A; and iii) demonstrations on washing vegetables and fortifying their nutrition value with meat or eggs. Initial analysis suggests that homestead food production has yielded positive results with regard to food availability, consumption, and utilization -- the three aspects of food security.

9. Traditional rice and millet varieties (Jagruti, Odisha). Jagruti, an NGO based in Odisha, piloted an activity to support the revival of cultivation of traditional rice and millet varieties in Daringbari, Kandhamal district, Odisha, as part of the study. The aim was to leverage and integrate traditional knowledge and practices with the home vegetable garden model. Local production is meant to stem seasonal food insecurity and provide dietary diversity. Minor millets have several advantages as they are locally known and grown, nutritionally dense, and can grow on poorer soil

¹⁴⁹ The study focused on the Bangladesh example for its proximity to India, but this intervention has now been tried in several countries of South Asia, Southeast Asia and the Pacific, and Sub-Saharan Africa.

with less water than rice. While the pilot was successful in generating awareness for minor millet production, many barriers were faced in its wider adoption. The overall lesson is that traditional millet cultivation will only succeed when supported by improved access to production, processing, consumption and sale. Else, the community or home garden model is likely to prove more expedient. Jagruti's successful work in the interior areas of Kandhamal suggests that deeper, long-term engagement in tribal areas is required to reduce food related vulnerability.

10. Linking Agriculture, Household Food Availability and Nutrition Security under MKSP. NRLM aims to increase land under cultivation, reduce cost of cultivation, increase farm incomes, as well as enhance household FNS without compromising on productivity. In this regard, OLM and JSLPS could build household food security linkages in sustainable agriculture and dairy interventions. This could be done by including food crops, kitchen gardens, traditional millets, dietary basket approach, and multi-cropping models for agri-diversity, in addition to other measures. Existing household food security interventions under Mahila Kisan Sashaktikaran Pariyojana (MKSP) projects and other cases described in the study are important sources which could inform an agriculture-nutrition strategy for Odisha and Jharkhand. MKSP, under NRLM, aims to improve the status of women in agriculture, and specifically empower women farmers. The MKSP guidelines mention improvements in household food security as one of the expected outcomes of an MKSP project. Inclusion of a FNS component is a core part of all MKSP projects. MKSP expects that enhanced control on agricultural resources and production will improve women's capacity to improve families' FNS situation. Under the sustainable agriculture theme, emphasis is laid on growing food crops, along with cash crops. All MKSP projects also promote household kitchen gardens producing fruits and vegetables round the year. Table 2 summarizes the FNS interventions that are being implemented by MSSRF, one of the MKSP partners in Maharashtra as well as Odisha.

Table 2: Household Food Security Interventions under MKSP
<ul style="list-style-type: none"> • Promotion of kitchen gardens • Promotion of locally suitable food grain crops like jowar • Promotion of fruit bearing trees wherever feasible • Demonstration of balanced diet & nutrition • Distribution of deworming tablets • Training on food processing • Promotion of safe cooking appliances • Facilitating access to health insurance schemes • Organizing health, hygiene and WASH awareness camps • Facilitation to access schemes/entitlements related to food security
<p>Source: Mahila Kisan Sashaktikaran Pariyojana NRLM –MSSRF Partnership. Towards Empowerment of Women Farmers in Vidharba from December 2011 to November 2014 (http://mssrf-fs-mksp.org/design/mksp).</p>

11. The SRLMs could build linkages with the MKSP partners in the states including the South Odisha Development Initiative (SODI) Consortium, Madhyam Foundation, PRADAN and MSSRF and others in Odisha; and Udyogini, PRADAN and Srijan in Jharkhand. Under the MKSP project, these agencies would be implementing awareness and capacity building activities on personal health and hygiene, community hygiene, diet and nutrition as a lifecycle approach, as well as improving access to government schemes on health, hygiene and nutrition. Linkages could be built in terms of field learning and exposure visits, understanding communitization of strategies, capacity building and understanding effectiveness and impacts in the tribal context.

The FNS interventions under MKSP could be further expanded in intensive blocks in these two states.

12. CRPs Promoting Entitlement Access and Advocacy. (MSSRF Community Hunger Fighters).

This MSSRF pilot mobilized women's SHGs in tribal areas of Koraput, Odisha. Dedicated CRPs mobilized the community demand for FNS related entitlements/services such as ICDS, MDMS, PDS, and Kishori Shakti Yojana (KSY). The key lesson is that demand aggregation requires stronger needs to correspond with improved access to service delivery. NRLM promotes systematic investment in human capital and skill enhancement of CRPs or para-professionals from within the community. In this regard, OLM and JSLPS could promote and support a cadre of FNS focused CRPs who would assist the adoption of community-managed FNS models in tribal and conflict-affected areas of the state. The specialized CRPs would need to be trained in one or all these areas: (i) manage food security measures such as kitchen gardens or grain banks and to support the access and utilization of related programs such as PDS or MDMS; (ii) support the adoption of optimal maternal and child care; and (iii) support SHGs or VOs to manage the local service delivery of FNS-related schemes, especially MDMS and PDS.

13. A notable example is CRPs from Chenchu community, a particularly vulnerable tribal group of Andhra Pradesh, who have implemented comprehensive food security interventions and come out of poverty and vulnerability. These CRPs are now working in the most food insecure tribal blocks of Maharashtra and helping the tribal communities there with preparation and implementation of food security Microplans.

14. Last Mile Service Delivery. There are many examples of community-managed service delivery to member households or the entire community. SERP has been supporting Nutrition Day Care Centers (NDCCs) in AP since 2007. The NDCC intervention was developed to provide improved health and nutrition services for pregnant and lactating women as well as children, with a specific focus in tribal and other underserved areas. SERP adopts a lifecycle approach and addresses the nutrition and health needs during pregnancy, lactation, childhood and adolescence. NDCCs provide nutritionally balanced meals per day to pregnant and lactating women and children, as well as behavior change communication on health and nutrition habits. An independent assessment of early outcomes showed better results among the NDCC participants, especially in terms of participation in antenatal care checkups during pregnancy, institutional deliveries, weight of the newborn, consumption of iron-folic acid (IFA) supplements, breastfeeding and full immunization, compared to nonintervention groups. The PDS system in Odisha as well Chhattisgarh allows SHGs to run fair price shops. In Gujarat, the Ministry of Women and Child Development has involved SHGs, Mahila Mandals, and Sakhi Mandals in procurement and distribution of fortified food in 10 blocks.

15. Convergence with Government Programs. Convergence of social protection schemes, especially MGNREGS, food security, PDS, ICDS, AAY, MDMS and social insurance and pensions is one of the core objectives of the NRLM, and is seen as an integral part of vulnerability reduction. VOs and primary federations provide the locus where programs targeting the rural poor can converge well. The Bank study shows that VOs/federations are handling a range of FNS services such as running nutrition and day care centers, providing food for MDMS in local schools, running PDS shops, and so on, and these need to be promoted not necessarily as livelihood options but also community-level arrangements that improve the predictability of essential FNS services for the rural poor. JSLPS is showing that NRLM has strong potential to converge with the Nirmal Bharat Abhiyan (NBA) and the National Rural Drinking Water Programme (NRDWP) which also follow a saturation approach to ensure water and sanitation for all. The three programmes, namely, NRLM, NBA and NRDWP, have an inherent potential to converge. The convergence between livelihoods missions and water & sanitation programs could be enhanced with the VOs building linkages with the Panchayats and water and sanitation committees. Under National Rural Health Mission (NRHM), Village Health

and Nutrition Days (VHNDs) are observed once a month in every village in India to focus on the provision of services and information. The VOs could take this up with the support of the cluster teams.

16. **Empowering women on food security and nutrition issues.** Under NRLM, the SRLMs are mobilizing women from the poorest and most vulnerable households and supporting them with microcredit, capacity building, livelihood support and access to safety nets and entitlements. It's important that the targeting of women also extends to cover pregnant and lactating women and children of less than 2 years of age. Dedicated behavior change and communication modules could be used for sensitizing and educating women on food security, dietary basket, maternal and child health and nutrition, and water, sanitation and hygiene, including VO members and Panchayat leaders. Women CRPs on food, nutrition, feeding practices and WASH could be empowered through training and exposure visits.

C. INSTITUTIONAL ARRANGEMENTS

17. **Spearhead team on FNS.** NRLP supports engagement of a multi-disciplinary team of experienced development professionals with expertise in diverse areas such as social mobilization, institution building, microfinance, banking, livelihoods, jobs, as well as food security, nutrition and health at the state level. The SRLMs could start by engaging a community-based FNS coordinator who would lead the development and implementation of the FNS program, in the context of NRLM in the states. The FNS coordinator could be supported by a pool of resource persons, NGOs and consultants who could support the FNS program in the states. SRLMs could also consider a multi-stakeholder committee or task force or advisory group on FNS, comprising representatives from relevant government departments, experts, and leading NGOs including MKSP partners. The exact configuration of the Spearhead Team would be based on the status of NRLM program in the states.

18. **Partnerships on food security.** Under NRLP, SRLMs could design and finance large scale pilots and innovative interventions that produce demonstrable results in health, nutrition and education status of the poor, including interventions for conflict-affected areas. The pilots could include capacity building and scaling up of community-managed health and nutrition centers successfully implemented by SERP, AP, and other community-managed models summarized in the report. Partnerships could also be supported with NGOs working in remote, tribal habitations where last mile delivery has been a chronic problem. Additionally, SRLMs could also propose innovations, social enterprises and partnerships that would improve nutritional outcomes in tribal and conflict-affected areas, including those selected under the various 'innovation forums'. The SRLM would need to appraise the FNS interventions based a range of criteria such as evidence of impact, extent of communitization with respect to CRPs and para experts, role of and linkages with VO and its capacity requirement, human resource requirement at block/cluster etc.

19. **VOs/Federations.** Under NRLM, VOs and primary federations play a central role in anchoring the range of interventions on social mobilization, financial inclusion, livelihood promotion and vulnerability reduction. They also have a key role in identification and mobilization of all the excluded poor households in the village/Panchayat into the SHG fold and supporting them for credit, livelihood and vulnerability reduction needs. For FNS activities, the VOs/federations would engage in demand articulation for access to key social protection schemes, especially MGNREGS, PDS, ICDS,

AAY, MDMS, insurance and pensions. VO/federations represent the 'community managed' dimensions of the various food, health and nutrition programs described above. In tribal areas, VOs would promote FNS subcommittee to assess and monitor the range of FNS interventions. The subcommittee system is based on periodic reporting of the performance of various programs with the VO executive committee to facilitate initiation of corrective action. Their main roles would be to identify, document and monitor FNS issues among the vulnerable households; supervise FNS subcommittees; appraise microplans for meeting FNS needs of members; supervise and manage FNS CRPs; improve access to entitlements and safety nets, and manage small grants for vulnerable groups. More specialized VOs could be given the role of managing food and health risk funds, nutrition centers, community food credit and distribution systems (grain banks), Fair Price Shops, and so on.

20. **Technical/resource agencies.** Finally, an important aspect of implementation will be building partnerships with technical agencies to support VOs and SHGs to develop capacity and deploy interventions. The mapping, in this report, suggests a way forward to potential partnerships. Such partnerships will facilitate the final recommendation below. NRLM supports engagement of a technical and resource agency to support the development and roll out of thematic pilots, conduct specific thematic training, assist in preparatory work on FNS, and provide orientation and capacity building support to project staff. JSLP has established a partnership with UNICEF on WASH interventions in the intensive blocks of Ranchi, West Singhbhum and Pakur. Similar partnership could also be explored with SERP or MKSP or other agencies/NGOs with strong experience of community-managed FNS interventions.

21. **National Mission Management Unit.** NRLM could develop a technical assistance program to support SRLMs in designing and implementing community-led FNS activities in tribal areas. Such a program could initially focus on a few states such as Odisha, Jharkhand, Chhattisgarh, and Maharashtra and support the piloting of FNS activities. NMMU role in providing TA could cover: (i) identification and validation of suitable interventions; (ii) knowledge and technical support for their implementation and scale up; and (iii) facilitation of strategic partnerships with other national missions on health, water and sanitation, NREGA etc. NRLM could also systematically test promising and emerging models and share the learning from these more widely.

D. PLANNING AND FUNDING

22. **Targeting Food Insecure areas for FNS interventions.** Based on the situation assessment, the SRLMs could prioritize intensive blocks and/or villages which face chronic food insecurity and have high levels of malnutrition. Within these areas, it's important to identify households and habitations of the most excluded social groups which also tend to be the most food insecure with high levels of malnourishment among women and children.

23. **Food Security Microplans.** NRLM envisages the preparation and financing of SHG/federation microplans on a range of priorities, including agriculture, purchase of livestock, dairy, trading, value chains, as well as food security and health risk funds for the poorest, and plans to assist the ultra-poor and vulnerable households. The Microplanning process needs to ensure FNS needs of the most vulnerable get captured in the microplans at household/SHG levels and then aggregated at the VO/federation level as Food Security Microplans. The VO microplans would need to aggregate the requirement for the Community Investment Fund (CIF) for vulnerability reduction in terms of food

security, health security and access to safety nets/entitlements. In preparing a Microplan, field teams, community coordinators and CRPs would need to provide support and guidance, to enable the community groups to plan FNS activities more effectively.

24. **Community Investment Fund.** NRLM recognizes that distress borrowing for emergency food and health expenditures perpetuates the debt burden on the poor and leads to loss of productive assets and livelihoods. Hence, the CIF, under NRLP/NRLM, is not only for productive livelihood activities but also for reduction of food, health and nutrition related vulnerability of the poorest households. A part of the CIF is dedicated to financing food and health interventions, based on SHGs coming together and preparing microplans on health and food security interventions. The CIF/CIS could be tailored for specifically targeting community FNS interventions in Odisha and Jharkhand.

- a. *Food Risk Fund.* CIF could finance a community managed food risk fund for mitigating food shocks of the poorest households in. Apart from proactive funding mechanisms, there could also be an expansion of funds available in the case of emergencies;
- b. *Rice Credit Line.* The Rice Credit Line involves credit for financing the gap in PDS allotment and household need. These mechanisms are useful if the shock is idiosyncratic or specific to an individual or household. However, for shocks affecting entire regions or communities (in the event of a drought, for example) bulk purchase and distribution of food from the market could be a more effective response;
- c. *Health Risk Fund.* For health intervention, poor households could subscribe to additional savings under a separate 'health risk fund' from which loans for meeting health emergencies could be advanced at nominal rates of interest and payable in relatively easy installments;
- d. *Access to Services, Safety Nets and Entitlements.* CIF could be used to support the community institutions to devise innovative ways of promoting access to public services, entitlements and rights, such as BPL cards, job cards under MGNREGA, rural housing, old age and disability pensions, social insurance and health insurance; and
- e. *Small Grants.* VOs could provide small grants on a limited basis, to the destitute, the old, the infirm and the disabled to meet emergency food and health purchases to help them graduate out of extreme poverty;

25. Guidelines for specific community-managed interventions such as collective procurement, food risk fund, and health risk fund would need to be prepared. The guidelines would need to cover the following details: description of FNS activity and its financing from CIF or as a Special Program, required social capital and maturity of VOs/federation, preparation and appraisal of FNS plan, details of the Memorandum of Understanding (MoU) between SRLM and federation/ resource agency, cost recovery mechanisms, provision for para-professional support, fund release and management.

E. CAPACITY BUILDING

26. **Training FNS CRPs.** Good quality training of the CRPs is a critical success factor in community-managed FNS programs. Through a well-designed program, the CRPs could be progressively trained on the core skills of identification and mobilization of food-vulnerable households, reduction of health expenditure, access to food and health emergency credit through SHGs/VOs, and Microplanning for household FNS needs. More specialized training would include managing food and health risk funds, maternal and child care and feeding practices; kitchen gardens, dietary diversity, cooking and nutrition counselling; improving access to ICDS, MDMS, and PDS; and

WASH, including behavior changes related to hand washing, clean water and toilet use. Based on the FNS strategy of SRLMs, other important areas of trainings could be managing nutrition centers, grain banks, rice credit lines and PDS shops, and partnering MDMS and ICDS.

27. Building VO/federation capacity on FNS services. Under NRLM, the VOs/federations have the key function of identification and mobilization of all the excluded poor households in the village/Panchayat into the SHG fold and supporting them for credit, livelihood and vulnerability reduction needs. Given that dealing with nutrition centers, collective procurement and risk mitigation funds are higher order activities, the VOs/federations would need to be trained to manage these interventions. In the context of FNS, the core areas of capacity building would be: ability to identify, document and monitor FNS issues among the vulnerable households; supervise FNS subcommittees; appraise microplans for meeting FNS needs of members; supervise and manage FNS CRPs; improve access to entitlements and safety nets, and manage small grants for vulnerable groups. More specialized training would be required for managing food and health risk funds, nutrition centers, community food credit and distribution systems (grain banks), Fair Price Shops, and so on.

28. Regional/district resource centers on FNS. NRLM supports promotion of state and district level resource centers and community learning academies for capacity building of the project staff, community leaders and community professionals. SRLMs in Jharkhand and Odisha could develop regional/district level centers on community-managed FNS approaches, to cater to the food insecure and malnourished blocks/villages in the states. Such centers/academies could develop cadres of professional trainers, master trainers and CRPs on FNS. The centers could be run by NGOs, and support the training needs of government staff, SRLM staff and PRI functionaries as well. Some of the existing MKSP partners such as MSSRF have regional resource centers and this model could be studied and supported by SRLMs. SRLMs could also envisage such centers within the State Institutes of Rural Development.

H. FOLLOW-UP DISCUSSIONS

29. The pilots have generated good interest among the SRLM team members. Consultations with the SRLMs have also taken place in this regard. Exposure visits to these pilots and learning workshops will help the SRLMs to adapt and integrate these pilots in the program. JSLPS has expressed the need for technical support on FNS and hygiene behavior. JSLPS wants to integrate the WASH approach and the SAFANSI pilot approach in a social enterprise framework. It is considering access to loans for Village Water and Sanitation Committees from the revolving funds and combining this with supplementary community contributions to complete Open Defecation Free (ODF) villages. Funds will be accessed from CIF to support the communities in achieving ODF status. Particularly, in case of slip back households, CIF funds will be accessed to construct toilets. JSLPS has raised concerns over the sustainability of village level organizations, particularly the Village Health, Sanitation and Nutrition Committee and VOs, and a joint visit to all three FNS pilots for all line departments is being organized. OLM wants to expand the Moi Badi program, based on evidence. The mission wants to hold a workshop on the pilots in the state.

