

Small Millets-Based Livelihoods and  
Actually Existing Markets in Andhra Pradesh, India

by  
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A Thesis submitted to the Faculty of Graduate Studies of  
The University of Manitoba  
In partial fulfillment of the requirements of the degree of

MASTER OF ARTS

Individual Interdisciplinary Studies  
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## **Abstract**

The decline in cultivation and consumption of small millets crops seen across India in recent decades is a concern for many. These highly nutritious coarse grains hold significant cultural value as traditional foods for tribal farming populations and remain important contributors to regional agro-biodiversity. Born of out this concern, small millets have garnered recent attention as underutilized crops with potential to contribute to regional food and nutritional security through market development. By localizing small millets within the broader context of agricultural change, this work investigates links between cultivation, distribution and consumption – or the market chain – of small millet varieties in northern coastal Andhra Pradesh, India. Employing an interdisciplinary methodology drawing from anthropological and agribusiness approaches, this study conducts an in-depth, qualitative market chain analysis for finger millet and little millet varieties to produce a multi-sited ethnographic work on informal agricultural marketing in the case study area. In incorporating the political economic, historical and cultural dimensions of millets and other crops, this research teases out the complex relationships between food security, livelihoods, agricultural marketing and development interventions. This research aims to demonstrate how a holistic study of an agricultural commodity, which includes on-farm cultivation and consumption, can get at how smallholder farmers participate in local markets, in everyday practice, and how they engage with change. In connecting a traditional market chain analysis with detailed ethnographic study on the ground, we can see how farmers engage with markets embedded in particular historical and sociocultural contexts. Further, this work provides insights into the challenges of small millets-based livelihoods, going beyond the market to explore the many social institutions in which market participation is embedded. In doing so, I argue that nuanced approach to millets-based livelihoods, commercial crops and broader agrarian transition is necessary.

**Key words:** small millets, food security, ecology of practice, nutrition-sensitive agriculture interventions, value chains development, embedded markets, sustainable livelihoods framework, South India.

## **Acknowledgements**

I would like to thank my advisor, Dr. Derek Johnson, and graduate committee members Dr. Kirit Patel, Dr. Derek Brewin and Dr. Mark Hudson for their guidance and support throughout the course of this research program. I would also like to thank my translator and research assistant Sharon Nadimidoddi, Dr. M.L. Sanyasi Rao, Salome Yesudas, and S. Kiran to whom I am indebted for their support and friendship.

Finally, I would like to thank all of those in Araku Valley that welcomed me into their homes during my time in the field – and for lessons about agriculture, hospitality and friendship that I won't soon forget.

I acknowledge the generous financial support of the International Development Research Centre through its Canadian International Food Security Research Fund (CIFSRF) and the University of Manitoba through the University of Manitoba Graduate Fellowship (UMGF).

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## Acronyms and Abbreviations

BPL	Below Poverty Line
CIDA	Canadian International Development Agency
CIFSRF	Canadian International Food Security Research Fund
CSA	Commodity Systems Analysis
DFATD	Department of Foreign Affairs, Trade and Development Canada
FDI	Foreign Direct Investment
GCC	Girijan Cooperative Corporation
ICDS	Integrated Childhood Development Service
IFAD	International Fund for Agricultural Development
INSIMP	Initiative for Nutritional Security through Intensive Millets Promotion program.
ITDA	Integrated Tribal Development Agency
NFSM	National Food Security Mission
NGO	Non-Governmental Organization
NREGA	National Rural Employment Guarantee Scheme
NTFP	Non-Timber Forest Products
NUS	Neglected and Underutilized Species
PDS	Public Distribution System
RESMISA	Revalorizing small millets: Enhancing the food and nutritional security of women and children in rainfed regions of South Asia using underutilized species
SLF	Sustainable Livelihoods Framework
SNP	Supplementary Nutrition Program
SRI	System of Rice Intensification
VCD	Value Chains Development
WASSAN	Watershed Support Services and Activities Network

# Chapter 1

## Introduction

*“An interesting but difficult idea to explore is how changing patterns of livelihoods and consumption in particular influence and interact with the character and behaviour of markets in contemporary India.”*

- Vijayshankar and Krishnamurthy (2012:37)

*“Not only is market exchange an ambivalent phenomenon, but it is also extremely complex and specific because everywhere it is deeply embedded in social institutions”*

- Harriss-White (1999:2)

### **1.1 Introduction: To Market, to (Behind the) Market**

The decline in cultivation and consumption of small millets crops seen across India in recent decades has raised concern for food and nutritional security in many regions – and is an issue of great complexity. The purpose of this research was to examine the local markets for a group of neglected yet nutritious grains, small millets, to assess the opportunities to promote their cultivation and consumption, to improve the food security and livelihoods of tribal farming groups in South India while contributing to regional agro-biodiversity. The rationale for this ambitious study was multi-pronged and the methodology multi-disciplinary.

This research evolved somewhat iteratively, as research does. Persistent themes continued to emerge over the course of the research, slowly changing the focus. How did a seemingly straightforward market analysis study balloon into a collection of stories of agrarian transition, change in lifestyle, and differing practices, perceptions and motivations held by farmers, traders and other actors in the case study area? This was the story *behind* the market.

By localizing small millets within the broader context of agricultural change, this work investigates links between cultivation, distribution and consumption – or the market



chain – of two small millet varieties in a mountainous agricultural region of Northern Andhra Pradesh, India. Weekly rural agricultural markets, known locally as *santhas*, in this context represent an important linkage between small millets cultivation and consumption practices with greater questions of food security, livelihoods, government schemes and development interventions. While recognizing this central role that markets play in agricultural livelihoods, this research shows that neoclassical understandings of economic decision-making are not always able to explain decisions to participate in markets at the household or regional level.

This project represents an attempt to carefully unravel the linkages between the political economic and institutional factors that influence Indian agriculture, cultivation and consumption practices, rural livelihoods, and food security through an examination of these local weekly markets. This effort, in part, is premised on the supposition that state intervention since the green revolution era has distorted local practice, resulting in a shift away from the cultivation and consumption of traditional small millets. Market development experts assume that institutional factors shaping both millets cultivation practices (supply) and consumption practices (demand) should then come together in the market system. However, the functioning of local agricultural markets is complex, and is further complicated by a history of intervention and agrarian social change. This research argues that the convergence of cultivation and consumption in the market system should not be taken for granted. The limits of this convergence mean that market interventions will not necessarily have the desired impacts on cultivation and consumption practices – this relationship is not symmetrical.

My objective was to see how these many different factors – such as the longstanding practice of distributing ration rice and the promotion of cash crops – were affecting the local markets for millets in terms of constraints and opportunities. And, along with that, I sought to find out how these factors were affecting production and consumption practice at the farm

level. In the end, I came out with a collection of stories that demonstrate how markets are changing, and how millets practice is changing *alongside* a more widespread change in lifestyle. These are stories from farmers, traders and other actors experiencing these changes in agricultural production and consumption practices. And beyond this, I explore how farmers are reacting to and negotiating with *changes in the market* for small millets as demand for these grains has increased outside of the local area only in very recent years. How these changes in the market have affected local practice, especially consumption practice, plays out in a somewhat surprising manner: surprising both in terms of the variance in practice – completely different consumption practice in two village case studies – and surprising in terms of the richness that emerged in interpreting the reasons behind this difference.

In the field and during analysis phases of this research, I struggled with certain dilemmas with respect to the RESMISA project objectives and activities – and the potential application of value chain interventions in this context. As I discuss later, there is an inherent contradiction present when we ponder interventions for value addition and to increase local consumption in the same breath. From a theoretical point of view, creating space for reflexivity and negotiation with these dilemmas adds a certain richness to a study in the social sciences. But, equally, the practicality of implementing funded interventions requires researchers and practitioners to first understand what is going on the ground – and what people are doing *in practice* – if they want to come to understand the potential and real outcomes of interventions. A solid, documented understanding of how people relate to markets is why every market intervention necessitates chain analysis. I argue that in connecting a traditional market chain analysis with detailed ethnographic study on the ground, we can see how farmers engage with markets embedded in particular historical and sociocultural contexts.

Over the course of this research I learned that farmer engagement is not just about the mechanics of the market, profit margins, or even the fields of power; it's just as much about change in lifestyle, changing tastes, rising education levels, and the many motivators and indicators of change. I argue that widening the scope of my research is what allowed for these themes to emerge, and saved this project from its own contradictions. Indeed, this research aims to demonstrate how a holistic study of an agricultural commodity, which includes on-farm cultivation and consumption, can get at how smallholder farmers participate in local markets, in everyday practice, and how they engage with this change. Further, by merging a discussion of the contradictions of agriculture-based and market-based development interventions with ethnographic research conducted in rural India, this research aims to add an understanding of the push and pull dynamics of market-based agricultural livelihoods and development interventions.

## **1.2 Background on the RESMISA Project and the Case Study Area**

### *RESMISA*

This farmer-centric research contributed to a larger multidisciplinary collaborative project that sought to promote the cultivation and consumption of small millets to improve the nutritional security and livelihoods of marginal groups across South Asia. The project, titled "*Revalorizing small millets: Enhancing the food and nutritional security of women and children in rainfed regions of South Asia using underutilized species*" was funded by the International Development Research Centre under its Canadian International Food Security Research Fund (CIFSRF). This project was one of several funded Master's, PhD, Post-doc and other undergraduate and graduate degree-seeking research projects undertaken by students enrolled at Canadian universities. Within this framework, each student was partnered with one (or more) local partner that anchored each research site. This partnership approach

was designed to facilitate shared learning while completing project objectives in collaboration.

The primary objective of the RESMISA project was “to increase production and daily consumption of nutritious small millets, pulses and oil seeds in rainfed regions of India, Nepal and Sri Lanka by using gender sensitive participatory approaches to address constraints related to the production, distribution, and consumption of underutilized species” (Karthikeyan et al 2010).

The six specific objectives and primary areas for research were as follows:

1. To promote sustainable use and on farm conservation of agrobiodiversity of small millets that are important for minimizing climate change related risks in agriculture and improving human and animal health in rainfed ecosystems;
2. To develop sustainable agriculture kits, through gender sensitive farming system based participatory research, for minimizing agronomic and production related constraints experienced by small millets based cropping systems in rainfed regions;
3. To develop and adapt appropriate post-harvest technologies and add value for increasing consumption of small millets, especially among rural women and children, and to create sustained demands in local markets;
4. To revitalize indigenous knowledge and sociocultural practices that augment cultivation, processing, storage, and utilization of small millets;
5. To enhance the consumption and social status of small millets as a wholesome foods in rural and urban settings, and
6. To undertake policy analysis and advocate for a policy environment that counterbalances incentives for green revolution crops and provides a level playing field for production and consumption of small millets. (Karthikeyan et al 2010)

The RESMISA project was an example of a collaborative, interdisciplinary project, incorporating a wide range of activities such as participatory plant varietal selection (PVS), markets development, and research dealing with everything from dietary recall to indigenous knowledge systems. This was accompanied by a host of educational activities and policy advocacy. Given the focus on bridging sociocultural practice with political economic institutional factors, this research contributes in different ways to project objectives 4, 5, and 6.

## *Project Site*

My field research was multi-sited, based in Araku Valley, Andhra Pradesh but anchored by regular visits to the four local weekly markets (*santhas*) and two case study villages. Beyond the case study villages, several villages in the region were visited along with relevant offices of government departments and non-government organizations.

The site is referred to in RESMISA project documents as the ‘Dumbriguda’ project site. The Dumbriguda mandal<sup>1</sup> is found in the north coastal region of Andhra Pradesh and is one of 18 mandals in the Visakhapatnam district, also known as the Visakhapatnam Agency, or often referred to locally as simply “the Agency.” Due to its mountainous location, this region can be considered geographically remote, even marginal. The Dumbriguda site was originally one of the eight research sites selected by the RESMISA project team at the outset of this three and-a-half-year research agenda. Each of the project sites was selected taking into account the presence of millet cultivation and rainfed agriculture and to allow for investigation within multiple project objectives. In addition, each of the RESMISA sites is located in different jurisdictions in South Asia to provide opportunity for policy comparison research.

Dumbriguda was also selected for its characteristic as a tribal region. Beyond this, I had originally anticipated visiting key points outside of the local area to further trace out the market chain for millets. However, as I got to know the local market and themes began to emerge in the field, it became less important to me to visit later stages of the chain and opted to focus instead on deepening my understanding of local practice.

With that said, widening the reach of my field site locally was one of the first changes that I made upon arrival to the field. I quickly learned that three of the four local weekly markets in the region were situated outside of Dumbriguda proper. Moreover, I felt that visiting villages over this broader area made sense as the lines between mandals are not so

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<sup>1</sup> ‘Mandal’ is the local word for *gram panchayat*, the lowest level of government.

<sup>2</sup> Geertz’s (1973) concept of “thick description” is foundational to the school of interpretive anthropology.

important in terms of market use, local transport, nor in terms of everyday practice for farmers. In addition, several of the government officials we spoke with were headquartered in a larger village called Paderu, which is located in yet another mandal. While the RESMISA site is referred to as ‘Dumbriguda,’ I now refer to the region as Araku Valley, or simply Araku.



*Figure 1: Map of Andhra Pradesh*



Figure 2: Map of case study area, Araku Valley region

### Project Partners

The RESMISA project was well positioned with strong non-governmental partnerships in all project sites. There were two local partners working in the Dumbriguda site, Watershed Support Services and Activities Network (WASSAN) and Vikasa. WASSAN is a regional leader in watershed and dryland agriculture policy advocacy and co-supervised the project implementation at the Dumbriguda site while working on issues of policy advocacy at the project level across sites in all three countries. WASSAN’s head office is located in the state capital of Telangana, Hyderabad, but has one staff person dedicated to work in the Dumbriguda/Araku Valley site. Vikasa, another local NGO working in the region for over twenty years on horticulture projects, has been contracted by WASSAN to co-implement project activities such as plant trials while lending immediate local knowledge.

WASSAN and Vikasa are also charged with the program of millets promotion and outreach in the area, including regular discussion groups with women and farming families, recipe trainings, seed exchanges, and other events as part of the RESMISA project.

### **1.3 Research Questions and Objectives**

At the outset, the overall goal of my research was to conduct an in-depth, qualitative, value chain analysis for small millet varieties in the Dumbriguda case study area to assess the weaknesses and opportunities in the market.

*Research Question:* How have sociocultural, political economic, and policy factors facilitated or restricted local markets, and with that, the cultivation and consumption of small millets in the Dumbriguda case study area?

*Objectives:* The overall objective of this study is to carry out an in-depth, qualitative value chain analysis for small millets. The purpose of my research is to examine the local small millet market chain in one case study area to assess the opportunities to promote the cultivation and consumption of nutritious small millets to improve the food security of poor and marginal farmers, women and children, and indigenous groups in South Asia through a sustainable livelihoods approach while contributing to regional agro-biodiversity. Specific research objectives are to:

1. Produce a descriptive case study of the local market for small millets in the Dumbriguda mandal, identifying key actors and the geography of the local market system;
2. critically examine the impacts of green revolution-era agricultural policies, food security programmes, and other government policy on local market chains for small millets;
3. examine present-day informal private market chains for small millets in one case study area to understand how socio-economic, political, and policy factors facilitate or restrict the cultivation and consumption of small millets, and
4. contribute to value chains analysis literature with a unique approach that combines traditional value chains analysis with the ecology of practice orientation.

The findings as they relate to these objectives can be found as follows: Objective 1 in Chapter 5; Objective 2 in Chapters 4 and 6; Objective 3 in Chapter 4, 5 and 6; and Objective 4 is covered primarily in Chapter 7.



## 1.4 Theoretical and Methodological Overview

It is important to understand that the theory and methodology that guided this research were open to change, and did change, throughout the course of the research. This research was initially structured around a value chain analysis framework as a gateway to understanding how the market functions and to also get at the motivations of actors from farmer to consumer. This interdisciplinary approach drew from existing methodologies in what resembles a *market chain analysis* while drawing methodological components and sensibilities from *commodity systems analysis* (Friedland 2001). There is no shortage of market chain analysis literature, methodology, and toolkits. Specifically, and given the context of the RESMISA project, I drew out components from toolkits such as Value Chain Analysis for Underutilized and Neglected Species (VC-UNS) (Will 2008) and the World Food Programme (2010). The final output of this project was a qualitative study of the complex, local agricultural markets and the many sociocultural and institutional factors that affect local practice in the form of a *multi-sited ethnography* (Marcus 1995). While theoretically and practically challenging, multi-sited research in the context of agro-food chains can allow the researcher to see things not observable through single-sited research, nor through a purely macro, political economic focus.

The strength in this methodology lies in its interdisciplinary approach, which aims to be focused, yet flexible enough to take advantage of the toolkit provided by experiential and ethnographic ways of knowing (Hann and Hart 2011). Interdisciplinary approaches, I argue, are essential for complex systems (i.e. markets) and complex issues (i.e. food security). Building upon a market chain analysis framework, this approach creates additional space for consumption practices. Not only is this an important part of a nutrition-sensitive agricultural research, this allows for investigation into how the identities, local experiences and symbolic positions of millet have shifted over the course of their decline. It was equally essential to

bring in a firm understanding of the intersections of caste, class, gender, and tribal identity – while bridging these with material opportunity in markets and millets trading. Uncovering those dimensions involved a focus on daily practice. Keeping an *ecology of practice* sensibility at the forefront of investigation – which means taking into account social particular contexts in order to understand what people are doing in practice – was crucial to this research (Nyerges 1997).

The theoretical underpinnings of this project are also, in a sense, interdisciplinary. Guiding this research includes *political economy* approaches to explaining institutional histories and the *ecology of practice*, as a way of understanding what people do in daily practice. Linking together the ecology of practice with local markets is a Polanyi understanding of markets as *embedded* within particular social and historical contexts (Polanyi 1944). This project also spurs a productive discussion around *food security*, *food sovereignty* and *sustainable livelihoods* approaches to development within the context of agrarian change.

I gathered data over a three and a half-month period relying primarily on semi-structured interviews, group interviews, and participant observation. I interviewed farmers, groups of farmers, traders, government and non-government officers to get at the differences in perception with regard to recent changes in millets cultivation, consumption, land use practices and change in lifestyle. An important part of this research was selecting two village case studies for a comparison in addition to the market study. The rationale behind this was that spending time in villages would be the best way to get at farmers' marketing practices, how farmers use markets and how they adapt to change. Considering the differences in practice that came out over the course of this research, such as making decisions to participate in millets marketing, this was indeed an important finding.

## 1.5 Summary

Many of the findings woven into these next chapters will not be of great surprise to those familiar with the history of small millets and Indian agriculture. Changing cultivation and consumption preferences are widely documented across India and South Asia, and this case study is no exception. Farmers often cited environmental and economic reasons for the decline in millet such as the recent unreliability of rainfall and the need for cash-based income. Such findings were anticipated. Other findings caught me somewhat off guard and, to me, ended up providing some of the most interesting insights of my research. Conversations that weren't about millets – conversations about change, education, and the reality of mixed subsistence and commercial farming – were those that stayed with me. Negotiating the contradictory nature of this project proved equally interesting. The contradictions inherent in an interdisciplinary development project with a single crop-focused objective – and a project that is at once focused on market development and the local consumption of nutritious small millets – lent much to theoretical discussions and conclusions about the difficulties inherent in millets-based livelihoods. The dilemmas around food security, food sovereignty, market-oriented agriculture and loss of agrobiodiversity are complex and interconnected – and, in a sense, compete for the attention of academics, NGOs and government bodies. In rooting these issues back down to the livelihoods of farmers, and how their lives are continuously changing in practice, I argue that these theoretical tensions are real – and that a more nuanced understanding of millets-based livelihoods is necessary.

## Chapter 2

# Theoretical Framework and Context of Study

*“Disengagement with theory results in a reluctance to grapple with real contradictions found within marketing systems.”*

- Jan and Harris-White (2012:40)

*“[The ecology of practice] analytically privileges the sociocultural contexts in which individuals are acting, viewing these contexts as sometimes readily manipulable and sometimes highly constraining particularly when institutionalized into formalized structures, or hierarchies, or age, gender, ethnic and class relations”*

- Nyerges (1997:12)

### 2.1 Introduction: Grounding Field Research

All research is – by necessity – designed, guided and shaped by theory. This research was conceptualized from a political economy and ecology of practice orientation, at once aiming to understand markets from a commodity complexity approach while keeping the focus acutely on the ground. Indeed, rooting this research firmly in what it is that tribal farmers are doing (that is, growing, eating and selling in addition to off-farm activities) proved useful in more ways than one. First, this approach allowed for the connection to theoretical discussions around food security, food sovereignty and livelihoods approaches. Second, this approach informed the connection to the theorization of agricultural commodity markets in India, market-based development interventions and broader discussions of the dilemmas, contradictions and paradoxes of development. Uniting these approaches is what very much resembles a Polyanian way of understanding informal agricultural markets.

Building upon an existing body of work that examines various food and agricultural commodity chains in both political economy and development contexts, this qualitative study of one local market area is an effort to, through qualitative research, integrate the market with

the social aspects of agricultural policy-making and market participation (Collins 2005). Setting the theoretical stage for interdisciplinary research can be challenging, but is crucial. What continues to excite me about this theoretical framework is the space for a variety of theoretical and methodological points of view, but, mostly, that the orientation remains rooted in everyday practice.

What follows is an overview of the bodies of theory that I have engaged with over the course of this research. This chapter also discusses the rationale behind small millets based research and interventions, drawing out the story of their neglect, but also their potential. Further, the connection between small millets and the bigger picture of the Indian agricultural sector and populist politics is discussed. Wrapping up the contextual portion of this chapter is a brief overview of sociocultural elements of caste, class, gender and Adivasi identity in rural Andhra Pradesh, India.

## **2.2 Theoretical Framework**

### **2.2.1 Political Economy**

Political economy analysis shaped much of the early literature and research on food with a focus on the globalization of food (Friedburg 2001). In this literature, foods were treated as a commodity, drawing “strong parallels in the historical trajectories of industry and agriculture, in that both were being shaped by the increasing speed and complexity of corporate capital flows, and by the eroding power of the nation-state” (Bonanno 1994:32). The origins of this approach are especially relevant to this market research as it relates to the current discussions in India today around agricultural commodity markets as they become more capital intense (though most public commentators on the subject seem to be more in favour of increased capital flows and foreign direct investment than against.)

But one primary critique of political economy’s commodity complexity approach is that it does not account for all actors, such as consumer demand and the environment from

which food is grown and produced (Busch and Juska 1997; Goodman 1997; Goodman and Watts 1997). Indeed, discussing food security policy while neglecting local food preferences (demand) and issues such as erratic rainfall and soil depletion (environment) would be of little use in practical terms to this research. While such critiques need not be taken at face value, it is important to note that approaches such as commodity systems analysis, to be discussed later on, arose out of this perceived need to account more accurately for both consumption and nature.

And while the commodity complexity stream of political economy is useful as a starting point to examine millet as an agricultural commodity, political economy theory itself yields great explanatory power. Wolf's (1982) foundational work, which operates from a Marxian framework, proposes a way of understanding social relations as "a totality of interconnected processes," and, moreover, provides a useful way of understanding subaltern perspectives and the historically particular developments in the global political economy (1982:3). Given that a particular political economic and institutional history has shaped millet production and consumption and agrarian capitalism in India over the past half century, political economy proved a useful guide this research.

By examining neglected grains within a particular historical and sociocultural context, we begin to unravel the explanatory power of the small millets as a lens to assess and locate power relations in markets and among traders, farmers and other actors. Indeed, these power and class relations come through in many ways, such as the power struggle between capital-rich, price-cooperating traders and smallholder farmers in the market. Political economy allows us to unpack the meaning behind terms like "backward," "cunning," and other descriptors of tribal people that I encountered in the field. Further, being able to think about the way these local power relations are linked to the historically particular policies and institutions that created these relations – such as the Forest Rights Act, the various nutrition

schemes, and agricultural investment (or lack thereof) this neglected area – is a key strength of political economy. Building bridges between micro and the macro social phenomena is exactly what we are trying to with the ecology of practice, and building out the power dynamics is one way that political economy complements ecology of practice.

Observation, and the focus on practice were essential here. Given this orientation, over the course of the research I kept an eye out for the kinds of structures that shape the relationships between chain actors, distributions in wealth, opportunity and power. However, it is true that the structure and institutional factors that affect markets do not alone explain how market relations among actors are formed and maintained, opening the door to intersectionality in analysis.

### **2.2.2 Building Bridges: Ecology of Practice**

Later sections of this chapter provide an overview of the institutional and socio-cultural factors that have accompanied the decline in small millets cultivation and consumption over the last few decades. Central to this research is building bridges between the many contextual factors that influence farmers decision-making and livelihoods possibilities. For example, known widely as a ‘food of the poor,’ let’s suppose that people do feel poor when they eat millets – but then how do such issues as identity, caste, class and gender relate to the higher institutions of India’s famously populist politics and reform-minded governments? For some, it might be tempting to shrug and question what relevance symbolic understandings of nutrition have on policy on the ground.

Such questions, I think, are not unfounded. While food consumption practices among tribal farmers such as a preference to eat white, polished rice *can* be understood as projects of emulation or modernization, it would of course be problematic to argue that these are the *only* reasons for the decline in millet consumption (and cultivation) in India. Rather than pointing exclusively to the socio-cultural explanations (e.g. millets are linked to status), it is

fundamental to place these processes within the broader political economic and institutional context (e.g. why funding dedicated to the research of these grains has been mostly non-existent or why even a simple dehuller is not available for use in most regions). Indeed, all of these changes on the ground, in practice, are occurring within a wider structure of political economic and agricultural change.

Connected both to local social relations and the institutional environment, small millet market chains represent one way to bridge these local and contextual practices with the broader political and economic structures. A holistic understanding of food production, distribution and consumption (or, the market) allows for this, and this is precisely what an anthropological approach contributes to such discussions. Merely looking at the broad structures causes us to overlook much of what is seen on the ground in people's daily practices. This is important as "understanding the complex ways in which social norms, cultural meaning, and economic realities underlie food habits is essential for making successful policy recommendations and for integrating indigenous knowledge into nutritional understanding" (Counihan and Esterik 2007:5). These processes can easily be masked by a purely political economic or institutional approach to issues of food security.

We can work toward a more holistic understanding of the issues around millets, which is essential for driving effective policy and program development aimed at improving food security among marginal groups. However, although an exclusively socio-cultural or anthropological approach provides a necessary window into local cultural practice, the false separation of socio-cultural and institutional components of agricultural change and food choice in this context is problematic. The importance of building a bridge between these many interconnected forces that affect practice is fundamental to this research and more broadly to the discussion around food security in farming regions.



This building of bridges alludes to the *ecology of practice* (Nyerges 1997) orientation that guides this research and the entire social sciences component of the RESMISA project. Rooted in Bourdieu's (1977) practice theory and, more broadly, political ecology approaches, the ecology of practices rests upon an assumption that the acquisition of basic needs always and necessarily occurs within a context of social and power relations – meaning it is essential to take this context into account (Nyerges 1997). This approach has been used to guide food security research in subsistence farming regions of Sub-Saharan Africa. In this study, the idea is that the study of markets will open up a window to local practice. An ecology of practice approach “[t]akes as its crucial methodological starting point the individual actor exploiting resources” (Nyerges 1997:12), which is immediately compatible with agricultural economics perspectives, but also sustainable livelihoods perspectives.

Finally, it is important to recognize that political economy and the ecology of practice need not be understood as things apart. Political economic relations, and structures of power, are taken into account by both political economy and ecology of practice approaches. A political economy approach, or historical materialist perspective, is perhaps most helpful in explaining the ‘why’ behind the ecology of practice. However, the ecology of practice, I argue, is capable of going farther in its understandings of markets, in that it takes into account daily practice, and how people make sense of the complex web of livelihoods possibilities and social relations in which they find themselves – and which are always changing. While political economy approaches are often viewed as less capable of accounting for agency, in including the ecology of practice, this research is able to open up those avenues to see what it is that farmers, traders and other actors are actually doing to negotiate the changes in markets, cultivation, and consumption ongoing in this region – and what this means for regional food security.

### **2.2.3 Food Security**

This research contributes to a project that aims ultimately to improve the food and nutritional security of women and children in South Asia. Atop the foundation of political economy and the ecology of practice, the theoretical layer that deals specifically with conceptualizing food security and poverty is thus a crucial component. With the ultimate objective the improvement of food security, it is important to first establish what is meant by ‘food security’ before moving on to conflicting and competing frameworks.

There are many definitions of food security and insecurity, but the RESMISA project works from the World Health Organization’s widely cited definition of the three pillars of food security:

- Food availability: sufficient quantities of food available on a consistent basis.
- Food access: having sufficient resources to obtain culturally appropriate foods for a nutritious diet.
- Food use: appropriate use based on knowledge of basic nutrition and care, as well as adequate water and sanitation (World Health Organization 2012).

Interestingly, and given that this is a market-focused study, it is worth mentioning that in recent decades it is actually the growth of international agricultural trading that gave rise to an interest in what we term ‘food security’ (Lee 2007:2), and images of those that are ‘farming yet hungry.’ It is useful to remind ourselves that the RESMISA project is a positivist and objective-oriented research project that seeks to inform policy and practice with impacts on the ground. A food security framework is appropriate as food security and related interventions can be readily measured, monitored, evaluated, and – importantly – scaled up if successful.

### **2.2.4 Food Sovereignty**

While the RESMISA project is placed within this conceptualization of food security, this research project complicates it by making use of both food security and sovereignty frameworks. To make up for the shortcomings of food security frameworks, the food

sovereignty movement was spurred by the peasant movement Via Campesina, who provide the following definition:

Food sovereignty is the right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity. We have the right to produce our own food in our own territory. Food sovereignty is a precondition to genuine food security. (Via Campesina 1996:1)

Food sovereignty is a rights-based approach that creates space for food politics, and direct and democratic participation into one's food system (Patel 2009). In the context of subsistence agriculture and the decline of historically valued food grains, food sovereignty adds a useful lens: creating space for food choice, identity – in this case tribal identity – and control over one's food supply is central. While food sovereignty is generally viewed as a 'process,' whereas food security is the 'end goal,' ultimately, both perspectives are concerned with how food and farming *ought* to be, given that malnutrition still plagues countries like India.

Local partner organization WASSAN conducts much of their millets-based work from a food sovereignty framework. I was told that this is due in part to working with tribal groups – given that these discussions and interventions are all occurring atop a history of land rights struggles, a food sovereignty framework is only appropriate. Interestingly, hand-in-hand with the discourse around granting tribal land rights has been the government promotion of cash crops such as coffee, cashew, mango and other fruits. Indicative of this dilemma, one of the local staff asked me rhetorically, “How can these people get their food security by growing coffee?” This question can then be answered from within the food security framework: commercial cultivation facilitates access to food through exchange.

Vikasa, the other local partner, is a horticulture-based organization that works exclusively in the Araku Valley region. Interestingly, while WASSAN works from a deeply seated food sovereignty perspective, and holds a strong concern over the promotion of

horticulture and the replacement of traditional small millets crops, Vikasa's primary development activity is the promotion of plantations in the region.

### **2.2.5 Sustainable Livelihoods Framework**

Yet another approach to understanding issues of malnutrition and rural development, and moving beyond the strict confines of food security, is the sustainable livelihoods framework (SLF) (Chambers 1995; Scoones 2009). A livelihoods perspective approaches questions of rural development with a flexible and open way of understanding how it is that people live and earn a living (Chambers 1995). Rather than zeroing in on disciplinary silos and objectives such as improving nutrient intake or increasing agricultural yield, a livelihoods approach understands that most people engage in a diverse set of activities that includes subsistence farming, market farming, some wage employment (like the NREGA), small-scale enterprise (such as petty trading), foraging (such as forest products) and other activities and schemes (such as the PDS) to meet daily needs (Scoones 2009:2). In this way, livelihoods approaches are able to account for diversity and adaptation in people's practices. The idea is to examine what people are doing, while trying to understand how it is that people make ends meet and share responsibilities in accordance to different needs – and recognizing that this diversity occurs regionally, within villages, and even within the household. These examples, and this diversity, are documented among farming households in Araku Valley.

While sustainable livelihoods approaches are appealing, and do directly complement the ecology of practice, the SLF has been critiqued for its inability to adequately account for the broader political economic structures (Scoones 2009). Once again, the ecology of practice builds another useful bridge for our purposes here. On the other hand, SLF's conceptual map (which diagrams the possible elements that play a role in people's livelihoods) is thought to add "a meaningful perspective for understanding the relationship between agriculture interventions and nutrition outcomes" (Berti 2003, Krasevec and FitzGerald:600). I will

return to this important contribution in later chapters.

### **2.2.6 Theorizing Markets**

With the theoretical foundations laid, we are now poised to move forward, and outward, to the theory of agricultural commodity markets. From cultivation to consumption, markets today are an integral, almost obvious component to our food systems. Yet, from political economy, food security and food sovereignty points of view, certain types of markets have often played a role in exacerbating food insecurity. While considering various conceptualizations of markets, this research argues that markets are embedded – meaning that market participation rests on a bed of institutional and sociocultural institutions.

#### *Anthropological Literature on Traditional Markets*

Traditional rural agricultural markets in all their chaos, colour and crowds are simply fascinating. To Westerners, these markets scream ‘culture,’ and for this reason their study has not been exclusive to agri-business research. Anthropologists have long been interested in the petty agricultural markets of developing countries, and such studies represent a small chapter in the classic era of anthropological study. The traditional weekly markets of rural India and in other locales, while certainly central to the provision of household needs, must also be contextualized as a central part of society more generally (Gell 1982).

The landmark ethnography of rural markets in China, conducted by Skinner (1964), theorizes these links between ancient rural market and social structure. One example especially relevant to this research is Geertz’s “thick description<sup>2</sup>” of local tribal markets in Madhya Pradesh, India, where his objective is to demonstrate the role of markets in social cohesion and relations (Gell 1982). He argues that beyond a system of material exchange, the tribal market “locates the villagers in a holistic system of sociological categories, and binds them to this system by means of market relation” (Gell 1982:471). Keeping this traditional

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<sup>2</sup> Geertz’s (1973) concept of “thick description” is foundational to the school of interpretive anthropology.

anthropological study of markets in mind helps to contextualize this research within the long, although not dense, history of social science-rooted market studies that came before it.

### *Markets in India*

While the older anthropological literature on food markets in India focuses on the merits of social cohesion, much of the discussion of India's food markets today is centered on ideas of backwardness, inefficiency and a need to modernize. This discussion is highly polarized, with one school arguing that the sector is locked in a state of crisis while the other opines that in this moment these agricultural markets are well-poised to modernize and are ripe with opportunity (Narayanan 2012). Further dividing the academic literature and popular opinion of India's agricultural markets, are two primary conceptualizations of said markets. In this case, the opinions dictate what kind of policy and regulatory framework is required. One camp sees agricultural markets as so flawed, backward and inefficient that they require significant state intervention (Jan and Harriss-White 2012). The other sees them as competitive and as sites of a modernizing economy that is an open door for farmers and new value chain actors – and that government should step back and allow for increased private capital flows (Jan and Harriss-White 2012).

This debate continues, but meanwhile India's agricultural commodity markets have been undergoing something of a transformation, or “a quiet revolution,” as modern retail (i.e. supermarkets) has come to be a booming sector in India's many urban centres (Reardon and Minten 2011). Indeed, India's modernizing food economy is the subject of much discussion, with some claiming that it is of primary importance, arguing that ‘getting the markets right’ is linchpin to India's food security problems. Reardon and Minten (2011) argue that the “private sector, both modern and traditional, decides the food security of India” and that “[p]olicies that enable and provide encouragement to that sector to invest will decide the future of food security” (2011:iv). Of course, *how* to achieve this continues to be a divisive

issue. These strong statements made by Reardon and Minten, among many others, are indicative of the political economy of food chains and populist politics in India today. Further, a political economy approach would be wary of the assumption that capital flows and FDI, as advocated by Reardon and Minten, are the only modes capable of transforming India's agricultural sector. Claims of improving food security for farmers would be met with even greater skepticism. This advocacy for the centrality of private sector investment is akin to familiar claims that the technologies of the green revolution would solve food security issues once and for all.

*Theorizing Agricultural Commodity Markets: Back to the Ground to Actually Existing (and Informal) Markets*

Many would argue, myself included, that local rural agricultural markets have little to do with these discussions. For neglected species like small millets, this is even truer. Given this context, there has been a lot written about Indian agricultural markets, however the recent literature dealing with local traditional markets more recently is unquestionably thin. Most of the literature focuses on the institutional, more political economy-oriented issues in agricultural commodity markets, saying little about the local, informal market structure and how it works in practice. Jan and Harriss-White (2012) argue for a holistic view of markets due to “the complexity and diversity of real markets” (2012:39), employing the term “actually existing markets” (2012:39) in an attempt to *ground* discussions about agricultural production and markets back to those that produce and trade agricultural goods. They also elect to highlight the “paradox within the field of development economics: the crucial role played by commodity markets contrasts starkly with a relative dearth of studies of “real markets” in general, and of real agricultural markets in particular” (2012:39). This research answers this call.

Making the connection between the social science understandings of local agricultural markets, they argue:

While mainstream economists have tended to view markets in terms of their role in driving efficient resource allocation, real agricultural markets function in a far more complex manner and perform a wide range of other tasks critical to the processes of social reproduction and development. Real markets connect producers to consumers, town to countryside and the agrarian to the non-agrarian economy. Operating through a great variety of institutions, they function on limited information and give rise to a wide variety of social classes and power relations... The behaviour attributed to the abstract market of mainstream economics is far removed from the manner in which ‘actually existing markets’ function. (Jan and Harriss-White 2012:1)

Related to the notion of actually existing markets is the concept of *informal markets*. In the value chains for development literature, which will be reviewed further in Chapter 3, there is a generally accepted belief that interventions must be focused on bringing smallholders into modern, or formal markets. However, according to some experts, this orientation “overlooks complexity and reality” in local agricultural markets (Vorley 2013:5). Vorley argues “we need to meet farmers in their markets, and to learn how those markets work in terms of exchange and of organization” (2013:6).

#### *Embedded Markets*

The ecology of practice of actually existing markets evokes another theorization of markets. As part of his substantivist approach to economics, Karl Polanyi (1944) put forth an understanding of markets as embedded, meaning that economic relations are embedded in institutionally and historically specific social relations. This too speaks to broader discussions between economists and anthropologists on the subject of autonomy. Economists typically view individuals as self-interested and autonomous, trying to do what they can given their economic constraints and particular situation. On the other hand, “individuals do have agency, say anthropologists, but they are situated, embedded beings rather than autonomous beings who view life as a series of constrained optimization problems” (Bardhan and Ray 2008:7). This perspective leaves the door open to multiple logics in terms of economic decision-making and market participation.

But these anthropological views of markets, and market participation and motivation



need to be balanced with a more traditional economic understanding of such phenomena. Farmers are typically, but not always, risk averse. One traditional way of understanding/explaining how farmers negotiate risk is through expected utility hypothesis (EUH) (Knight 1921). Another way of understanding decision making in economic theory is through prospect theory (Kahneman and Tversky 1979), which emerged out of discontent with EUH, and is based on actual observation of behavior – or what farmers do in practice. Knightian uncertainty (Knight 1921) is a concept that differentiates between known risk and uncertain risk. This is relevant to changing agrarian economies, where farmers do not know what result this change will have on their livelihood into the future. However, the problem with suggesting that farmers do or do not participate in markets by estimating risk is that farmers generally do not cultivate millets for the purpose of sale – at least not yet. Generally, they sell the surplus subsistence crop (which can however involve risk-based decision-making). While millets are now recognized as a commercial crop, the market has not yet developed this far.

This theoretical framework may seem somewhat overloaded, drawing from political economy and the ecology of practice to understand food security, food sovereignty and sustainable livelihoods, then theorizing agricultural markets as ‘actually existing markets’ with a Polanyi approach. But when it comes down to it, this research is guided by practice, and by what people actually do. What farmers are doing – and how they are negotiating agricultural change – has huge implications on policy and development practice. It makes sense to ground discussion and ground research in practice and in observation.

Now I turn to the many contextual factors that affect how household decisions are made and in which millets-based livelihoods are embedded.

## **2.3 Context of Study**

### **2.3.1 Small Millets: A Brief Social and Political History of Underutilized and Neglected Species**

‘Small millets’ in the context of this project refers to a select group of coarse grains, including kodo millet (*Paspalum scrobiculatum*), little millet (*Panicum sumatrense*), ragi or finger millet (*Eleusine coracana*), foxtail millet (*Setaria italica*), proso millet (*Panicum miliaceum*), barnyard millet (*Echinochloa colona*). This study also encapsulates a set of small millets associated crops (SMAC), such as horse gram (*Dolichos biflorus*), field bean (*Dolichos lablab*) and niger (*Guizotia abyssinica*), among others (Karthikeyan et al 2010). ‘Small millets’, or often ‘minor millets’, is in reference to the crops’ collective status as a neglected and underutilized species (NUS).

Milletts have long been cultivated in select regions of South Asia and Africa, and are especially important in rainfed agricultural systems, for their drought tolerance and other qualities, such as their ability to withstand high heat. Milletts are suited just fine to dry, skeletal soils, and can survive in a range of conditions, which means they are well suited for dryland, or rainfed, agricultural areas. And, as rainfed agriculture constitutes nearly 60 percent of the total arable land in India (Deccan Development Society, *undated*), the importance of these crops nation-wide is not difficult to comprehend. The cultivation of the many millet varieties, including the local landraces of those varieties listed above, is an important contributor to regional and national agro-biodiversity.

The nutritional qualities of millets are also well known, with high levels of protein, iron, minerals and crude fiber (Beghel et al 1985; DDS, *undated*; Hegde and Chandra 2005). Their nutritional content is certainly greater than rice, India’s preferred food grain crop. Milletts can be prepared in a variety of ways. They can be processed, boiled and eaten much like rice, ground into a flour and prepared as *ambali* (a type of porridge), fried in pieces or balls, or made into roti and other snacks (Vidyavati et al 2004).

For these reasons, groups in rainfed regions have a long history of cultivating and consuming a variety of millet crops. As tribal farming populations inhabit much of India’s

remote and rainfed regions, their cultivation is typically associated with tribal culture and identities. As such, millets are known and often referred to as ‘indigenous crops.’ The groups that cultivate and consume millets are typically subsistence or semi-subsistence, tribal farmers, the majority of which are small landholders. Limited landholdings are typically also of low quality. Millets, given their ability to grow in low fertility soils, are thus important to these groups. It is, however, important to note that the histories and attitudes towards millets vary greatly by region, caste and tribal group – and, important to this research, that these attitudes have changed and continue to change.

### *Decline and Neglected Species*

In spite of their cultural significance and attractive qualities, these coarse grains have, on a national level, been on the decline for some decades. The total cultivated area for millets in India has declined by more than 40 per cent over the last half-century, while their overall consumption has been cut nearly in half (Deaton and Dreze 2009; Greuere 2007; Finnis 2007, 2008, 2009). Stemming from the green revolution, government support for rice and wheat set in motion a policy orientation – through agricultural research and India’s Public Distribution System – of neglecting alternative crops, like millets, that have long been cultivated and consumed by tribal groups in remote rural areas (Bourgeois 2006; Otsuka 2000). This neglect contributed in important ways to the increased cultivation of cash crops (such as cassava, cotton and coffee) over nutritious coarse grains with subsistence value (Greuere 2007; Finnis 2007, 2008, 2009).

Given these histories, neglected and underutilized species (NUS) such as small millets face significant challenges in terms of their marketing and promotion. But why is it so important to analyze and promote markets for NUS? Nill and Boehnert (2006), among others, argue that the best way to preserve such species is to create a tangible value, or, simply, “to create and maintain a market value for them” (2006:1). Further, Guidlani (2007) argues that

NUS have an unexploited potential in the livelihoods of the rural poor through their increased production and marketing. She argues that the household use and marketing of NUS hold great potential to enhance livelihood opportunities among market participants. Guidlani's analysis also demonstrates a strong link between the conservation of NUS and their use (i.e. consumption) at the household level. However, my research demonstrates that this is not necessarily the case. The centrality of market value and as a form of exchange should not be assumed; establishing and maintaining market value should not be taken as a guarantee to their preservation or their household use.

The reasons for the decline in millet cultivation and consumption cannot be attributed to one policy or program, but rather, to decades of agricultural, social, and political change seen in India. What follows is a brief political economic and social history of agriculture in the Indian context.

### **2.3.2 Political Economic and Institutional Factors**

#### **2.3.2.1 A History of Indian Agriculture and Development**

##### *Origins of India's Green Revolution*

India is a nation ripe with contrasts. In spite of two decades of rapid economic growth and an emerging economic superpower status, India's food and nutritional security situation is still cause for concern. India has a long history of struggling to feed its large population, which can be traced back to the drought-ridden years following the nation's 1947 independence, and among other factors even further back still through the colonial period. Combined with a rapidly growing population, this set in motion a trend of widespread food shortages, famine, and a consistent dependence on food aid from other countries that continued into the late 20<sup>th</sup> century (Singh 2001). Rooted in a resurgence of Malthusian fears, the 'green revolution' emerged as the answer to India's food deficit. By means of government and international support for research and innovation in the development of high-yield

varieties of rice and wheat, the green revolution increased India's food production manifold (Griffin 1974; Singh 2001; Brooks 2005).

This period was one of massive government support and research for superior wheat and rice varieties, combined with investments in new technology and infrastructure (Singh 2001). The world watched as what has been characterized as an Indian nationalist project saw a country with insufficient food production quickly become one successful in largely eliminating the threat of famine (Khilnani 1997). The green revolution has been touted as one of the greatest technological achievements of all time, saving the lives of millions from starvation and kick-starting the Indian economy, which would continue to grow years later into emerging economy status (Singh 2001; Harris-White and Harris 2007).

#### *Drawbacks*

Without doubt, the green revolution can be considered one of the most, if not *the* most, influential agricultural policy orientation in South Asia, and in the rest of the developing world in the latter half of the 20th century. While undoubtedly successful in rapidly swelling India's food production capacity, and nearly eliminating famine and in a mere couple of decades, India's energy intensive agricultural industrialization strategy has yet to be considered successful in providing the majority of those that are impoverished with the daily nutritional intake that they need to be food secure (Ali et al 2005; Bourgeois 2006; Deaton and Dreze 2009). Griffin (1974), highly critical of the green revolution since the early 1970s, argued that green revolution policies were not amending the effects of hunger and food insecurity, but actually making them worse among select groups.

First, the green revolution did not succeed in ensuring food security outside of success regions and in the most remote rural areas; nation-wide policies neglected marginal areas (Otsuka 2000:448). Some scholars contend that smallholder farmers were excluded from the technological investments and innovations characteristic of the green revolution era due to

the fact that these innovations were not scale-neutral; technology such as tractors exhibit economies of scale in their use (Gidwani 2007:150). Moreover, new agricultural technology required investments that marginal farmers were simply unable to make on their own and due to lack of government support seen in other areas (Griffin 1974). The issue of scale neutrality of green revolution investments is, however, difficult to ascertain and has been cause for much debate (Birner and Resnick 2011; Gulati 1989; Singh 2004).

Determining to what extent government support for agriculture since the green revolution has had on rural poverty reduction, and on smallholder farmers in India, is a supremely difficult task. There has been, nonetheless, interest among economists and development specialists to assess the impact that improved agricultural productivity has had on pro-poor growth in India and other developing countries.

The motivation for enacting agricultural policy and producer support in this way is based upon the assumption that smallholders with higher incidence of poverty are especially affected by greater degrees of market failure (OECD 2006). Direct benefits from government to lessen market failure can come in the form of supports such as input subsidies, whereas indirect benefits that may affect producers include roads and infrastructure (Fan et al 2000). Certainly, in the case of India, the explicit *political* focus on smallholders in launching the green revolution and associated policy toolkit is well documented, even though, as stated above, such outcomes have not been proven clearly to be in favour of those groups (Birner and Resnick 2010:1443). While support for farmers comes from those of all political stripes, one thread runs through them all; that is, the need to ‘fix’ ‘backward’ agriculture.

Importantly, this notion of market failure also acts as an opener to other forms of market failure, such as asymmetries in the market. Market asymmetries may include asymmetry in information or power, which could be based on caste, class, or gender, or asymmetries in transaction cost (Coase 1937; Williamson 1981). For example, information

asymmetries may also be divided by gender at the household level: depending on the power in terms of access to information and decision-making in the household, men and women may make different decisions in terms of cultivating certain crops for household consumption versus for market exchange. The flows of information (such as prices or market conditions) could potentially impact the flow of millets in the local market place. Similarly, an assumption could be made that if smallholders were aware of the value that their crops captured near the end of the chain – which is information held by traders – they may actually increase their cultivated area for millets, or pay closer attention to practices and yield.

Second, the support for rice and wheat in green revolution research and investments resulted in a relative marginalization of alternative crops, such as small millets, that had long been cultivated and consumed by indigenous and marginal groups in remote rural areas (Bourgeois 2004; Otsuka 2000). This policy orientation led to a decrease in the cultivation of these alternative crops in the ‘preferred’ selected areas. Harris-White and Harris argue that the green revolution was not as successful as supporters conceived, precisely because its results were “blunted by rural inequality” (Harris-White and Harris 2007:13).

#### *Indian Nationalism, Populist Politics and Reform*

The captivating tale that is India’s national political history – the struggle for independence, failed experiments in socialism, ever-competing nationalisms, and a continuance of political struggles in the post-reform era – lays the backbone for understanding not only the Government of India’s policy disposition and changes in tide, but also for those left out of these histories (Corbridge and Harriss 2003; Dirks 2003; Kohli 2012). India, known to be the birthplace of the green revolution, continues to capture the world’s attention as a regional and global reference point for agrarian change. From India’s flirtations with socialism, experiments with import substitution industrialization, and its many

Development Plans, the nation's need for a strategy for agricultural sector development has remained a constant thread in development discourse in past decades.

India's progress in agricultural modernization was impressive. Beginning in the early 1990s, the Indian government began a process of deregulation, decreased government intervention, and liberalization (Chand 2009; Panda and Ganesh-Kumar 2009). Although many of these measures were not aimed specifically at the agricultural sector, this period brought with it a movement for the decrease in agricultural subsidies to create a bigger role for the private sector (Panda and Ganesh-Kumar 2009). But this evolution has left behind a huge proportion of India's poor, and has also had a large role in shaping the state of the agricultural sector today. Stemming from the widespread debates over who benefited from the green revolution, and who was left behind, the voices present in the literature are at odds in terms of what to make of India's agricultural sector today (Ninan and Chandrashedar 1993).

#### **2.2.2.2 Socio-cultural Factors: Caste, Class, Gender and Adivasi Identity**

The preceding institutional approach points out the ways in which political and economic change in agriculture eroded support for, and interest in, millets, and, in turn, affected the diets and nutritional situation of select groups (Ali et al 2005). But it would be inaccurate to place the decline in millet on entirely exogenous institutional factors, and employing such a narrow approach would be to miss out on much of what is happening in this context. Beyond the macro political economic and institutional change environment are what are usually understood as the more local and contextual practices that happen on the ground. In the Indian context, caste and tribal identity, class and gender all contribute to the richness of this case study. The classic anthropological literature that deals with intersections of caste, class, gender and Adivasi identity in theoretical and ethnographic accounts is essential to this research. To borrow a clichéd phrase from Fuller (1996), India's "continuity



and change” applies not only to the legacy of the caste system, but the complex intersections of social dynamics with broader political economic effects of agrarian change.

Departing from within this context of agrarian change, we can see how cultivation and consumption decisions have changed among tribal farmers. The goal here is to move “beyond examining the loss of millets from a nutritional and dietary diversity perspective, [so] we can also examine their shifting symbolic and practical positions vis-à-vis local experiences of identity and development” (Finnis 2008:469). This approach creates additional space for investigation into how the identities, local experiences and symbolic positions of millet have shifted over the course of their decline. Analytically privileging socio-cultural context is a central tenet of the ecology of practice (Nyerges 1997).

### *Caste*

As tribal farming groups replace small millet varieties with white rice as a staple in their diets, some argue that this shift in practice speaks not only of the nutrition and health-related effects, but also carries implications for the cultural and symbolic understanding of the grains themselves. In choosing rice – which has long had associations as a higher-caste food – over indigenous millets, some argue that the decline in millet consumption can be understood as a very specific form of social change, known as ‘*sanskritization*’ (Finnis 2008:469; Srinivas 1989). Sanskritization is a process in which lower-caste groups emulate higher-caste norms, in practices such as food choice. The availability of rice has not only made it possible to participate in this emulation project, but, in the process of passing over coarse grains for rice, these tribal groups are in effect continuing to place upon them a negative, ‘food of the poor’ status, further marginalizing their value (Bourgeois 2006). In this way, aspiring to rice consumption is a way of symbolically affirming a more modern identity.

In spite of laws in place which have made it illegal to discriminate based on caste, accompanied by the introduction of government programs to protect and provide services for

Scheduled Castes and Tribes, caste-based discrimination is still a fact of life in India (Bennet 2005; Mosse 2005). Importantly, in rural areas, caste-based discrimination continues to influence farming practice and market relations (Rankin 2004; Mosse 2005). An overwhelming majority of scheduled castes and tribes remain disadvantaged by a lack of educational opportunities (Bennet 2005).

Understanding caste in modern India requires looking back. Much of the thinking on caste originates in what can be referred to as a ‘modernist’ perspective of caste, which has its roots in a specific reading of caste as *varna*, derived from Hindu classic texts (Dumont 1970; Srinivasulu 2002). This understanding of caste is predicated on the idea that caste is in fact a *pre-modern* institution. Such a modernist view of caste assumes caste as a pre-modern tradition that could be left behind with economic growth and state modernization efforts. Other scholars argue, however, that India’s nationalist and modernist project has not resulted in the decreased importance of caste; in fact, caste has played an important role in the history and development of modern state institutions and new democracy on multiple levels (Chatterjee 1993; Gupta 1998; Rudolph and Rudolph 1967; Srinivasalu 2002:3).

This nuanced understanding of caste in effect leaves behind the more classical *varna* system of caste hierarchy. Understanding that caste relations have changed and continue to do so is crucial. While caste-based discrimination is, according to some, not as important today as caste-based identity and social organization, caste relations were kept at the forefront of this research as an important component of the ecology of practice. Caste identity and tribal membership do have implications for market participation, roles, and opportunities, as will be discussed in the market analysis and description of Chapter 5.

### *Class*

Issues of caste and class are deeply interrelated; however, Rankin (2004) argues that socio-cultural explanations for inequality such as caste-based discrimination can take the

focus away from other class-based, or political and economic, factors of inequality (2004:30). This is not to discount the very real, caste- and tribal-based forms of discrimination that weigh on India's history, and which continue in the region today. However, it would be problematic to assert that the structures of inequality and exclusion that exist today can be explained using the tenets of 'culture' alone.

Of course, the primary, and classic, indicator of class goes back to land ownership. A term commonly used in government discourse and development practice, 'marginal farmers' seeks to describe those who are 'farming yet hungry', and often refers to those farmers with land holdings of less than 0.5-2.0 hectares of land (Tekade and Jambhulkar 2011; 2002). As subsistence farmers, agricultural production comprises the majority of economic activity and source of income for these groups, yet landholdings can be unsustainably small and unproductive in relative terms. The result is that these groups often rely on less than subsistence level production, placing them in situations of food insecurity, but which are supplemented by government support schemes. Often located long distances away from major city centres, this remoteness means poor access to external markets, limiting opportunity for extra economic activities outside of the internal staples and services market (Tekade and Jambhulkar 2011).

In addition to caste associations, there are also class-based social status attachments to the production of millet that have attributed to its decline. The drudgery of planting, harvesting and processing these crops is a defining characteristic. Women, who typically do much of the fieldwork, have an interest in decreasing their workload by switching over to less labour intensive cash crops (Finnis 2009). Women, in remote regions of Tamil Nadu, in part attribute their desire to stop cultivating millets in favour of cash crops to the desire for more time for socializing – and so they can earn cash income to spend on consumer goods like televisions (Finnis 2009:91). Together, these understandings and practices surrounding cash

crop production and “millet consumption speak to farmers' broader aspirations to become more like people living in the lowlands, both in terms of economic and dietary practices” (Finnis 2008:469).

Meanwhile, while we can see that there are patterns associated with upper caste and class emulation, this is not to say that all tribal farmers are satisfied with the relative disappearance of millets from their diets. Many describe millet as tastier and more filling than rice, and their nutritional benefits are well known among tribal farmers. This is documented in my research. These contradictions are useful and cannot be ignored when trying to account for the millet decline in many areas (Finnis 2009). Indeed, this dual association of millets in terms of nutrition and food status is an important dimension in understanding the crop at present (Finnis 2009:92).

The trends attributed to declining millet consumption are further complicated by the fact that wealthy, upper class and caste consumers in urban centres are eating growing amounts of millet (Finnis 2008). Increasingly, millet is marketed and prescribed as an effective means for managing obesity and Type 2 diabetes (Beghel et al 1985; Hegde and Chandra 2005). The contradictions are evident, as “[t]his signals dissonance in perceptions of millets and status between tribal farmers and upscale consumers, in that farmers continue to associate millets with lower economic status” (Finnis 2008:482).

### *Gender*

An exploration into the lives of women in rural India quickly uncovers the ways in which gender inequity and exclusion are not only prevalent, but compounded by a disproportionate occurrence of poverty. Indeed, in raising the complexities of gender inequity – such as intersections with caste and class – we learn much about practice. But before going further, it is essential to point out early in this discussion that India itself is a nation that is culturally rich and vastly diverse. The point that cultural traditions, religious customs, caste

relations and political economic context vary greatly across and within states cannot be emphasized enough.

There is a long list of ways in which women's rights, opportunities, and access to essential services are impeded. Women do much of the most typically backbreaking agricultural work, while at once taking the responsibility for child rearing and household activities. Women's voices are muted when it comes to spending decisions at the household level, which contributes to the well-documented phenomenon of husbands spending family-earned wages on alcohol consumption (Chowdhry 2011). Important is the gender dynamic of power structures within the household, explaining that these values and attitudes are derived from, and serve to reinforce, a persistent gender hierarchy across rural India (Chowdhry 2011). Gender relations are neither static nor uniform (Agarwal 1994:51); further, these complexities and contradictions vary greatly by region and are not constant in time and space (Chowdhry 2011).

A discussion about the experiences of rural women would not be complete without fleshing out the importance of agriculture, and how it is that agriculture produces and reproduces gendered power structures. India's agricultural landscape, so to speak, has undergone a massive transformation in the last half-decade (Chowdhry 2011). The effects of India's green revolution are most certainly felt differently by men and women (Agarwal 1994; Chowdhry 2011). There are multiple factors contributing to this increased exploitation of female labour, and this trend is often referred to as the 'feminization of agriculture' (Agarwal 1994, 2010, Chowdhry 2011; Gartaula 2011; Vepa 2010). This process has been a central component of the agricultural transformation that has taken place in India. The feminization of agriculture is often initially attributed to increased male out-migration in search of higher paying work in urban centres. The result is one of low net remittances being

sent home while the women are left with the double burden of the farm and care for children on their own (Gartaula 2011; Vepa 2010:29).

While such trends associated with the feminization of agriculture are well documented in many parts of rural India, it is important to qualify here that the levels of outmigration by males in the household evident in other parts of South Asia are not present in the Araku Valley region. Finally, women in Adivasi, or tribal, culture are known to have more autonomy in decision-making at the household level. While Adivasi women do maintain relative autonomy, there is still a cultural, or at least public, deference to the male head of household. On more than one occasion during fieldwork, when speaking with groups of women, they would say as the men were walking into the village, “The men are coming they can tell you.”

#### *Adivasi Identity*

While inseparable from the sociocultural dimensions of caste, class and gender, central to this study is the tribal farming context. Indigenous communities across India are known as Adivasis, or simply ‘tribals.’ Adivasi means ‘original inhabitant’ and the term carries a loaded history of marginal survival and state ignorance. Traditionally forest dwelling peoples, today tribal populations in interior regions around India now rely on mixed livelihoods of agriculture, collection of forest products and other activities such as NREGA work or other labour. The reasons for this change are complex, but deforestation and the rise of commercial agriculture in these remote areas are two interrelated reasons for this (Ambinakudige 2011).

This is a prime example of the inseparability of sociocultural and institutional context. Taking an institutional approach, Ambinakudige (2011) argues that Adivasis’ livelihoods opportunities have been threatened by state policy, legislation and the influence of other non-governmental organizations. Legislation concerning the lands of Adivasis in present-day

Andhra Pradesh dates back to as early as 1839, where commonly used terms like ‘Scheduled Tribe’ and ‘Agency area’ first originated (Sarma 2006). While a complete history of forest rights legislation is out of the scope of this research, it certainly plays an important role in tribal livelihoods today. The most recent Forest Rights Act (FRA) of 2006 granted legal rights of original forest dwellers, including right to land, user rights and a right toward protection and conservation (Mundoli 2011:17). The Act is also laden with contradiction, at once recognizing Adivasis as original residents, yet applying restrictions and cutoff deadlines for the application of the law (Sarma 2006:1436).

The tribal populations in the Araku Valley region share many things in common with tribal populations elsewhere in India: a history of traditional forest dwelling, a growing reliance on coffee plantations and commercial agriculture such as vegetables, and the commercialization of non-timber forest products (NTFPs). Tribal farming populations are also generally known to occupy sections of forest land and practice *podu*<sup>3</sup>, or shifting agriculture, which in turn relates back to the importance of millets cropping systems for these groups.

## 2.4 Summary

This case demonstrates once again that it is impossible to separate the ‘social’ from the ‘political’ or ‘economic’ (Mosse 2006). Indeed, the social and power relations implicit in practices around millets have to be located in the broader institutional changes that stem from India’s green revolution. An ecology of practice approach “analytically privileges the sociocultural contexts in which individuals are acting, viewing these contexts as sometimes readily manipulable and sometimes highly constraining particularly when institutionalized into formalized structures, or hierarchies, or age, gender, ethnic and class relations” (Nyerges

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<sup>3</sup>*Podu* cultivation is the local term for shifting, or swidden, hilltop cultivation, often practiced by farmers who do not hold *patta* land deeds. While today millets are cultivated on both *patta* and non-*patta* land, traditionally, millets cultivation was practiced as swidden agriculture by forest dwellers in the region. Even amid the ongoing discussion around forest land rights, the association of millets cultivation with landless forest dwellers certainly plays a role in their low class status today.

1997:12). In employing such an approach "...we can examine millets in terms of everyday social meanings that necessarily *accompany* transitions in agricultural regimes" (Finnis 2008:464, italics added).

Millets in this context not only offer a window into the political economy of agricultural change, but also are useful in demonstrating the caste and class relations implicit in food meaning, choice, and identity in the Araku Valley region. And, importantly, "we also need to challenge our own notions of culture and agriculture as things apart" (Delind 2006:142). Further, I argue that it is problematic to juxtapose the institutional economic explanations for the decline in millet to the socio-cultural reasons for the decline in millet. In sewing together broad political economic structures with particular social practices lies the strength of this theoretical approach.



## Chapter 3

# Methodology

*“[Commodity systems analysis is] ...a richly promiscuous approach that helps to concretize and situate a broad range of theoretical perspectives, and that doing so makes them skeptical of determinism, more sensitive to culture, and more aware that the process we label ‘development’ are experienced, understood and valued differently from locations along the commodity chain.”*

- Collins (2007:13)

### 3.1 Introduction: A Bridging of Methods

I like to think that the design of this research was fairly straightforward: an ethnographic investigation into the local markets for small millets. While this kind of approach is somewhat unorthodox in the context of objective-driven food security and development research projects, is certainly not the first of its kind. However, putting this kind of approach into practice and, most importantly, uniting the field research with analysis and results, was where the waters started to become muddied. To start, the methodological approach taken here is really about a bridging of methods, a hybrid of social science and market chains approaches working toward food security and development objectives. While interdisciplinary in nature, this research was rooted in the anthropological method, and sought to demonstrate that the most effective way to answer the proposed research questions is through detailed ethnography.

As discussed in the previous chapter, this research was guided and informed by a broad range of theoretical work, including political economy approaches to explaining agrarian change and theorization of agro-food markets – but with a distinct focus on grounding down to practice. This project sought to spur a discussion on food security, food

sovereignty and sustainable livelihoods approaches to development, which is expanded on in later chapters. Building on this theoretical foundation, this research took an interdisciplinary approach that would draw from a variety of methodologies in what would resemble a market chain analysis while bringing in methodological components and influences from the social science-rooted understandings of agro-food systems.

Bringing this research through the analysis and writing stages and essentially ‘making sense’ of the data proved challenging. Yet I still believe that the strength in this methodology lies in this interdisciplinary approach, which aimed to be focused, yet flexible enough to take advantage of a toolkit that included experiential and ethnographic ways of knowing (Hann and Hart 2011). This study sought to create *additional* space for investigation into how the identities, local experiences and symbolic positions of millet have shifted over the course of their decline – and how non-market factors have affected the cultivation and consumption for small millets. For this reason it was essential to create space to bring in an understanding of the intersections of caste, tribal identity, class, and gender. Since the ways of uncovering those social realities involves a focus on daily practice, keeping the ecology of practice at the forefront of investigation was central (Nyerges 1997).

The final output of this project was meant to be, and is, a qualitative study of the market functions and sociopolitical factors that affect decision-making and relationships among actors in the form of a multi-sited ethnography (Marcus 1995). Methodologically speaking, this design allowed me to be open to new narratives, to follow stories that I hadn’t anticipated – and this flexibility allowed me to look up from my focus on markets and see what is really going on in the case study area in terms of millets-based livelihoods.

This chapter serves two purposes. The first is to reflect on my initial research plan, how I adapted it in the field, and what my motivations were in changing the course of the research. Orienting this chapter is that question of what happens when you combine social

science and market chains methodologies: Is the combination productive? Is it useful? This includes explaining how, and why, this somewhat narrow focus on markets transformed into narrative of agrarian change. The second purpose of this chapter is to explain what I actually accomplished in the field and how I accomplished it.

### **3.2 Methodology and Initial Research Design**

#### *Why Study Markets?*

To understand the life of a food grains crop one must have an understanding of the markets it flows through. But to fully understand the motivation to focus on agro-food markets held by researchers and development practitioners, like the RESMISA project stakeholders, this type of study should first be contextualized within the broader motivation and study of the markets for food grains crops and other agricultural products. As touched upon in the previous chapter, there has long been an interest in agricultural commodity chains from nearly every corner of academia. This study of markets ranges from the traditional market chains analysis and/or development of agribusiness schools, to studies for pro-poor market intervention undertaken by NGOs or other development institutions, all the way to sociological and anthropological studies of food, agriculture, and the geographies of agro-food commodity chains. Given this breadth of interest, the literature dealing with methodology – and differing opinions on how best to approach these various types of chain analysis – is equally as rich.

#### **3.2.1 Value Chains Research for Development**

An interest in value chains analysis emerged as an interest by many development organizations and others in the late 1990s – largely as a means of attempting to answer questions such as who was benefiting, or losing from globalization (Kaplinsky 2004). Even with the ebb and flow of trends and best practice in development, it seems that this interest in value chains work for smallholder agriculture (or poverty reduction, income generation, food

security, or whatever the preferred objective of the day) has not cooled. In fact, IDRC's CIFSRF, the funder of this research, today has a distinct orientation on food markets in its funding objectives. This issue will be taken up in depth in later sections.

Conducting a value chain analysis is the first step in the process of value chains-focused development projects, and value chain *interventions* include activities that generally aim to transform either the vertical linkage among actors in a value chain or horizontal cooperation among actors (Wills 2008). My project never intended to carry out any such interventions. As a research project relatively small in scale and scope, this research was intended to potentially contribute to future projects (if there were to be a second phase of the RESMISA project) and to simply contribute to our understandings of local markets for small millets in the case study area and beyond.

The body of literature dealing with value chain analysis for development generally seems to fall within two general groups. The first group is comprised of toolkits and methodologies published by development organizations or donor country development agencies, which also can be classified into different groups. Some are objective-driven and competitiveness focused, and provide a methodology from which analysts can conduct a value chain analysis (Bellù 2013; Hellin and Meijer 2006; Kaplinsky and Morris, *undated*; Shepard 2007). Others place more emphasis on pro-poor and participatory practices (Bammann 2007; Lundy et al 2007; M4P 2008; Wiggins and Keats 2013; United Nations 2009, 2011), and some place specific attention on gender (DANIDA 2010-2; Mayoux and Mackie 2007; USAID *undated*), while others still add another layer of complexity to this mix, such as a focus on sustainable livelihoods and biodiversity (Will 2008). Along with the rise in participatory development projects, participatory value chain analysis has too become part of this landscape.

The second group of literature is comprised mostly of studies that have employed a value chain analysis within the context of a development and/or academic research projects. Daniel and Dudhade (*undated*) provide a study on underutilized fruits in India. Carrier and Gezon (2009), Gezon et al (2005) and Gezon (2010) provide interesting lessons on the insights to be gained from the use of commodity chains analysis. Gruere et al (2007a, 2007b) provide an especially relevant and interesting account of a value chains development project focusing on small millets in South India, conducted by the MSSRF (which is an organization that has also attracted CIFSRF funding). The lessons of this MSSRF research will be revisited in later chapters.

#### *Food security, livelihoods and chain analyses*

How do food security and sustainable livelihoods objectives fit into value chain analysis (VCA)? The World Food Programme identifies the three main pillars of value chains analysis (production, processing, and marketing) as directly applicable to food security analysis:

In summary, VCA is useful for food security and vulnerability analysis because *it helps to determine whether the market system – through which households sell their surplus food commodities, and through which they access basic staples and production inputs – is competitive, efficient and reliable*. It fits into the food security framework, insofar as it helps to determine the marketing constraints and opportunities for households as buyers and sellers.

(World Food Programme 2010:5, italics in original)

And further to this “[a] central concern of VCA is to “unpack” the relationships between lead actors (i.e. those with power) and others – and the opportunities and constraints that result from entering such relationships.” (World Food Programme 2010:6). This concern is compatible with the political economy orientations of this project.

#### *The Need for Flexibility*

To summarize, the overall challenge in selecting a specific methodology or toolkit from those outlined above rested on the fact that this project in particular sought to be

inclusive of food security, sustainable livelihoods, pro-poor and participatory, biodiversity, *and* gender-sensitive methodologies rather than prioritizing one over another. Finding the perfect guidebook for value chains analysis is like having a set of rules or guide book for doing ethnography: no set of tools will ever include everything a given researcher requires. And, above all, flexibility in methodology provides more advantages than does following rigid guidelines. For these reasons, I employed a hybrid of the toolkits and methodologies briefly outlined above. While quite similar in nature, in terms of step-by-step and areas of inquiry, the consistency between them is the importance of starting out with and maintaining well-defined *objectives* throughout the chain analysis that are specific to the given project. Reflecting on this, I now realize just how important clearly defined objectives are. The objectives guiding my own research and the RESMISA project were, and are, lined with a certain level of contradiction. These theoretically complementary, but in practice competing, objectives continued to come up throughout the research and during analysis stages. This too will be discussed more as the story unfolds, and points directly to the need to bring in other approaches to complement a traditional, theoretically neutral, value chains approach.

### **3.2.2 Social Sciences Sensibilities**

Moving away slightly from the results-oriented approach offered by the value chains analysis literature, commodity systems analysis (CSA) (Friedland 1984, 2001) provides an additional way by which social scientists have studied food commodity and agro-food systems in an era of globalization. In reaching out to the social science-oriented modes of commodity chain analysis, it becomes clear that such an approach opens up new areas of discussion and analysis not accessible by traditional value chains analysis. Commodity systems analysis in a way moves away from classical economic models that might “ignore the *embeddedness* of markets in broader historically situated political and social systems, including production and consumption” (Ribot 1998:16, italics added). At the same time, we

must recognize that markets are also embedded within *local* social relations. Maintaining alternative sensitivities, including the potential for market participants to possess alternative meanings of millets and markets, was important to this investigation. As an influencer of, and influenced by, studies of the sociology of agriculture, commodity systems analysis is an approach that provides useful points of inquiry. It allows for “the potential for situated, contingent accounts of global political economy that are historically specific, sensitive to culture and meaning, and attentive to subaltern perspectives” (Collins 2007:13).

To place CSA within broader social science methods, it is an approach that certainly draws from the work of Appadurai (1986) who has argued that we must understand “the social life of things” if we are to understand market processes. Markets, like any socially constructed object of inquiry, are always changing. They are inherently fluid and dynamic; the factors and forces that are influencing this constant change are, too, in a constant state of flux. Indeed, Whatmore and Thorne (1997) argue that agro-food networks are deeply relational, situated, and partial. This research confirms that the web of social relations, including caste and tribal social relations, are not constant. Nor are government policy and other institutional factors, especially in India where highly populist politics often results in dramatic and sudden changes in policy orientation.

When thinking about these many changing layers and their interactions with one another, it is again useful to ground down to practice by reaching to the ecology of practice framework. In the end, I used CSA as more of a sensibility than central methodology. In this case, recent changes in climate and also social emulation were key examples of non-tangible factors that affected livelihood decisions like market participation. This, too, opened the door to admitting the relevance of things that may not be important or visible within a traditional value chain analysis framework. Now, I realize that there is, and ought to be, space for these

kinds of approaches. Making these connections is a valuable and necessary pursuit, in the social sciences or otherwise.

### **3.2.3 Multi-sited ethnography**

Through participant observation along the different nodes of the market chain, I became familiar with the day-to-day activities and also the changing landscapes of small millet production, consumption and marketing in Araku Valley. Much like the interest in value chain analysis and commodity systems approaches, the desire to ‘ground’ globalization has also spurred multi-sited research (Falzon 2009; Friedburg 2001; Marcus 1998). The challenges of doing ethnography on a multi-sited project are well known (Marcus 1995; Friedburg 2001; Gezon 2010). Friedburg (2001) and Marcus (1998) too stress the importance of clear analytical framework and objectives so as not to get bogged down in an excess of data. But the benefits, according to Friedburg, can outweigh the costs, as multi-sited research in the context of agro-food chains can allow the researcher to see things not visible through single-sited research, nor through a purely macro, political economic focus. Once again, this framework creates space for the ecology of practice and seeing what is done in practice.

#### *Further Remarks on Methodology*

For some, this methodological approach might come across as silly: how important is it to emphasize that social science sensibilities can build upon a traditional value chain analysis? For others, it might just seem obvious: of course it is useful to include other perspectives when considering complex objectives that have real world implications. While market chain analysis is useful insofar as it holds the ability to understand ‘blockages’ in the markets for millets, bringing in these other perspectives allowed for an opportunity to understand *why* these changes have occurred, and why they may have occurred in response to specific political and institutional, or cultural contextual factors. Seeking to understand *why*



there has been a decline in millet cultivation and consumption, along with the local meanings and understandings that come along with these changes, resulted in an interesting and engaging case study of political economic and agrarian change in this context.

Understanding the regional linkages and disjunctures of small millets requires a multi-sited examination of the nodes along the value chain in order to understand the opportunities and barriers at each level – and how the markets for small millets are changing. Interrogating issues relating to the political economic and historical contexts of cultivation, trade, and consumption of millets, while creating space for local cultural context and individual agency, allowed for a nuanced understanding of why small millets markets are changing, how farmers are reacting to said changes, while at the same time revealing how groups in particular tribal regions survive on the margins of agrarian development (Gezon 2010). In incorporating the political economic, historical and cultural dimensions of millet, this project was designed to provide an engaging case study of the often-contradictory relationships between livelihoods, food security, and market relations. This research also aims to demonstrate how a holistic study of an agricultural commodity within local markets can show its complex contexts and how they are used by people, in everyday practice (Gezon 2010).

### **3.3 Research Plan and Methods**

#### *What I Actually Did and How I Did it*

Now that I have laid the foundations of my methodological approach, I can move on to what I *actually* did and how things changed while in the field. Over the course of this research, I enjoyed these shifts in focus, writing and rewriting my research questions, expanding my field site, and, overall, the process of broadening my scope, learning more, and taking in new points of view. Now I realize that this shift away from the focus on markets is symbolic of my overall findings: that there is more to the story behind millets than what happens, or will happen, in the markets alone.

The first stage of my research began with a literature and methodological review, which are detailed in previous sections. This also included a review of the RESMISA project documents and baseline survey data reports. Upon my arrival to India, I was able to meet with WASSAN staff (in both Hyderabad and in Visakhapatnam) who welcomed me and helped me with the initial stages of foreigner registration and visa extension. I attended a RESMISA project meeting in Visakhapatnam as well as a field visit to the Araku Valley region with project partners. When the bus went back to Visakhapatnam, I stayed behind with my translator, local project staff, thesis advisor and others.

This is how my field research began in September 2013. I spent three and a half months conducting research in the RESMISA project's 'Dumbriguda' site. There, I lived in a rented house with my Telugu-speaking translator in Araku Valley, the region's largest village-cum-town and also (thanks to the region's lush, rolling hills and refreshingly higher altitude) domestic tourist destination. Due to the safety concerns of two young women living alone in a more remote village, it was decided that staying in a larger centre was the best option. Naxalite (also known as Maoist, or radical leftist) groups are active in the region, which was another important reason to be in a bigger centre after daylight hours. While there has been little reported violence or incidents in recent years in this particular region, and the fact that Naxalite groups are located mostly in the very interior villages ("they live in the forest"), this was a necessary precaution – and local police enforced our lodging in Araku Valley.

### *Language*

While I had previously visited India, I had not previously visited this region, nor do I speak the local language of Telugu (let alone any of the many local tribal languages). Upon arrival, as we were beginning to forge relationships, I made an effort to learn at least the most basic Telugu to get around on a day-to-day basis. While English is widely spoken across

India, very little English is spoken in this region. In fact, there were only a small handful of English speakers in Araku Valley, and none of them were farmers.

### *Pre-fieldwork*

Building on the basic knowledge of the Araku Valley area provided by local project partners, the baseline survey data, and previous field visits by Canadian partners, I began the process of pre-fieldwork. This simply meant familiarizing myself with the surroundings, locating local markets, and preliminarily identifying key market actors. At this stage, I was not conducting interviews, but rather attempting to get an overall sense of what was going on in the research area. The first step here was to locate and visit the weekly markets (*santhas*) and identify specific villages for further study along with colleagues from our local partner organization. Araku (not to be confused with Araku Valley) is the next village over with a weekly Friday *santha*, and is itself located in the Dumbriguda mandal.

#### **3.3.1 Defining the Field**

The practicalities of accommodation aside, outlining the literal and figurative boundaries of my field site are where things become a little more complicated. Anthropologists often struggle in ‘defining the field,’ given that social boundaries do not often translate into obvious physical boundaries. Earlier I alluded to a concern about living in the main village as I thought this would mean a lesser degree of ethnographic closeness. In fact, in the end, my living outside of the more remote villages did not at all mean that I was residing ‘outside’ of the field. This was in the end actually the perfect station, as our neighbours and the families we came to know in town were those that connected us to many of my lead informants.

In the end, my study took place across multiple mandals and villages. From there, this ethnographic research was conducted in three groups of sites, or nodes. The first node focused on the weekly markets. This involved talking to traders to get at what is going on the

market. The second node was the institutional environment. This involved talking to government officials: the agricultural department, forest department, Integrated Tribal Development Agency, the PDS and other nutritional centres, to see what kind of policy factors and schemes have been impacting small millets cultivation and consumption in the local area. And finally, the third node took place in villages themselves. This involved talking to farmers, and spending time in villages. The intention here was to see what farmers are growing (and how much), eating, (and how much), and really just seeing what they do in practice, everyday – rather than what they say they do. This ethnographic richness was important, and spending this much time in villages actually had some important impacts on what I found out about the markets for small millets, which I will pick up on later.

### *1. Weekly Markets (santhas)*

Visiting the weekly markets was my first action in mapping out the local market chain. The weekly markets occur in Araku village on Fridays, and millet farmers primarily bring millets to market between September and February – opportunely timed for my research. This weekly market was intended as the launching point for my investigation, and as it turned out, was actually the first place I visited when I entered the field.

In the Araku market we began by identifying, meeting and speaking informally with traders at the market – identifying key actors and informants, building rapport, and asking preliminary questions. Because it was not yet the season when we arrived, there was only a handful of traders to identify and get to know which made things more manageable to start.

### *Changing, Expanding*

Next, I had to find out where all of the other regional markets were, and quickly found out that they were located in the nearby villages of Sunkarmetta, Kinchumanda and Hukumpeta. Though my research question focused on the Dumbriguda mandal specifically, I found that the local marketing system for food items and other goods in fact sprawls over

multiple mandals in the area, and encompasses a much greater space. These four weekly markets in a sense function as a greater whole, evidenced by the fact that most of the traders visit each of these four markets on a weekly basis. These markets are the nodal points of an informal market for food grains, forest products, vegetables, livestock, and some seeds, but also household goods, clothing and other items. I was quick to learn that the political boundaries didn't mean much in the day-to-day activities of local markets, and that Dumbriguda itself would not alone be an appropriate area for my study.

After these initial interactions with traders, and others, and informal conversations about small millets, it became clear that not only was my pre-determined field site too narrow, but so was my focus on millets. I went from a purely millets focused orientation to asking about other crops. Most traders trade millets, other grains and often vegetables, which makes contextualizing millets in the larger picture of other agricultural and non-timber forest products (NRFPs) much easier. In fact, most traders shrugged their shoulders when we asked questions specifically about millets, or the future of millets trading, saying they would just find something else to buy/sell. All of these factors combined, I discovered quickly that the scope of the questions present in my instruments was actually quite narrow, and that a lot of my questions were answered quite quickly. This allowed me to go further, which involved a complete overhaul of my interview questions early on in my field stay.

There are a number of other changes that I made to my research design as I adapted to the local context. For one, I had planned to hold key stakeholder focus groups with traders, suppliers (farmers), and consumers (regional distributors and beyond). This is a fairly important shift from the original research plan. I did not conduct any focus group discussions with traders the way I had originally planned. Not only was this near impossible (to coordinate a fragmented group of busy, competing actors) but I also felt that the data I was collecting from one-on-one interviews were sufficient. Upon reflection, I am not convinced

that these same discussions in a group setting would have resulted in other, new findings. I had planned to have the group produce a preliminary value chain map for the markets for small millets, and in the end pieced it together with the questions that I asked traders (along with farmers and government officials) individually.

Beyond the local area, I made only one visit to organic farmers' bazaars in Visakhapatnam. As I got to know the market and themes were emerging from my data, I felt it less important to visit the later stages of the market, which I will discuss more in later chapters.

My informants in this first node were primarily traders. This captures all levels present at the local level: village level traders, *santha* traders, wholesalers, and farmers-cum-traders who take grains to the farmers' bazaar in Vizag. We also interviewed tribal traders in the region, women in the market (who typically sell pulses and vegetables) and one female trader (a rarity in a male-dominated sector). Traders acted as a resource not only for the market aspect but also the answer questions more broadly about changes in cultivation and consumption practices in the local area. And their perceptions of tribal farmers were also particularly useful for contextualizing attitudes around caste and class in the market.

In total, I conducted ten formal interviews with traders, along with months of informal discussion that informed my research questions.

## *2. Local Institutions*

The institutional node is somewhat easier to describe. I conducted interviews with multiple staff persons from the Girijan Cooperative Company, the Agricultural Department, the Forest Department, the Integrated Child Development Scheme (ICDS), Integrated Tribal Development Agency (ITDA) and a tribal training organization/coffee plantation, and one interview with a staff person from a local partner organization. The objective behind speaking with government and non-governmental actors was to see what kind of policy

factors and schemes have been impacting small millets cultivation and consumption in the local area. Speaking with this group also answered broader questions of change on a macro level and in local practices in the region.

In total, I conducted eleven formal interviews with government officers and officials, along with months of informal discussion that informed my research questions.

### *3. Villages*

To get at the ecology of practice of small millets-based livelihoods, it was important to ground the market and institutional focus with what farmers are doing in daily practice. The selection of villages for the case studies and additional focus groups was done partly at the advice of WASSAN/Vikasa staff and partly by purposive/snowball sampling (Bernard 2002).

WASSAN/Vikasa first introduced us to Village 1 (itself in the Dumbriguda mandal), as they have a history of working with this village. A couple of the villages where we conducted group interviews were identified with their help as well. I relied on the help of another lead informant however to make a selection for Village 2, located in the Araku Valley mandal. This selection was done after some time, as I wanted to ensure that the two villages were appropriate for a comparison, meaning they either had differences in cultivation history, current practices, or different tribal groups.

In total, I conducted 12 group interviews and 5 individual interviews (a total of 17 farmer interviews) across 10 villages. This was the basis for my farmer-centric data though it is important for me to point out that I had considerable additional informal interactions and participant observation in villages.

#### **3.3.2 Primary Methods**

I primarily conducted semi-structured interviews and group interviews/focus groups, complemented by participant observation. Informal discussions with farmers took place while

spending time ‘hanging out’ in villages, ‘helping’ with harvest, and sharing meals. Interviews lasted from 45 minutes up to two hours. In some cases, interviews were sometimes with one individual, and sometimes attracted a small group of people. The majority of these interviews were recorded, translated and transcribed by my translator/research assistant. Upon returning from the field, data was coded and analyzed with NVivo qualitative analysis software.

Over the course of the research period, I conducted a total of 27 semi-structured interviews and 12 focus group discussions. These more formal interactions are coupled with months of informal discussions with the same participants and interactions with additional farmers, government employees, RESMISA partners, and the like. True to form, I discovered that flexibility in multi-sited research in terms of location (as previously mentioned) and in method was extremely important. Ethnographic research also means being open to discussions and data collection at almost any moment. I found that informal discussion often proved more fruitful than formal interviews.

I developed questionnaires<sup>4</sup> for each of the three nodes: traders, government (and non-government) officials, and farmers. For all, I asked basic demographic and local contextual information about millets cultivation and consumption. Interviews with farmers included with both men and women, and included participants from different generational groups to access points of generational change. These interviews focused on questions of production, consumption, markets and agricultural change. In interview questions, placing millets in context of barriers and opportunities in the markets did not yield much information, and in fact caused confusion. Placing millets within the context of change in the local area yielded much better results in terms of meaningful conversation. In terms of production this includes overall on-farm activity (such as which crops they cultivated), the incidence of off-farm labour, and change in cultivation patterns. I also asked questions concerning the increase in

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<sup>4</sup> Research instruments can be found in the Appendix.



cash-based incomes and what people often spent their cash on. Questions of consumption included how many times millets were consumed in one week, how millets are prepared, taste preferences, favourite dishes to prepare, generational differences in taste for foods. All of these questions were then approached through the lens of change: how has this changed in recent years? Questions about the markets included asking farmers where they sold their millets, to whom, how often and whether or not they knew where and for how much millets were sold for later on in the market chain.

In interviews with traders, we asked them about their history as traders, what products they trade, from whom they buy, to whom they sell and the rate of profit they earn with their transactions. We also asked them about the cultivation and consumption of small millets in the local area, and open-ended questions about changes in the market and in the local area in general. Interviews with government and non-government officers focused on government schemes, policies and local history in terms of changes in millets-based livelihoods.

Together, the interviews were meant to investigate the questions of consumption, cultivation and marketing of small millets, how they impact one another and how they have changed over time.

### *Sampling*

The sampling method I used was a mixture of purposive (Bernard 2002) and snowball sampling, both commonly used in qualitative and ethnographic research, where I asked informants to identify other participants that I should speak with (Holloway 1997). It is important to note that there was a certain degree of intentionality in my snowball sampling; I wanted to be sure to incorporate the views of both men and women and from various tribal groups. My sample sizes (though given my research design I did not give much thought to sample size) were also influenced by notions of ‘theoretical saturation,’ which occurred in

interviews with traders, where data was no longer bringing in additional information toward my research questions (Holloway 1997).

### *Positioning*

The challenges of positioning in ethnographic research are important as well. In the market context, it was important to position myself as a researcher, and primarily as a student, as traders often were suspicious of my intentions. Many traders were indirect about issues of profits and earnings, while others were not as concerned. Especially during the beginning, before traders got to know us, many perceived us to be associated with the government, coming around “for checking.” In terms of farmers, it was extremely important to also position myself as a student researcher, as on a couple of occasions it became obvious that farmers thought we were connected to government or other schemes. On a few occasions, villagers approached us and tell us all of the problems in the village, resources they were lacking, and asked if we had the ability to bring what was lacking or could influence decisions of those that would.

### *Reporting to the Community*

I wanted the RESMISA project partners to be involved and invested in my research as much as possible. Preliminary analysis of data was presented and discussed with several individuals involved in the study on various occasions, including staff from WASSAN. These presentations and discussions (conducted either in person or by email) were helpful in verifying and also complicating my understandings of the themes that were emerging. These discussions also informed subsequent questions that emerged during the course of the fieldwork.

At the end of my fieldwork, it was also important to validate and present my findings with the community. Although the original market chain mapping was not as participatory as I had imagined, I was able to validate the finding with traders that I had spoken with

previously by showing them the diagram and asking for their input or revisions. In addition, I made a brief presentation to the primary village case study, confirming to them the reason for my study and the findings that emerged from spending time in two nearby villages.

### *Doing Ethnography*

Rather than just interviewing and discussing with farmers and traders, I *experienced* my way through the market chain. Beyond the interviews and discussion with farmers and traders, I tasted, cooked, purchased, harvested, processed and travelled my way through the local market for small millets and other goods. We made regular visits to the weekly markets, and regular visits to farmers and other actors that I have been put in contact with to build rapport and observe what is really going on. Crucial to this ethnographic research was the participant observation component: determining what people *actually* do in comparison to what they *say* they do. This too is crucial to a practice orientation. In doing so, I was able to witness an amazing diversity in practices, attitudes and understandings of millets trading and consumption.

### **3.4 Summary**

The goal from the outset was to conduct a rich, qualitative study of the local markets for small millets. In the end, I do think that this was the correct way to conduct this study. My methodology definitely played a role in influencing the type of data that emerged, and the direction that I took with the research. One of the biggest shifts in my methodology, and the overall product of this research, was this shift in mentality from a closed-minded orientation around the dichotomy of ‘barriers and opportunities’ to a position that was more open to simply observing, accepting and seeing things through a lens of change. As mentioned previously, placing millets in context of barriers and opportunities in the markets yielded little information, and caused confusion. Placing millets within the context of change in the local area yielded much better results in terms of meaningful conversation.

Not only was I not particularly interested in the finely detailed mechanics of how the market worked, I found that it is mostly irrelevant to farmers' (and in most cases local traders') motivations. Why this is unfolds over the coming chapters. But in incorporating a more social science sensibility, including spending time in markets and in villages over four months, I was able to answer *other* questions. My methodology allowed me to work through components of the market chain analysis toolkits, but also created space for additional reflection. After the first few weeks in the field it became apparent that the linkages between small millets, other grains, vegetables and forest products could not be ignored. I began to inquire about other crops and livelihoods activities, which then led to discussions about youth and generational changes in lifestyle and practice. This case study will reveal that although millets are important in local livelihoods, they are also embedded in larger political economic and non-economic social institutions. I began this chapter with the theme of challenge. The challenge here lies in rooting this research and its design not only to my own research objectives but also to those of the greater RESMISA project and to the broader goals of food and nutritional security and development in neglected regions. This story unfolds in the next chapters.

## Chapter 4

# The Ecology of Practice of Araku Valley

*“Humans exploit resources for social purposes and in the context of competitive, and often hierarchical social arrangements. These purposes and the cultural goals and values behind them create the conditions for the individual use and modification of resources, as people attempt to meet their basic needs. Any study in human ecology must take into account these conditions, and, therefore, it is imperative to ground analyses in ecology in individual activity appropriately cultural contextualized.”*

- Nyerges (2003:1)

### **Introduction: Doing Ethnography**

Having defined the foundations of theory and method, this chapter is an opportunity to start ‘building the bridges’ that I’ve spoken so much about. That is, sewing together the local and sociocultural and socioeconomic context of Araku Valley with the schemes and government departments that connect to larger political economic structures to put forth the *ecology of practice* of Araku Valley. This is also an ideal time to be reminded of my original research question: *How have socio-cultural, political economic and policy factors facilitated or restricted local markets, and with that, the cultivation and consumption of small millets in the case study area?*

The purpose of this chapter is to put forward an in depth description, and to begin the ethnographic story, of Araku Valley. The description that follows began with secondary research conducted pre-fieldwork, drawing from the RESMISA baseline survey and also literature dealing with India’s food security schemes. But it was interviews, informal discussion (in addition to participant observation) with farmers, government officers and traders that resulted in a rich understanding of this area. This means describing the

socioeconomic characteristics of the region and case study villages, and describing the schemes and government programs that affect consumption practices and cultivation practices. This covers important programs like the PDS and other nutrition schemes, government promotion of horticulture, the new nation-wide millets promotion program, the national rural unemployment scheme and the regulation of rural agricultural markets. There are many different forces pushing and pulling consumption and cultivation practice in one way or another. Still, I feel uncomfortable with an overly structural approach and discourse that assumes farmers are just passive actors in this web of change. This idea will be explored moving forward.

### *Welcome to Araku Valley*

A rarity in notoriously hot South India, Araku Valley is a place where the sun is warm but the air is fresh. Thanks to an average elevation of 912m above sea level, Araku Valley is a place of sublime reprieve from the South Indian heat and serves as a popular destination for domestic tourists. The 3-4 car hour journey (depending on the audacity of the driver) from the nearest centre of Visakhapatnam (or ‘Vizag’) is one of narrow, winding mountain roads, dense, green forest rich with tropical flora and fauna. Nearing the top of the ascent, the landscape begins to flow down into a broad valley, revealing a patchwork of farm fields speckled with small villages. Looking over the valley and beyond into the hills one can pick out endless shades of green, some bright and others hued with blues, browns and yellows. No matter your situation in the valley, a distant string of tree-covered green mountains frames each view.

The field-filled valleys are indeed beautiful, and are another reason for domestic tourism – tourists can be seen taking ‘snaps’ amid the flowering yellow niger fields and more generally enjoying the broad, rolling hills. Tourism is present, but relatively quiet, and relatively new. Tourism aside, the fields are of course an obvious clue to the main livelihood

activity of the region: agriculture. One crucially important (though, admittedly, unplanned) perk of being in the field between the months of October and February was being able to witness almost one entire growing season. With that, I was also able to witness the transformation of the landscape over this period. As time passed, the bright greens slowly turned more golden, and muted, as crops matured and were eventually harvested.

#### **4.2 Socioeconomic Characteristics**

The hills were once covered with dense forest, and tribal groups relied on a diversity of wild forest foods. In recent decades groups have moved to more permanent (but also shifting) agriculture-based livelihoods. Today, the region is a relatively remote tribal farming region; it is most certainly a ‘neglected’ rainfed region as described in early chapters. The primary livelihood activity is mixed subsistence and commercial farming, with average landholdings of 5 acres per household. RESMISA baseline data indicates that 81.33% of households surveyed live below the poverty line (Karthikeyan et al 2012:316)<sup>5</sup>. Still, the majority of households in this region are to be considered food secure<sup>6</sup> when considering access to food from ration shops and employment through NREGA that supplement farming activities.

Accompanying a drastically improved road system in the last twenty or so years is a gradual shift from exclusively subsistence-based farming to mixed livelihoods with commercial crops such as vegetables (e.g. cabbage, onions, tomatoes), along with some coffee, mango and cashew plantations. Even finger millet and little millet have come to be recognized as cash crops. This shift, which is not an uncommon story in rural India today, is one of agrarian transition – which brings along with it a whole host of lifestyle changes. As a reference point, even in late 1980s Araku Valley was still a tiny village with limited or no

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<sup>5</sup> This only represents RESMISA baseline data collected for the Dumbriguda mandal specifically. Data collected in this research includes the broader Araku Valley region of 4-5 different mandals.

<sup>6</sup> This should trigger the question of why a food security project in a food secure region? Does this mean that food security stands in the place of income security? This question will be examined in Chapter 7.

road access to surrounding villages – far from the centre that it is today. The changes that accompany this shift will be explored in depth in Chapter 6.

In this tribal region, 93.4% of households identified as belonging to a tribal group in the RESMISA baseline survey.<sup>1</sup> The main tribal groups in the area are Nukadora, Valmicki, Koindadora, Kotiya, Panguporaja, Dhuliya, Bagatha, Kamari and another group designated as a Primitive Tribal Group, or PTG. Traditional characteristics that differentiate (or unite) tribal groups are things like place of origin, language, eating practices (e.g. vegetarian, non-vegetarian), alcohol consumption, and religious practice, among many, many others. While tribal groups are known to consider each other “like family,” there is also considerable difference in practice within groups. For example, of the Nukadora tribals in the first case study village, a few families are Olek (a practicing Buddhist sect) meanwhile other single tribal group villages will contain some Christian households. This diversity is also demonstrated in the existence of ethnically heterogeneous villages, composed of two or more tribal groups.

Diversity in agricultural practice is equally important. These traditional smallholder farmers grow a variety of crops including paddy, small millets (predominantly finger millet, little millet, and sorghum, with limited remaining foxtail and pearl millet), vegetables and coffee, along with other cash crops and forest products. In terms of grains such as paddy and millets, the overwhelming majority grows local varieties or landraces, grown from seed passed down for generations. There has been some shift to purchasing seed in the region, but in small amounts, and mostly for paddy. While the livelihoods of farmers are overall similar, farmers should not be thought of as a homogenous group either. This is seen in differences in landholdings, and whether or not land is irrigated; differences in cash crop cultivation, *podu* cultivation and other practices; dependence on NREGA or other off farm employment; and other differences in household practice found within the region and even at the village level.



While farmers are not one homogenous group, this does not prevent those with power, such as non-tribal traders and government officers, from viewing them as such.

### **4.3 Millets Cultivation in Araku Valley**

While long on the decline at the national level, small millets continue to be a staple and traditional crop for tribal farming groups in Araku Valley. The strong majority of farmers cultivate some variety of millet – the RESMISA baseline survey found that 77.3% of household respondents cultivated finger millet and 70.7 cultivated little millet in 2011 (Karthikeyan et al 2012:320).<sup>7</sup> Other millet varieties such as sorghum, foxtail millet and pearl millet are cultivated as well, though foxtail and pearl millet have drastically reduced.

Farmers grow local varieties (RESMISA baseline survey found 97.14% of farmers do)<sup>5</sup> with little or no access to improved varieties. Between seeding and harvest, labour input for small millets cultivation is generally low, with farmers doing little in terms of weeding or other maintenance practice. The processing of millets, however, is notoriously drudgerous – and typically falls to women. Once the fields have been harvested, the millets are taken to a manure yard or other flat area and dried in the sun for one or two days. To separate the grains from the stem, cattle (or, in one instance even an auto rickshaw) are used to tramp the grains off. Then, the process for dehusking is lengthy. It begins with hand pounding with a stick or mortar and pestle in the ground. The grains are left to dry in the sun once again, and then ground through a wooden and stone de-husker.

Lengthy and drudgerous processing – along with morphological characteristics and social status – are the areas of concern for small millets. Ensuring that they do not decline further is a priority for the RESMISA project, and other actors, NGOs and even the Indian government. Projects such as RESMISA and the agriculture department make an effort to

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<sup>7</sup> This only represents RESMISA baseline data collected for the Dumbriguda mandal specifically. Data collected in this research includes the broader Araku Valley region of 4-5 different mandals.

promote best practices for millets farming (and other crops) to increase yield. Millets-based interventions will be discussed in the second part of this chapter.

#### **4.4 Consumption in Araku Valley**

Speaking about consumption is tricky, as there is a broad diversity of practices among villages and households. With that said, certain practices, preferences and perceptions did emerge from my field stay. Tribals are known to start their day with *ambali*, which is a thick gruel-like drink made by mixing ground finger millet flour with water. In tribal areas especially, the mixture is fermented overnight before heated in the morning. Served in a stainless steel cup (or bowl) *ambali* is brown in colour with a thick, pasty texture. Finger millet *ambali* is indeed “compulsory,” and we observed (and participated in) its consumption far and wide, and across all ages. I once asked what was special about tribal cooking and one young woman came out with an enthusiastic, “*ambali!*” In another village, young women said proudly that they drink *ambali* three times per day, but after some prodding they admitted that they didn’t consume it the way their parents did, and didn’t much care for the taste.

Little millet and other varieties, once processed, are prepared like rice. Little millet is consumed in the region, though its consumption has dramatically decreased. In one village, women told me that they consume millets because of their health benefits. One woman explained, “As they are healthy we eat them. We have so many other crops but we choose to eat these because they are healthy without these we cannot function physically.” In terms of frequency, some told us they would consume little millet “every day” and foxtail millet “four times a week,” though we did not observe this to be the case. Another woman explained, “We eat but when we have busy days and if we have to travel somewhere then we eat rice if we are free then we prepare little millet rice.” When served meals, we were served mostly rice, along with some type of vegetable or field bean curry.

This is an instance where observation, in addition to interviews and conversation, yielded data that is of interest to the story of millets in this area. What people say they do, and what they *actually* do can be useful in revealing certain attitudes, opinions or behaviors that reflect broadly held beliefs. In this study, there are instances where people told us with enthusiasm that they enjoy millets, and consume them frequently, perhaps because they knew I was interested in hearing about millets. I also interpret this, especially among the younger generation, as knowing that millets play an important part in tribal identity, even if they don't care for them or aren't accustomed to them as much as their parents and grandparents.

Today, households consume primarily rice. Food preferences include the distinction between rice and millets, but also preference for local rice over PDS rice. Paddy production for many households is not sufficient for the year, and so purchasing from PDS shops is an integral component of local diets. All of the farmers we spoke to preferred their own rice, saying things like, "PDS rice has no taste." Many spoke of the effects that ration rice has on the body, such as swelling, knee and leg pain: "When we eat depot rice our body swells but the rice that we have cultivated is healthy so we prefer our rice." That farmers express a distaste for PDS rice, yet are willing to take it in exchange for millets might just say something about the local value placed on millets – or perhaps there is simply no more time available to process them.

We were told that small millets liquor was consumed in 70% of villages, and is considered nutritious. We were taken to an alcohol brewing household and observed metal pots of fermenting rice and millets. As happened a couple of times during the research, they hurriedly tidied the yard as they thought we (clearly outsiders) were there for some kind of inspection.

Various NGO staff told me that people have forgotten how to prepare foods with millets. Often what they say and what they do is different: They say they love millets and

know all kinds of recipes, but when you ask them when they ate it last they say maybe last month. And they aren't able to readily prepare the recipes they claim to know.

#### 4.5 Village Case Studies Descriptions

Now that I have described cultivation and consumption practices in general, I now turn to the village case studies, in particular.

##### *Village Case Study 1*

The first village selected as a case study is located close to a road, yet beyond a stream that must be crossed by foot. Framed by the stream and green forest, the village is in all senses picturesque. This slight separation from the main road gives the feeling of isolation and a quiet tranquility not enjoyed by other roadside villages. It is a small village of only 22 households, a homogenous village of the Nukadora tribe. Nukadora is the second most predominant tribe in the region, and members are typically vegetarian and do not take much alcohol beyond local palm toddy. In fact, members of this village told me that the key to good health is abstaining from alcohol. As mentioned, a small number of households are Olek, a practicing Buddhist sect. One can observe those that practice Olek as they wear saffron-dyed clothing. Their native language is Telugu.

From the roadside, accessing the village involves walking down hill and crossing the stream by foot and then climbing back up to the cluster of houses that are scattered up the hill. Moving back and further uphill to the top of the hill is where the village's landholdings are found. Households cultivate paddy, little millet, finger millet, sorghum, different types of gram, maize, vegetables and coffee, among other crops. They told me that in the past they have cultivated pearl millet, barnyard millet, and foxtail millet, among others. The majority of households hold *patta*<sup>8</sup> land deeds, and those that do not practice *podu* cultivation on the hilltop.

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<sup>8</sup> *Patta* land refers to land for which the household or village holds a proper deed as issued by the government.

They cultivate coffee (and pepper) but engage in no other horticulture. We were told that they had in the past been involved, like most in the region, with the agriculture department and forest department: “Once they gave us the nursery we still have it. They gave us mango trees, silver oak trees but none of them survived.” Interestingly, this village was collectively opposed to further plantations on their terrain lands, and prefers to use these lands for millets: “Vikasa wanted to give them the horticulture project, but they said no. They said that they didn’t want to give up their millets to do horticulture,” explained one of the local project staff. We were given alternate explanations for their resistance to horticulture projects. Later, another local staff member told me that this had to do more with concerns about the use of already limited *patta* land.

This village was selected with the help and introduction of WASSAN/Vikasa partners. Our reception here was always warm, and we were offered meals and were welcome to “hang out” (which was good news for an anthropologist). There, we received a tour of the village, participated in rice harvesting and were even invited to join in for *Sankranti* festivities and sleep over in the village during the festival. RESMISA interventions in this village include creating incentives for foxtail millet cultivation, and Vikasa is conducting a quinoa trial and other livelihoods projects with some households.

We were told that they prefer the greens of pumpkin, field bean and other forest foods to commercial cabbage and cauliflower, and were served these foods on different occasions.

When asked what kinds of things they lacked, we were told, “We don’t have proper drinking water. We go to the river and we need to dig in [the bank] to get good water.”

### *Village Case Study 2*

Because I wanted to ensure that the selection would make for a useful comparison, the second village case study was selected after two months in the field, and without the introduction by project partners. This second village is in a number of ways quite different

from the first. Firstly, as a slightly larger village of 65 households and located next to roadside, the look and feel of the village is quite different. Located just roughly 100 meters from roadside, the village can be easily accessed by foot, motorbike or even auto rickshaw from the main road.

The other major difference is the tribal group membership. As a Primitive Tribal Group (PTG), this, in a sense, stratifies the study.<sup>9</sup> PTG have higher reservations and special sanctions – due to their being “more backward.” The prime example of this is that households receive 35kg of rice per month while the typical ration is 20kg. I was told by one government officer that, “considering all their hardships, they are given more.” While other tribal groups practice vegetarianism or abstain from alcohol, PTG groups are known (with little respect from other groups) to “eat and drink anything.” Households in the village were predominantly Hindu, with a few Olek and Christian households. People spoke both Telugu and Oriya, with some of the women speaking only Oriya.

Members of the village told us that they cultivate paddy, little millet, finger millet, sorghum, niger, different types of gram, vegetables and coffee and other crops. They are not located on a hilltop but in a broad valley; we were not told of any households practicing *podu* cultivation.

Our welcome here was enthusiastic at first, but overall much more reserved. “Hanging out” with farmers in this village was not as much an option for this reason, nor was it desirable: as the weeks passed we had several awkward (though not dangerous) moments with intoxicated men. This was nearing the end of the field period, and from then on we opted to visit only in the mornings.

Vikasa did not have a history of working in this village. They did tell us, however, that the government provided paddy and *ragi* seeds this past year. They told us they would

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<sup>9</sup> We were told by others in the region that this village was of Kotiya tribe. Villagers told us repeatedly that they were PTG, and this discrepancy was never cleared up fully.

normally use their own seeds but sometimes the men would travel to purchase seed from outside.

When asked what kinds of things they lack, they told us they lack clean drinking water. There was a pump in the village but the women told us the water comes out muddy.

#### **4.6 Interventions: “So many schemes”**

There are many government programs that affect farming and nutrition practice in this region and across India. I have made an attempt to connect these schemes back to the case study area where appropriate. This section first reviews the main food security interventions (or consumption side interventions) present in the local area, drawing from literature and data from fieldwork. Finally, a brief review of market interventions leads into the next chapter.

##### **4.6.1 Food Security/Consumption-side Interventions**

The inclusion of a brief, and critical, history of India’s green revolution found in Chapter 2 and its impacts on neglected grains is not to deny the very real achievements and innovations that came out of this era. And while food security has not been ‘solved’ the way the green revolution was supposed to have done, this is also not to say that the Government of India has ignored such issues. In fact, an examination of policy demonstrates that, in fact, food security and farming have played hugely important role in populist politics in India since the green revolution era. Since Independence, the Indian state has made clear its commitment to “development” and has devoted what is not an insignificant amount of resources to issues of hunger. The efficacy and ability of such programs to ‘solve’ food insecurity is another question.

##### *Public Distribution System (PDS)*

India’s Public Distribution System (PDS) today remains the country’s most important policy tool for food security, and is the world’s largest government procurement and distribution system. It was originally conceived to ensure stability of demand and prices for

producers while ensuring the availability of basic commodities to the poor. The PDS procures foodgrains from farmers, providing a guaranteed sale, which reduces risk for producers. The Food Corporation of India purchases rice and wheat, stores it and distributes it to Fair Price Shops or other welfare schemes for consumption. To demonstrate the scale, the Food Corporation of India purchases up to one-fifth of the national output of wheat, rice and sugar from farmers (Landy 2009:19). The state of the current PDS has long been a hot topic of discussion in India, with critics charging that the PDS is a failed system riddled with issues of corruption, urban bias and systemic leakages (Ramakumar 2011; World Bank 2011).

On the ground, PDS or ration shops are found throughout rural India. There is a ration shop in all of the major towns and in many of the smaller villages as well. In Andhra, deliveries to the depots occur within the first week of the month, but are often late. Knowing when the delivery has arrived is not difficult a difficult task, as lines form well out of the door and into the street. People line up out of fear that the rations will run out. Both of the case study villages must journey to a neighbouring village to collect their ration. Farmers from various villages told me that they are required to take a day from work to go and collect their household's monthly ration. We observed that it is primarily (though not exclusively) women that are seen lining up at ration shops.

Simply put, the PDS plays a huge role in the lives of those that access it. One farmer told me, "It is good that the government provides rice for one rupee... If the government doesn't provide, who will?" While farmers are thankful, and many dependent, on their monthly ration, they are also often annoyed by certain components: "We are forced to take items which we already cultivate," one farmer told us, referring to items like chilies, gram and other goods that are part of the Aamastam Nutrition Scheme. When asked if they would simply prefer cash in its place, he replied, "No, if they give money people will waste



by drinking and it will not be useful.” Here we can start to see the paternalism implicit in the design and implementation of certain nutrition schemes.

In addition to the PDS, there are also a number of nutritional and employment programs aimed at the poor.

*Integrated Childhood Development Service (ICDS) and Supplementary Nutrition Program (SNP) and Mid-Day Meal Scheme:*

These ICDS-centred services were launched on October 2, 1975 to commemorate Gandhi’s birthday. In theory, one *Anganwadi* center with one teacher and an assistant is provided for every 1000 people. This started in the Araku Valley region in 1983. An ICDS staff person told me that 50 centres started in 1983, followed by over 200 main centres and 100 mini centres scattered throughout the region. The main priorities of *Anganwadi* centres is the food and nutrition for children under seven (0-6 years of age), but they are also mandated to provide nutritional care and health and education to pregnant women and adolescent girls as well as educational activities for pre-school aged children.

Children aged seven months to three years are provided with a nutritional powder, called “*bala amrutum*” (*bala* meaning child). Parents are provided enough for 100g/day, if served 3-4 times per day. During the same interview with the ICDS staff person, she went on about the merits of millets and how kids need things like, “calcium, micronutrients, magnesium, protein, [and] carbohydrates.” She then insisted that the powder contains millets, but my translator later told me that millets are not listed in the list of ingredients. We then asked if they provide *ambali*. She smiled and said no, that it is tradition for tribal families to have it at home so they don’t need it here.

The mid-day meal scheme is run in primary schools providing one hundred grams of rice or wheat per day for each child (Food Corporation of India 2012). Nationally, these programs are known to be highly valuable but grossly underfunded. One woman told us in

her village the woman in charge of the feeding centre ran it “by a fraud,” using funds provided to support only her family and select others.

There are a number of other welfare schemes that operate nationally and regionally as well, such as those for the elderly and vulnerable groups, but these were the predominant schemes that come out in this research.

#### *What’s Missing? Millets*

An important way the marginalization of millets occurred was through the PDS and these other nutrition schemes. We can see that there exist a wide variety of state-run social services that specifically target access to food, yet these programs do not consider *food sovereignty*. It can be argued that there is a lack of culturally appropriate foods in the PDS as it distributes rice, which is not traditionally part of the food habits of tribal groups in Araku Valley. Recognizing this weakness, local partner organization WASSAN has undertaken a pilot project that sees small millets varieties incorporated into the mid-day meals schemes through the ICDS and Anganwadi centres.

This list and discussion of food security initiatives provided above is not included merely as an acknowledgement of state action; rather, the existence of these schemes is crucial to understanding the context and the way these programs influence and are influenced by those that access them. These schemes do not exist only in government documents and academic discussion papers, but are an intrinsic part of the daily lives, and daily practice, of those that rely on them for the acquisition of basic needs.

#### **4.6.2 Agricultural Interventions – Production-side Interventions**

The consumption-side interventions are well known, and the literature on the PDS and other schemes is rich. The types of policy, interventions and schemes that affect cultivation practices were a little bit more of a mystery to me going into the field. With the slow-going, but widespread, change that accompanies agrarian transition, it is difficult to delineate

precisely how – and, importantly, when – these different departments and schemes took effect. What I can do is put forth what government officials, farmers and traders told me over the course of my fieldwork.

Hand-in-hand with the granting of tribal land rights is the government promotion of horticulture plantations, and along with the improved roadways and transportation that occurred over the last couple of decades, came the promotion of cash crops such as coffee, cashew, mango and others. On several occasions we were told of plantations that the government set up that did not survive. We were also told that bamboo and eucalyptus plantations were started in this region as early as the 1960s, and in the 1970s is when silver oak plantations began. Speaking with farmers, it was difficult to permeate recent memory. After some prodding, sometimes farmers would tell us that plantations, such as mango, lime, had been there since “long back.”

### *Coffee Plantations*

The promotion of less perishable cash crops such as coffee and pepper has been ongoing for some time, by a large variety of stakeholders. Coffee monoculture is one of the major development programs introduced in Scheduled Areas of Andhra Pradesh and has had far reaching effects on Adivasi livelihoods and the landscape of the region (Mundoli 2011:19). Stakeholders include the Coffee Board, which once controlled the procurement and resale of coffee across India, but since 1995 acts primarily as an advisory body, and plays a role in supplying seed in the now private market. The cultivation of coffee was initiated early on as a combined effort between the Coffee Board and Forest Department. The Coffee Board established extension offices based in Paderu in 1971, and the intention by the Forest Department in this program was “weaning away Adivasis from shifting agriculture and providing them gainful employment” in addition to preventing the encroachment of forest area (Mundoli 2011:20). It was, however, primarily the ITDA that was responsible for

introducing coffee cultivation to tribal farmers beginning as early as 1985. There is also cooperation with the NREGA to do projects such as raising shade plantations (Mundoli 2011:21). The Araku Organic Coffee Project is one example of this statewide movement, and is a collaboration between the Coffee Board, ITDA and Naandi Foundation, since 2001 (Mundoli 2011:22). To get a better idea of the scale of coffee produced in this region alone, its annual output is estimated at 5000 tonnes, or roughly 15% of India's coffee production (Mundoli 2011:23).

When I shared that my research was dealing with the promotion of millets, an employee of the Coffee Board simply stated that farmers can earn 5000 rupees from farming millets. Cultivating coffee on the other hand, they could earn more than 2 lakh on the same amount of land. Framed this way, why should farmers cultivate millet? These are the kinds of questions that I was forced to ask myself time and time again throughout the research. When speaking with farmers, most say that they have cultivated coffee for 10-15 years, with some starting it earlier and some more recently.

#### *Other Organizations*

Coffee (and intercropped pepper) has been promoted by a number of NGOs in the area. The Naandi Foundation is one example of this, but now runs as a private cooperative. The coffee processing station is a major landmark in the region, employing many locals. One other foundation in particular (known to us for months as “the place where the Canadian came”) is another example of this type of activity, and is especially relevant to this research, given that a Canadian family founded the organization. The couple founded the organization alongside local farmers, which was conceptualized as a tribal-owned and operated organization to develop the local area. Funded initially by CIDA, the couple conducted literacy programs, and adult night schools in various villages – and this was back in 1983 when road access and modern amenities were not locally available. Over the years the

organization made attempts to become self-sufficient and fund their literacy programs through different activities: vegetables (only there were no markets at this time), to a printing press (only Reform era liberalization forced them to close their doors by the mid-90s). Finally, they landed on coffee (and pepper) plantations. Working along with the ITDA and Coffee Board, the foundation coordinated the acquisition of land and plantations of over 1400 acres of coffee. The founder, who still visits frequently, is well known to the region. Many farmers noting that I was from Canada would bring him up by name. One farmer in the second case study village explained, “He developed our area, he has shown us the good way but [some] of our farmers ignored it.”

I was told, time and time again, that these coffee plantations did not replace millets cultivation, but rather forested land and wasteland. (Even today, farmers cut down forest to replace it with silver oak, followed five years later by coffee, and pepper). But, as one example, in the second case study village we identified coffee fields where we were told millets were once grown.

The ITDA is also charged with an agricultural project titled the Andhra Pradesh Inclusive Growth Project (AGRIGP), funded by the World Bank. The United Nations’ International Fund for Agricultural Development (IFAD) has also sponsored tribal development projects to shift farmers to horticulture in pockets of Andhra Pradesh, including the Paderu mandal in the Visakhapatnam Agency. This type of shift from *podu* agriculture, often millets cultivated land, to other plantations is widespread in the local area and across Andhra Pradesh.

### *Vikasa*

Likely the most interesting, and puzzling, example of cash crop promotion is by local partner organization Vikasa. Once again, Vikasa has a long history of working in the region, working with farmers to promote horticulture: mangoes, cashews, pineapple and other cash

crops. Vikasa is also the contract organization of WASSAN, meaning they are charged with the day-to-day management of RESMISA crop trials – and it maintains relationships with farmers in various villages for the purpose of millets promotion activities. Vikasa works in “all villages,” or at least 80 in the local area. Interestingly, while millets are grown as intercrop during certain periods (such as for the first five years with mangoes), the possibility of intercropping with small millets is used in both arguments: it maintains small millets production, through intercropping, but in the long term replaces them.

In order to understand the contradiction at play here – a millets promotion project where one of the partner organizations involved is also replacing millets land we must recognize that Vikasa has a long history and relationship with the farmers in many villages. Their staff are educated, skilled and local to the region – and many speak multiple local tribal languages. Practicalities aside, an organization that sees value in both millets and cash crop cultivation can perhaps be viewed as one that holds an intimate understanding of millets-based issues and livelihoods. I revisit this theme in later chapters.

#### *Department of Agriculture*

The agriculture department also runs programs that affect farming practice. One staff person told me first and foremost that their main concern is yield, and that their department serves as “the link between the scientists to the farmers.” They take problems from the field (in this case, low yield) and the scientists then give recommendations to farmers for improved yield. Activities include trials spread through the region (most are in Araku Valley and Dumbriguda mandals) that focus on best practice through seeding practice (many farms use more than ten times the recommended amount of seed), distribution of improved seed varieties and use/promotion of natural fertilizers. One major program is the promotion of SRI (System of Rice Intensification) cultivation practice.

During the interview, the staff person then noted that farmers cultivate the “same seed that was cultivated by their forefathers,” laughing, “We are trying to get them to switch to hybrid.” Later, when I asked local partner staff about this, I was told that the seeds distributed were not actually hybrid but rather select improved varieties.

The Department of Agriculture is charged with the management of the Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP) program. The objective of the INSIMP program is to increase the seeded area of millets, but mostly to improve yield of existing crop. In this context, and based on discussions with the agriculture department and other staff, yield certainly seems to be the focus. They are trying to promote the use of improved varieties of finger millet and little millet, and are encouraging farmers to adopt transplant and weeding practices. While the discourse around millets (in which I have participated so far) is one around neglect, there has in fact been recent action taken by government in terms of research and programs for millets production. However, is this focus on yield not just a continuation of green revolution thought? On the other hand, farmers were in fact telling me that, in recent years, yield has been a main issue with millets cultivation. Some critiques of the INSIMP include lack of critical thinking, a neglect to promote consumption and focus on millet varieties that are already relatively popular (DHAN 2012). Still, it is a step in the right direction.

Of course there are many other programs affecting cultivation practices. Nationwide, there is a program called the National Food Security Mission (NFSM), which seeks to increase production of staple crops on a national level, although I did not hear anyone speak about this program in Araku during my time there. There was reportedly one organization in the area promoting the cultivation of niger. There could be a number of small incentive-based programs like this, but are generally limited to very small and scattered trials. There are also several other national programs, such as the Rashtriya Krishi Vikas Yojana (RKVY), Rainfed

Area Development Programme (RADP) as part of Rashtriya Krishi Vikas Yojana (RKVY), and Integrated Cereals Development Programmes in Coarse Cereals based Cropping Systems Areas (ICDP-CC) under Macro Management of Agriculture (MMA) (DHAN 2012). These programs in particular did not come up during research. According to DHAN, there is a lot of variation among states in how such programs are implemented. Most states also focus on major millets such as finger millet, leaving out most small millets (DHAN 2012:iii). The recent National Food Security Act of 2013, made a notable inclusion of millets into the PDS, but it remains to be seen how this will be implemented in practical terms.

Agriculture department staff also told us that they have been trying to acquire a little millet mill for the region that would be run by a small business or cooperative. Hurdles include finding interested parties to run this operation, and they also mentioned issues with ensuring proper voltage in the area to run the processors.

#### *Andhra Pradesh Forest Department*

Participants commented on many occasions about the rate of deforestation that has occurred in the local area. While the hills are still green with trees, the lower hills are mainly bushes and small, newer growth. The larger trees that that once made up the dense forest that covered the area are for the most part long gone. The forestry department is charged with protection and also replanting of trees. Silver oak plantations (which are the first step to coffee cultivation as they provide the necessary shade) are the primary activity, though some farmers told us that the forest department has experimented with funding other plantations and programming in the past.

The promotion of cash crops is important here and indicative of the broader process of change that has been occurring in this area. Apart from issues of subsistence versus cash crop cultivation, the longstanding trend of the addition of plantations constricts *podu* cultivation and forest livelihoods possibilities. These are the kinds of issues that organizations



like WASSAN are concerned about. According to recent reports, plant scientists are eyeing Araku Valley as a region to expand apple orchards, given the changing climatic conditions in the Himalayan regions (Reddy Kesireddy 2014).

#### *RESMISA*

The activities undertaken by WASSAN/Vikasa as part of the RESMISA project are also an important factor shaping the millets landscape. Activities like millets promotions and activities for children for World Food Day and plant trials are some of the activities that I witnessed. Other activities included recipe training using small millets varieties to make rotis and other sweets and snacks that the tribal people have “forgotten” and local seed exchanges. Partner staff hold regular meetings with local self-help groups to monitor how women perceive the interventions to be working for them.

#### *The Girijan Cooperative Corporation (GCC)*

The Girijan Cooperative Corporation (GCC) has three main objectives. The first is to sell/market minor forest products. We were told that the GCC was responsible for the creation of markets for NTFPs, giving farmers “motivation” to collect and sell. The second part of their mandate is to run and oversee the depot shops, or PDS shops. The GCC office in Araku is connected to the local depot. The third objective is to provide loans to farmers. Along with forest products, the GCC also purchases finger millet in the local area, at the minimum support price (MSP). This will be discussed further in Chapter 5.

### **4.6.3 Other Interventions**

#### *National Rural Employment Guarantee Scheme (NREGA)*

While a government scheme not directly affecting cultivation nor consumption, the NREGA is certainly an important component of rural livelihoods in this area and across India. This rural employment initiative is known as the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGA). The program employs members of roughly

55 million households who work 2.5 billion workdays, financed by a budget of roughly US\$7 billion (Liu 2012:1). This is the largest public works plan in the world, and its objective is to boost the employment and income of the poor through employment up to 100 days per year in public works projects at a minimum wage, particularly in the agricultural off-season.

The minimum wage in Araku Valley is 150 rupees per day of work, with meals. Work includes public works, and construction, and even work in developing farmland or irrigation works within villages. One farmer told us, “NREGA are helpful and also they help in leveling our land by which we get good yield and also we get money.” While schemes such as this are generally seen as helpful, some farmers meet them with more reservation and bureaucratic complaints. When speaking about issues around late payments, one farmer told us, “...Can’t rely on government. By the time they follow their own procedures the time will be over... we have to find our own way.”

There is a considerable body of research that examines the effects of the NREGA on other factors such as agricultural wages, technology adoption (Bhargava 2014), wages, cropping patterns and use of irrigation. A theme that emerged from this study is a local perception that the NREGA has had an effect on the availability of agricultural labour. It is important to note that this literature has not been examined at length. The perceptions around NREGA and its effects on farmers’ practices will be discussed further in Chapter 6.

#### **4.6.4 Marketing Interventions**

##### *Regulation of Agricultural Markets*

India has a long history of government intervention in agricultural markets. The PDS is the prime example here, being the world’s largest food distribution system and with that likely the largest example of government intervention of its kind. While the PDS was founded upon principles of food access (among other reasons), it was also founded upon a public belief that the private market, controlled by private traders, is not in the best interest of

farmers. Indeed, “policymakers in India have [long] clung to an orthodoxy that private traders, especially agricultural traders, are inefficient and/or exploitative, prone to cheat, hoard and speculate” (Harriss-White 1994:19-2). This notion that traders are the problem dates back to the 1943 Foodgrains Policy Committees, which underlined the justification for state-based trading (Harris-White 1994:19-2).

Ever since, India’s agricultural marketing and distribution system has been a hotbed for debate. Whatever the stance, the ferocity of this debate reflects the “the high economic and political stakes of intervening in agricultural markets and their critical role in determining the livelihood and food security of millions of Indian farmers, traders, retailers, labourers and consumers” (Vijayshankar and Krishnamurthy 2012:34). Now, in terms of agricultural markets and their direction, wheat and paddy (and to a lesser extent, vegetables) are the focus of most of this discussion (Banerji et al 2012). Still small and marginal in comparison, the markets for small millets have yet to spark an equally emotional debate.

The policy framework for intervention in agricultural commodity markets in India can be categorized into three main areas of policy: regulatory measures, market infrastructure and institutions, and price policy (Chand 2012). With this history, and no matter the type of intervention, the whole of agricultural market regulations and interventions in India has been premised around the idea of farmer welfare, and preventing farmers from being taken advantage of by powerful intermediaries (i.e. middlemen). One important example of this is that Indian agricultural markets have been long regulated by the central Agriculture Produce Marketing Committee Act (APMC), which was developed to protect farmers from the mercantile power of middlemen. With the pendulum swinging the other way, the federal government introduced far reaching amendments to the APMC Act in 2003 (known as the Mandi Acts) citing that overregulation of wholesale markets has inhibited development of a competitive marketing system (Singh 2012; Banerji et al 2012:64). The Mandi Acts were to

then be adopted by state-level governments, as agriculture falls under state jurisdiction.

Andhra Pradesh did amend its regulations, opening the door to direct marketing through farmer's markets, or Rythu Bazaars (Government of India, undated).

Today, there are over 100 Rythu Bazaars operating in all districts of Andhra Pradesh (OFI 2011:6). By eliminating middlemen, farmers are enabled to sell directly to consumers to get higher prices. The prices are set each morning, and can be viewed online. The general rule is that the price should be 25 percent higher than the wholesale price while 25 percent less than the regular retail price (OFI 2011:8). This way, farmers and consumers benefit and have an incentive to participate in the marketing arrangement.

#### **4.7 Summary**

The aim of this chapter was to first paint a picture of the Araku Valley region with special attention to case study villages and their cultivation and consumption practices. The second part of this chapter reviewed the schemes and actors whose activities have and continue to affect consumption and cultivation practices in Araku Valley. It is clear that both in the political sphere and on the ground, agricultural livelihoods and markets are complex. And, “[u]nfortunately, while farmers are frequently invoked in high-profile, polarised policy debates, this is rarely followed by an acknowledgment of the diverse agrarian contexts, commodity systems, and marketing dynamics with which they constantly grapple” (Krishnamurthy 2012).

The question posed at the beginning of this chapter was how have these many factors facilitated or restricted local markets, cultivation and consumption? Here, connecting the history of the green revolution to the current state of agriculture in Araku Valley proves interesting; as a neglected area, there was no large-scale replacement of millets for rice and wheat during the 1980s and onward. However, the goals and aspirations implicit in the green revolution indeed have trickled down to unfavoured regions, and to this region in particular,

by way of the promotion of other cash crops such as coffee, pepper, and fruit plantations. In the villages we visited and spoke with that were primarily coffee growing, there was a distinct sense of pride. One village in particular boasted that they were the first in the region to have coffee plantations introduced. Commercial vegetable cultivation is now the norm. Indeed, the devalorization of small millets crops in favour of cash crops has already taken place.

On the other hand, and this is an important consideration, not all of this change has occurred as a result of government programs or policies that affect cultivation practice. The big example of this is commercial vegetables. As far as I know, vegetable production is not an example of an externally implemented government program. Government activities are more geared toward plantations, and farmers grow vegetable crops of their own volition. This should be an indication that top-down, green revolution reminiscent policy, has not dictated all changes in land use practice. Further, whether it be commercial vegetables, coffee, or horticulture, in most cases these practices still accompany, or supplement, traditional millet cultivation. It's important to make a distinction between replacement of millets cultivation and a devalorization of the practice. And, while the millets history has not played out in this region as it has in historically preferred regions of state agricultural investment, we can see that there are also place-specific and environmental reasons for their decline. These factors, and the local perceptions of the reasons for this decline will be discussed in Chapter 6.

## Chapter 5

# The Ecology of Practice of Actually Existing Markets

*“Before designing policies or trying to draw them into new markets, we first need to understand how they make their own markets work themselves.”*

- Vorley (2013:1)

*“Not only is market exchange an ambivalent phenomenon, but it is also extremely complex and specific because everywhere it is deeply embedded in social institutions.”*

- Harriss-White (1999:2)

### 5.1 Introduction

To locate the connection between cultivation and consumption practices, we often look to the market: connected both to local social interaction and the institutional environment, small millet market chains represent one way to bridge these local and contextual practices with the broader political and economic structures. What follows is an in-depth description of the local markets for millets, which are embedded within the local markets for other goods sold in the market – whether it be other agricultural goods, forest products or household goods. Small millets are one component, one player, in this marketing system, just as they are one component contributing to the livelihoods of the farmers that cultivate and consume them.

This chapter in effect completes the first objective of this study: *to produce a descriptive case study of the local market for small millets in the case study area, identifying key actors and the geography of the local market system.* Further, the overall objective of this study is to carry out an in-depth, qualitative value chain analysis for small millets. More

resembling a commodity systems analysis, I have termed this description *the ecology of practice of actually existing markets* in the Araku Valley region.

The results conveyed in this chapter come from interviews primarily with traders, but supplemented with interviews with farmers and select government officers. Questions asked were designed to obtain information about the structure of the local market chain, the actors involved and their relationships with one another. Data gathered from interviews is further supplemented by informal discussion and participant observation.

Orienting this endeavor is the question of how farmers use markets, and why it matters. How can this information be of use to IDRC's CIFSRF and to local project partners? Bringing out the meaning behind the way the markets function along with a nuanced discussion dealing with the significance of findings is often a missing element of barriers and opportunities-focused studies. I struggled with this chapter because after examining the market I was left with even more questions. I did not see how a market intervention would be enough to drastically change land use or consumption patterns. In this sense, this chapter builds on the dilemmas pondered in previous chapters. Together, they lead into the discourse of change in Chapter 6 and theoretical discussion in Chapter 7.

## **5.2 Actually Existing *Santhas***

Hot, noisy, bustling, the local weekly markets – or as they're known locally, *santhas* – are a fascinating place. Historically, these markets were places of exchange for products not available in the local area. Today, the *santhas* are still a primary means of selling and procuring goods, and act as the primary linkage point for the trading of agricultural commodities in the region. Farmers haul their grains, vegetables, NTFPs and other products to market to sell to local traders. Paid in cash, they go on to purchase goods they require in the *santha* itself: usually provisions like oil, salt, clothing, or other household items. Small livestock (e.g. chickens, goats, some cattle) are also brought for sale and can be seen being

taken to and from the market along the roadside, or even unwillingly crammed into the back seat of shared auto rickshaws. Estimates made by farmers and traders about the age of the marketing system ranges from 100-150 years, however some of the *santhas* are quite new, and this system has certainly changed significantly in recent years.

During the course of this research, my research assistant/translator and I frequented four weekly *santhas*: Araku *santha*, in the Dumbriguda mandal; Kinchu manda *santha*, also in Dumbriguda; Sunkarmetta *santha* in the Araku Valley mandal; and the Hukumpetta *santha*, situated in the Hukumpetta mandal. The Araku *santha* is known to be the biggest weekly market, and to have higher quantities of millets trading.

This journey meant piling into a crammed auto rickshaw (which seats up to 12 people); a shared Jeep (up to 40-50 (yes!) passengers); or the bus, which transforms from a potentially comfortable ride to the fight of a lifetime on market day. It was not uncommon to have children on your lap or goats and chickens along for the ride. On especially busy days, around festivals, the Jeeps were required to take extra care not to roll over given the weight of extra passengers and cargo brought to and from the market (not to mention the regular roof-riding passengers). Acquiring a scooter made this journey infinitely more comfortable and efficient, albeit less exciting. Riding through the hills on market day one can see sari-clad women balancing sacs of grains and walking to the market, and men in *lungis* (or just as much, jeans) herding goats alongside the road.

Walking into the market is exciting and overwhelming. Under the hot sun are rows upon rows of makeshift stalls selling nearly everything one could imagine. Women and men selling clothes, inexpensive jewelry; petty traders and farmers selling small bundles of vegetables or pulses; livestock; household items like brooms, soaps, water jugs, oil, salt, sugar; and fresh yogurt or buttermilk served in leaf cones, typical fried Indian snacks and sweets, tea, coffee, and local palm toddy. A tradition of these markets is the ‘sweetener,’ or



an extra handful (of carrots, tomatoes, or whatever it may be) after the price has been negotiated (Gell 1982:486).

And if you wade through the crowded, cramped, low tarp covered rows long enough, you'll come upon the traders: the scales, the impatient haggling and the crowds of farmers lined up to sell their vegetables, paddy, or *ragi* and little millet.

### *Agricultural Markets in India*

The agricultural markets in India actually consist of three different types of markets. The first type of markets is the rural primary markets, or *santhas* in this case. These markets are traditionally meant to meet local demands for goods and food beyond on farm subsistence production. Secondary markets attract traders who purchase agricultural goods in bulk for sale in cities and other wholesale markets. The third type is the wholesale markets that act as centres that gather bulk quantities of agricultural goods (OFI 2012). The rural primary markets and even the secondary markets are known to be informal, lacking permanent infrastructure and other facilities. Under this definition the tribal *santhas* in Araku Valley fulfill two roles as rural primary markets and as secondary market. While the *santhas* and this form of trading for other goods have surely almost always existed, the secondary market for small millets is still relatively new to the region.

### *Markets in Practice*

On market days, farmers will bring to market anywhere between 5-100 kilos of grains. During harvest season is when farmers would bring large quantities and generally will bring a small sack throughout the year, from home storage. They sell their grains, take their payment, and carry on to buy goods (e.g. salt, oil, clothing, etc.) before heading home. In this way, *santha* days really are an event. Just as the narrow, tarp covered rows in the market are shoulder to shoulder, the surrounding villages are notably empty on the day of the *santha*. Market days are also a reason to celebrate. Linger late in the day, market-goers begin to

show signs of intoxication. Back in the villages, some households continue to celebrate. For these reasons, we avoided visiting villages on market days.

Depending on the location in relation to the market, some farmers come by foot with loads on their heads. Others come by bus or by shared auto rickshaw. For larger loads, families or even entire villages will hire a truck or an auto to transport large loads of cabbage, carrots or other goods to market. This occurs be after harvest as proper storage is something that farmers lack (this is especially true for vegetables). Many farmers noted that they sell the most grains, especially little millet and finger millet “mostly around festival time” (Sankranti and others) because they are in need of cash for the celebration; in the case of Sankranti, crops are also ready at this time. Generally speaking, however, farmers sell surplus millet at the market when they are in need of cash.

Farmers generally deal with the same trader, but not always. Traders spoke a lot about “trust,” “goodwill,” and “generational linkages” with farmers and their families in these transactions. Speaking about this, the biggest trader in the region said “[m]ostly known people come and sell to us. They come based on trust and goodwill and also we do proper measurement and pay them appropriately so they come to us.” Another trader said to us, “In villages when we go to collect 90% of known people sell to us and 10% unknown people.” Through observation, however, it became evident that some farmers elect to sell to whoever is located closest to their entrance to the market, and that there is often arguing about price.

### **5.3 Market Structure**

As mentioned previously, the local markets (*santhas*) revealed themselves quite quickly. Through interactions and discussions with traders, I was able to map out the markets for both finger millet and little millet, which both feature in the local marketing system along with paddy, vegetables, forest products and other cash crops. Other millet varieties are cultivated in the region but for the most part aren't traded.

### 5.3.1 Little Millet

The market for little millet is relatively simple. Starting with seed, the most common practice is for farmers to save their own seed (though as noted in the previous chapter, select few farmers receive seed from the agriculture department, and a small minority purchase). Farmers who cultivate will reserve a certain amount of grains for their own use and storage. This might be used for consumption, while farmers will also sell from their stored reserves throughout the year when in need of cash. When used for consumption, manual processing will take place within the household.

If farmers sell, the primary place to do so would be at the weekly *santhas* (any of the four, though farmers typically frequent the market that is closest to their village). At the *santhas* there are all levels of traders, though most look relatively the same in appearance. While we often think of middlemen or traders as a homogenous group, not all traders are made the same. To be a wholesaler one has to have enough capital not only to purchase large loads, but must be able to deal with relatively lower profit levels per kilogram, and, importantly, higher levels of price fluctuation and thus higher levels of risk. For small and medium level traders this is not the case as they are paid on the spot in the *santhas* or in villages. The tribal traders are found at the lowest level.

Apart from the *santha* trading, there is also trading that goes on in the villages. Village level traders collect and purchase from farmers and then go on to sell to middle level traders. Another way in which this happens is when medium-wholesale level traders visit villages and buy direct from farmers. This happens regularly on non-market days but also sporadically to fill loads when needed. I was told on many occasions that there is an understanding that traders have territorial rights over villages and thus will not do business in others' villages.



Figure 3: Market chain for little millet, based on observations and discussions in market towns of Araku Valley, Andhra Pradesh, India.



Figure 4: Market chain for finger millet, based on observations and discussions in market towns of Araku Valley, Andhra Pradesh, India.

## *Market Flow*

We can see how the flow of grains takes place from smaller traders to the local wholesalers, but it might also be that one of the local wholesalers buys from the *santha* or village and exports it directly. One example of the flow through traders would be beginning with local tribal traders, who sell to local non-tribal medium traders or wholesalers, who then sell it to the larger traders who come down from Srungavarapukota (or S. Kota), who then export from there to the bigger traders from Orissa. Even before the grains leave the local area, it is possible that they have changed hands two or three times with an ever present class dimension: there is a marked difference (in wealth and social status) between the ‘big’ traders that deal with the outside buyers and the ‘small’ traders that set up to purchase at the *santha*. One small tribal trader explained the market flow in this way:

Traders they deal directly with the big traders but our role ends at *santha*, they do trading in lakhs of rupees we do in hundreds, they get lakhs but we get in thousands, there is much difference in our trading, and whomsoever S. Kota people sell they trade in crores. So the level of trading starts at *santha* and increases then on.

All of the millets go out through either of the two largest local wholesalers. Traders told me that there are only about four traders locally that deal with the “big traders.” These big traders come from Dharmavaram, in Andhra Pradesh but mostly from Jolaput or Padava, in bordering Orissa. They come down only during the harvest season, from December to February, purchase, and bring millets to outside wholesale markets. We were not able to sit down for an interview with these traders, and we were told that they don’t normally come to the *santhas*, which is why we never saw them. We were, however, able to speak with one of the main millets traders on the phone and who answered our questions about where millets go later in the chain.

Some of the larger local traders, especially outside of the season, do their own exporting. This is reserved for the bigger traders, as it is much riskier, meaning they bear the

risk of vehicle breakdown, spoiled loads and price fluctuations. Traders cited other things like natural disasters (if crops fail) as risks inherent in their business. An important risk for traders that accumulate and deal in larger loads is price fluctuation. If one has nearly a full load in storage only to see the price reduce just before the sale, a large sum of money can be lost. Traders told us that little millet trading has added risk because it is used almost exclusively as a food item, it is supplied to children, and it is expensive – meaning spoilage carries an additional risk. Most said that dealing with other middlemen offloads risk, so they prefer to do this rather than export themselves. Risk – or the inability to carry risk – for smaller, tribal farmers is an important dimension of the market flow too. Speaking of the smaller traders, some of the larger traders commented that “[s]elling 20 bags immediately to the traders is easier for them. They sell it immediately.”

Most traders said that little millet goes to Padwa, a small centre in Koraput District in Orrisa, and from there on to Nasik, a processing centre in Maharashtra. Traders guessed that little millet is made into rice and given in children’s hostels. Others told us that it was exported to the North as food, noting its characteristics of controlling body temperature. Others still told us that it was sometimes used for fish food (perhaps this is what happens when loads get spoiled). Still others told us that little millet is used to make beer and also birdseed.

### **5.3.2 Finger Millet**

The flow of finger millet resembles mostly that of little millet, with a few exceptions. Traders gave all kinds of places where grains went later in the chain: to Vijawada, Vijayanagaram, and Guntur (in Andhra Pradesh), others said to West Bengal. The general consensus is that finger millet goes to Vijayanagaram first for milling for consumption within Andhra itself. Finger millet is used for many items such as *ragi* malt, biscuits, and Horlicks.

One trader told us that lower grade or spoiled finger millet is used for poultry feed, and again others told us that it is used to make alcohol.

### 5.3.3 Girijan Cooperative Corporation (GCC)

But the biggest difference between the market chain for little millet and finger millet is that the GCC procures finger millet for distribution in the local tribal hostels where young people attend school. This is a form of government intervention in the local millets marketing system. While not the GCC's primary mandate, it nevertheless procures finger millet, sends it to Vijanangaram, Andhra Pradesh for processing, and then brings it back up to distribute to the local hostels for tribal students. We were told that the GCC bought "1500 quintles" of finger millet in 2013 at 17 rupees/kg, (which is *higher* than the minimum support price of 13 rupees). This program has been ongoing for a couple of years now. One staff person told us that the expansion of programs like this is dependent on the increase in local cultivation of finger millet.

The puzzling point here is that the GCC is only able to purchase products at the minimum support price (MSP), which is generally 2-3 rupees lower than the market price farmers can sell for at the *santha*. When prodded about why farmers would sell to the GCC for less money, GCC officers sometimes said that farmers would know that traders are cheating them, but most wouldn't. This still didn't answer the question of how they procure enough little millet to provide *ambali* to all (or most) of the hostels in the Agency.

"They buy it from us," one of the local wholesale traders told us. This continues to puzzle me, as the GCC told us that, "we buy from farmers for their benefit" and the price difference, to me, just does not add up. I was not able to get a clear answer on this discrepancy.

### *Prices*

The prices for finger millet during the research period fluctuated between 13 and 16 rupees/kg. The market price for little millet hovered around 16 rupees/kg. There generally was not a price difference for goods between the *santhas*. The minimum support price for finger millets was 13 rupees at the time of research. There is no MSP for little millet.

The market for finger millet is said to date back about ten years. Some traders said that the increase in price for finger millet happened within this last year: “Last year it was 6-8 rupees but now its 13-16 rupees... lot of people have diabetes so people started to eat *ragi*.” The market for little millet is even more recent. It is only within the last three to four years that the traders from Orissa have been demanding little millet.

There is price cooperation among the traders, and if a trader is caught buying for one rupee/kg more than the agreed price, it is considered to be “fraud.” One of the main traders explained it to us in this way: “All of us traders have to depend on the same business so we need to be united if there are variations among us then the farmers would dominate us.” I, however, assess that this sentiment is more of a justification for price cooperation than genuine fear of farmers overtaking the market.

### *Profit*

The discussion around profit margins depended slightly on whom I talked to, and on what occasion. One of the local medium level traders told us he puts 1 rupee profit per kilogram before selling to one of the local wholesalers (who then connect to the bigger traders). Others told me this was more like 25-35 paisa. These larger local wholesalers told us, “The other big traders come to us we do not go to them. We put in 25 to 35 paisa profit and sell.”



In terms of profit down the chain, though not confirmed, one trader told us that by the time little millet reaches Nasik it would be worth 30 rupees/kg. There, by the time it is graded and dehulled, it would sell for 50 rupees/kg.

#### *Taxes and regulation*

Recalling the earlier sections on agricultural marketing in India, the *santhas* are generally informal, unregulated markets. As one government officer told us, “these markets have been here for centuries and there is nothing anyone can do now to control them.” Traders described finger millet and little millet as “tax-free” items. Most regulation applies to the larger wholesale traders. Traders told us they are required to have a waybill, permit card, a route permit and “CHESS paperwork” when exporting shipping grains. Traders were disinterested in conversations about regulation, which leads me to believe that they are not being choked out of the small millets market by regulation or taxes. Most of the regulation and policing in the market is focused on the fraudulent purchase of forest products (which is once again under the jurisdiction of the GCC).

#### **5.3.4 Flows of information**

The farmers that we spoke with in the case study villages and otherwise did not know where the sold millets would go, what they were used for, or for what price they would fetch later on. Most expressed little interest in the matter.

Most of the lower level traders we spoke to knew vaguely where the grains would go, what they would be used for – or at least were able to wager a guess. But one trader explained to us, “I export the raw material and do not know what happens after that, we asked many a times what would happen later but they would never reveal, the traders that we export to they are also middle men so they say they do not know what happens latter.” The biggest of the traders we spoke to did however know what price they would fetch later on in the chain.

### **5.3.5 Millets-Rice Trading**

Another important way traders and farmers come together in the *santha* in terms of cultivation and consumption is through the practice of trading little millet grains for rice. The most common way this happens is for farmers to exchange little millet in exchange for rice. The rice farmers receive in return from traders is PDS rice. This also means that traders purchase surplus PDS rice, and they do so for a few reasons: first, to have on hand to trade with farmers for little millet, and, second, they sell the accumulated PDS rice to local shops or hotels for a small profit. They purchase rice from households who cultivate their own local rice and thus have surplus ration rice. All of the farmers who we spoke with said they prefer local rice, as discussed earlier.

Now, *farmers'* motivations for trading include preference for rice over little millet (due to the laborious processing or taste), and sometimes those without land and who do not cultivate rice would be in need of rice in addition to their ration to meet household needs. One of the traders told us that in the Kinchu manda area and *santha* this system of exchange is the most prevalent, as farmers there cultivate relatively less rice, meaning that the ration rice would not be sufficient. I was told that, as the market for little millet is relatively new, this system of exchange has only been around in the last three or so years. These forms of exchange are an example of the decline in little millet consumption and preference, relative to rice, but also of creativity in meeting livelihood needs.

### **5.3.6 Caste, Class, Gender and Tribal Identity in the Markets**

We met traders of all caste and tribal groups. The flow of goods from tribal traders and up to upper caste and class wholesalers has already been noted. The gender dimension of the *santhas* proved to be interesting. First, it was noted that men and women often come to the *santha* together. One trader explained this to us, “if you have observed when a man comes to the *santha* he brings along his wife because whatever money he gets after selling

she takes it away otherwise he will just waste money by drinking in the *santha*.” While a gross oversimplification, it speaks to the household agency and relative power tribal women possess that many non-tribal, rural women do not. And while drinking (especially at the *santha*) is a common practice, not all men drink. Further still, we observed both intoxicated men and women at the *santha* (though men are definitely known to drink more and in greater proportions).

Second, foodgrains traders and wholesalers are typically, and not surprisingly, the roles of men. This is not surprising as men generally occupy the more formal roles in agricultural commodity chains, which also require access to large amounts of capital and often flexibility to travel for weeks and months at a time. Petty trading is typically (though not exclusively) the work of women and women tend to dominate goods sold or local consumption while men are players in the larger commodity chains. Again, it is this informality of these markets and especially in petty trade that in part accounts for the roles that women play in this regard.

One big exception is a female trader in the region whom, over the course of the research, we kept hearing about but had never met. For this reason, her existence became in our minds almost mythical. After searching for weeks we finally were directed to her stall. She held command just like any other, yet during an interview, told us, “Sometimes I feel very bad, the work that needs to be done by men I have to do.” She entered the trading business after taking over for her husband, who drinks.

### **5.3.7 Rythu Bazaars**

The Rythu Bazaars (or farmers’ markets) in Visakhapatnam (the closest urban centre) are an example of farmers direct marketing their produce to urban consumers. This is done primarily with the sale of vegetables such as cabbage, carrots, onions and tomatoes. The GCC often has a stall at the Rythu Bazaars selling processed forest products as well.

As mentioned earlier, the evolution of the APMC regulation is the reason behind the emergence of alternative marketing arrangements for farmers. The first Rythu Bazaar was established in Hyderabad in 1999 under Chief Minister Chandrababu Naidu, who is widely known and credited for this initiative and the coinciding farmer training programs that still exist today. One Rythu Bazaar trader/farmer explained to us that after his training in Hyderabad, he took on the role of motivating farmers to participate in the new scheme. He estimated that maybe 600 people used them in the local area, although this number seems high to me.

### **5.3.8 Constraints and Opportunities**

To reiterate, the overall objective of this study was *to carry out an in-depth, qualitative value chain analysis for small millets. The purpose of my research is to examine the local small millet market chain in one case study area to assess the opportunities to promote the cultivation and consumption of nutritious small millets.* Most of these findings that follow will not come as great surprise. As a farmer-centric study, what follows are some of the barriers to higher farm gate prices for small millets.

#### *Constraints*

- *Value addition* – One of the major constraints seen in the local market is that little or no value addition occurs locally. As previously mentioned, the grains could change hands 2-3 times locally and 5-7 times outside the local area before any value addition actually occurs. Local partner staff told us that some women were in fact processing small amounts of processed little millet in the *santha* for local consumption, although this was not directly observed. In fact, we were unable to find any small millets products in Araku Valley apart from finger millet at the local mill. This was also noted in the baseline RESMISA survey.
- *Backward linkages* – Given that demand originates outside the local area and non-local actors make most market decisions, the market chain can be understood as constructed by backward linkages, which represents a particular way of understanding the contemporary transformation of agricultural goods (like millets) from a commodity complexity approach (Narayanan 2012:86). Narayanan argues that the *santha* market system, or mandi system, across India is driven by backward linkages, and that this in turn affects the degree to which farmers are able to participate in markets with full information and agency. This is one of the reasons for the push to modernize agricultural markets that we see today: transforming backward-linked market chains into a forward-linked value chain where actors all along the chain,

farmers included, are active participants in profit-making is seen as a key solution to modernizing smallholder agriculture.

- *Quality* – Lack of quality control, and absence of quality-linked pricing was another issue. Most traders did not care much for discussions about quality of grains, speaking to the general constraint to value addition for farmers of a lack of system for grading and differentiating. When prodded, some traders said that the second grade finger millet would be sold as poultry feed later in the chain.
- *Transaction Costs* – Reducing transaction costs is one of the largest areas of discussion when speaking about the modernization of agricultural commodity chains. The cost of transportation is one oft-cited transaction cost for smallholder farmers. However, I'm not sure if the cost of transportation in this case can really be cited as a reason for deciding to participate in the markets for small millets. Further, millets are mostly not grown for market, making the typical discussion around transaction costs difficult. Further still, as Greuere (2007:13) points out referring to isolated millets cultivation lands in Tamil Nadu, limited road access could be seen as both positive and negative constraints for small millets marketing. Additional roads or proximity to the nearest centre would reduce transaction costs, but could also open the door to more competing cash crops. Either way, transportation isn't a major constraint when speaking about millets, especially in comparison to other crops such as vegetables.
- *Asymmetrical Information* - Asymmetries in information are another widely cited problem of smallholder markets. This is especially true when farmers travel a long distance with their grains, and require the cash to make purchase that day. Farmers are price takers in the market. One farmer explained to us, "even if the price is one rupees they will sell." Generally speaking, farmers are not very aware of the prices, and are even less aware of the proper process for weighing goods. Farmers also generally do not know where their products go after the *santha*, what price they are sold for, and generally speaking don't seem to be too concerned with these ideas, saying things like, "We do not have any idea for what price is it sold for later on by the big traders" and "We sell only raw materials, after that we do not know."
- *Power Asymmetries* – Another major constraint is the power asymmetry that comes out in cheating and improper weighing. In this instance, traders tip the scales slightly or simply lie, and meanwhile farmers either don't notice, or know that they aren't in a position to argue. If there is a complaint, which there often is, traders will simply give them a ten-rupee bonus and say, "Here, go and drink." The dimensions of caste, class and cultural difference of trading are evident here; farmers' positions in the market is tied up with notions of tribal innocence and a judgment that all they want to do is drink. Even the government agency, the GCC, cheats farmers in this way in spite of having a farmer-centred mandate. Farmers too engage in cheating, sprinkling water on certain crops (were told this is the case with tamarind) to make the load heavier. Knowing that farmers do this, traders will take an extra 5kg without their knowledge: "It's so easy they don't know how it works."

The market also displays many qualities of informal markets, such as personalized means of exchange (often tied to pre-season loans). When asked about inefficiencies or if the markets could function in any way more smoothly, traders and others didn't have much to say, and were often confused.

### *Opportunities to Benefit Poor Chain Actors*

While the constraints themselves lead to opportunity for potential intervention (e.g. decreased incidence of cheating through farmer education or higher regulation, or undergo local value addition activities) one area of opportunity stuck out to me. Expanding the use of the Rythu Bazaars for the direct marketing of processed finger millet and little millet seems like a feasible activity. Short of reinventing/restructuring the entire chain, this would mean taking advantage of a pro-farmer market channel that already exists.

During field research, some farmers told us that millets were in fact sold in the Vizag Rythu Bazaars. We journeyed to a few villages after being directed to farmers there that had practiced this. One farmer even made mention of prices for finger millet at the Rythu Bazaars being higher than in the local *santhas*. After following up on this, it turned out to be only a rumour. We were not able to find any farmers that sold finger millet or little millet in the Rythu Bazaars, but that doesn't mean that it isn't happening. Perhaps it is already happening, in small amounts, or has in the past.

### **5.4 Perceptions of Change in the Markets**

The local *santha* trading system has undergone a significant amount of change in the last twenty or so years. These markets were once primarily used for the local exchange of goods, but now, with improved transport, the export of vegetables and other cash crops has become common practice. This has transformed these markets from rural primary markets into secondary markets. Similarly, the millets trading was added to the *santhas*, transforming what was once an exclusively subsistence crop into the subsistence-cum-cash crop that it is today.

For some, trading has been the family business for generations, but, for a growing many, trading has become a desirable way to earn money in addition to farm or other works. The increase in the number of traders during the harvest season is noticeable. We presumed

these were the “big traders” that came down from Orissa. In fact, they were seasonal traders, many of which came down from Jollaput, on the Andhra/Odisha border, but who just sold right back to the local wholesalers. More generally, there has been an increase in the number of traders in the markets, which can be understood as a good development for farmers, though traders practice price cooperation.

Some of the new traders were even local farmers who set up a scale for 1-2 months before they begin their NREGA work. When asked about changes in recent years, one petty trader explained to us, “Not many changes but one major change is that compared to past many people started to trade so we get less customers... those who have land, money even they trade and sell they don’t want to do agriculture work so they shift to trading [and] because of that we don’t get profit.” More traders could be a function of the greater flow of goods like vegetables, etc., but also an indication of broader lifestyle change in the local area.

When asked about the changes in the markets and in the area in recent years, traders often spoke about how tribal farmers have now become “cunning,” and seem to have preference for the days when the farmers were “innocent” (i.e. uneducated). One trader explained to us, “People then were very innocent now they are smart because of the generation gap.” While this can be thought of as a positive development, as farmers become more educated, traders may adapt to this change by cheating *more*, though this cannot be proven. One trader explained, “Profit level was high in olden days, everybody is aware of business these days there is no secret, because of televisions people are aware of prices even tribals sometimes tell the traders about the market price.” In this way, traders often spoke of the “good old days” in the market. In the past, there was more profit: “During the olden days the profit level was high.” It does seem that the non-tribal elite are threatened by this growing awareness, which is discussed in later chapters in discourses around farmers’ “laziness” in

addition to being “cunning.” Still, traders continue to cooperate on pricing and hold more power in market transactions, making these sentiments difficult to substantiate.

### **5.5 Contextualizing Markets and Practice in Embedded Markets**

As already discussed, there are factors ‘restricting’ the local markets. When we say restrict though, this generally means restricting markets from becoming modern, integrated markets through which farmers and traders may (or may not) cooperate for greater value addition and forward linkages. These markets are far from that point. And we can certainly think of reasons why keeping the markets as currently organized is beneficial to certain parties. From a political economy perspective, lack of market formality and transparency means for middlemen the maintenance of a power position over tribal farmers and a continuance of easy profits and rent collection.

But to assume that the factors that affect or restrict the market have also restricted the cultivation and consumption of small millets in the local area, I argue, would be an error. This is because farmers, so far, generally do not grow small millet varieties exclusively for the market. I understand market participation, and the associated ‘constraints,’ in this context to be something different altogether. Restricting the cultivation of small millets is a plethora of other factors, including yield, erratic rains and other non-market concerns. Restricting consumption of small millets are lifestyle factors, such as food preference and processing. Overall, it is the surplus grains that feed into markets (though the amount sold in the markets will increase if own-consumption continues to decrease and production remains constant). Importantly, if facilitating market development is the objective then this will also facilitate further decline in local consumption.

The emergence of the market for little millet and finger millet has, necessarily, occurred outside of the local area. The emergence of the local markets was then spurred (not surprisingly given the character of the *santhas* as backward linked) by changing tastes in



urban areas. The coinciding participation in these markets, or the selling of small millet varieties should not be viewed in isolation. The cultivation of cash crops such as vegetables and coffee has been common practice for many years. Millets are now simply one part of this market system. Equally, the sale, as opposed to the consumption of small millets, especially little millet, is a continuance of the already occurring shift away from indigenous grains, in favour of rice consumption. Together, these factors, along with changes cultivation and consumption practice, are indicative and embedded in broader agrarian change in the case study area.

## **5.6 Summary**

This chapter has outlined the local markets for little millet and finger millet, using information from participants to draw out the greater market chain. Paying attention to the intersections of caste, class, gender, and tribal identity, I also focused on the changes in the markets in recent years as millets underwent a transformation from subsistence to a commercial crop. Examining these two varieties of millet is a useful comparison in terms of the links between local consumption and market participation, which will become clearer in the next chapter.

I have made several statements about the constraints inherent in these markets, perhaps better framed as ‘factors that result in farmer exploitation.’ Most of these did not come up as a great surprise, as they are common issues present in informal agricultural market literature. While I have posited one areas of opportunity, the expansion of direct marketing of processed millets through the Rythu Bazaars, this should not be taken as a policy recommendation as this study was not designed to implement or test any sort of pilot study for market intervention. Rather, these points should be viewed as areas for further investigation. Further, given that the sale of millets occurs mostly in the context of surplus

grains, this would require the increase in margin to be quite great in order for farmers to enjoy the benefits at the household level.

One overall theme in this sort of study is efficiency. I have shied away from this subject, recognizing that “[t]he commonest question asked of a students of markets by examiners (be they policy-makers, World Bank officers or interested laymen) is how efficient they are. The answer depends on how ‘efficiency’ is defined” (Harriss-White 1996:309). And, if this is going to be taken as a suggestion, I feel the need to raise the contradiction of market-based interventions in this context: any intervention that would make the markets more ‘efficient’ or ‘fair’ for farmers would, obviously, further facilitate the outflow of millets from the local area. Whether or not this poses a problem is dependent on one’s positioning – both within the RESMISA objectives and broader discussions of food security and development.

Overall, there are a few potential activities and interventions that could improve the farm gate price, but would not be sufficient in transforming millets-based livelihoods in the ways we desire. After examining the market I was left with even more questions. I did not see how a market intervention would be enough to drastically change land use patterns or consumption patterns. While market chain analysis is useful insofar as it holds the ability to understand constraints and opportunities in the markets for millets, bringing in other perspectives – such as a distinct focus on cultivation and consumption practices – allows for an opportunity to understand why these changes have occurred, and why they may have occurred in response to specific political and institutional, or cultural contextual factors. I would argue that while there exist barriers for farmers in the market, and potential for collective action or other market chain intervention, markets do not tell the whole story.

## Chapter 6

# Changes in Cultivation and Consumption Practices

*“What can we expect more than [a dehuller]? We lack just that. If we have that, we have more than enough.”*

- Female farmer  
Interview, February 7, 2014

*“With money in hand there is no difficulty.”*

- Female farmer  
Field notes, November 9, 2013

### 6.1 Introduction: Through the Lens of Change

The previous chapter described and analyzed the local markets for finger millet and little millet. The coexistence of millets and other crops began as a way of structuring my understanding of how the *santhas* function, and ended up being an important link to understanding the broader changes in farming practices in the area. So far, I have argued that actually existing markets are an important part of farmers’ livelihoods today, but that their role in terms of millets marketing should not be overemphasized. Market participation is one livelihood activity that farmers engage in: and the way that farmers engage in markets for small millets is significantly less important to household income when compared to vegetable cultivation or other cash crops. Subsistence paddy cultivation and small millets cultivation are still an important activity, as is employment through the NREGA and other labour work. And, of course, foods provided by ration shops also play a major role in meeting household needs and guiding consumption practices.

The purpose of this chapter is to focus on the third objective: to examine present-day informal private market chains for small millets in one case study to understand how socio-economic, political, and policy factors facilitate or restrict the *cultivation* and *consumption* of small millets. Further, this chapter will focus on cultivation and consumption of small millets through the lens of *change*. Revisiting this objective, it is my inclination to deemphasize the centrality of markets in local cultivation and consumption practices. So this chapter will be rooted in practice, but also motivated by getting at the *changes* in these practices that have taken place over the last few decades.

Change in practice will also be framed around the recent emergence of the markets for small millets. Based on the literature, the premise of this study is that there has been a slow, steady decline in the cultivation and consumption of small millets, in general. But to what degree has this occurred in the case study area (still today a millets producing area), in particular? And, importantly, how has this been affected, or not, by the emergence of the market for millets?

This chapter gets at the local perceptions of the change in land use, cultivation practices and consumption of small millets. This data was collected through traditional ethnographic tools such as interviews, group interviews, and informal discussion with farmers, traders and government officers. The questions were simple: do you think that the cultivation of small millets has increased or decreased? Why? Do you think that the consumption of small millets has increased or decreased? Why? And, finally, what has been the biggest change in the area, and in the markets, in recent years?

To once again return to the theme of ethnographic surprise, many responses received were not surprising, such as attributing to shortcomings in small millets processing. Meanwhile, others were more surprising, where non-tribals told tales of farmers' laziness, that speak to broader projects and instances of lifestyle change in the area. Not only is it not

merely about markets, it is no longer just about farming. And, certainly, it's not just about millets.

But it is not my goal to shake the idea of markets completely. Rather, it is useful to understand markets as they are embedded in the broader non-economic social institutions. This can be better explained when looking to the ways farmers – and different groups of farmers – participate in markets and their motivations for doing so. This was indeed one of the primary differences between the two case study villages, which allowed for a much richer comparison. Once again, it was the explicit focus on spending time in villages that allowed for this to emerge. Similarly, the shift from a purely market-focused study to one that includes and is open to broader discussions of agrarian change, was crucial to this research and these findings.

While previous chapters (Chapter 4), have pointed more objectively to the factors and schemes that affect cultivation and consumption practice, and the local markets, the data that inform this chapter reflect the *perceptions* of local change in the area (i.e. what participants told me). From these perceptions new themes emerged, which can be loosely tied together with the thread of agrarian change.

To begin, there was a widespread understanding among traders, government officers and farmers that foxtail, pearl millet and even sorghum cultivation has decreased significantly in recent years. Meanwhile, a couple of traders told me that the cultivation of millets has increased since people have started trading it, creating demand. I think it might be fair to say that they *assume* farmers have increased cultivation, when really they have just been selling more of what they cultivate rather than consuming it. I drew this conclusion because what traders told me in this instance did not at all match up with what farmers had been saying in the villages.

## 6.2 Perceptions of Reasons for Decline in Cultivation of Small Millets

### *Cultivation and Shifts in Land Use*

Over the course of my field study, likely the biggest issue I struggled with was getting at the question of changes in land use. I reviewed the literature and RESMISA project documents. Framed around the assumption of loss of land under millets cultivation, I was fully expecting to hear about patterns of land use change and replacement of small millets with other crops. While I asked, and asked, and asked again, people weren't talking about replacement.

Partner staff hypothesized that shift in land use has been occurring primarily in three different ways: through converting plains lands, likely millets lands, into paddy with the help of government interventions; coffee and other plantations replacing millets lands; and, given cash crops such as vegetables have increased, shifting priorities to those crops. Shifting from millets land to paddy cultivation was not something that came up very much at all (participants repeatedly told me that paddy and millets merited different types of land). Though, one government officer did comment on shifting from millets to rice: "Yield is less. Labour is more [for millets]." When asked if people in the area had shifted from millets cultivation, one female farmer told us they wouldn't shift. Only sometimes would people shift lands from little millet to paddy, but they would never wipe out the millets completely, instead moving the crops to different lands. My data do suggest incidences of replacement by coffee and a growing preference for vegetables cultivation and marketing. It is important to note that these were not significant, with most farmers speaking about concerns with millets yield.

During a meeting at the ITDA in Paderu, a group of farmers from a nearby village joined in as they waited to speak to the officer. They told us at their village everyone cultivates coffee because it gives them more income. Having made the switch back in 1990

with the help of the government, they replaced the lands long used for little millet and finger millet cultivation. They also told us they consume PDS rice, and do not cultivate much paddy (if any at all) for subsistence. This is interesting in that, although they are relatively wealthier given concentration of a high-income crop, they still require the PDS to meet their household consumption needs. This is indicative once again of the various ways the PDS is used to meet livelihood needs, across class, caste and tribal groups.

The second case study village had one section of land we observed that was used for the cultivation of coffee (and pepper). It was explained to me that the silver oak trees were only fifteen years old (they were over forty feet high). When I asked what was there before this, the government officer we were with replied “*ragi* and *sama*” (i.e. finger millet and little millet). This encounter was actually one of the reasons I selected this village for the comparison.

Other plantations in the region include mango, cashew, lime, and others. Once again, replacement was mentioned but while insisting that millets would be moved to different land. The same female farmer mentioned earlier said that they would shift the finger millet to some other place and in that area they would plant mango plantation. In spite of all of my prodding, at the end of the interview she earnestly said to us, “for all of Agency people, our main is *ragi* and *sama*. No one would shift.” But then she did say go on to list the things that they are lacking: proper seed and proper processing. For these reasons people are shifting to eating rice.

#### *Declining Yield, Soil Fertility and Climate Change*

Once again, looking for examples in replacement of millets land, I would ask farmers if small millets cultivation in the area has increased or decreased. All would reply, “Decreased.” When asked what has replaced, they would say “no nothing has been replaced.” For a long time, this confused me. After some prodding, we finally were able to understand

that they were telling us the *yield* in the region has decreased. For the decrease in yield farmers often cited environmental reasons – the recent change and unreliability of rainfall and decreased soil fertility. Similarly, in the RESMISA baseline survey, respondents stated that soil fertility, low rainfall, poor seed quality and erratic rains were responsible for the decline in finger millet and little millet cultivation.

Most farmers spoke about “no proper rains” and how cultivation has been affected by “climate change.” One NGO worker noted that there have been late rains and loss of crops in recent years due to spoilage. Traders even spoke about the decline in little millet being connected to the climate and properly timed rains. Women in the second case study village said the yield for little millet has been less due to erratic rains.

Other issues that were brought up by all groups (farmers, government, and traders) were loss of soil fertility and erosion of land. In one village, farmers told me that they no longer cultivated millets. I was trying to find out what they started cultivating in the place of the millets as they said that they cultivated more in the past. After some prodding, they said that they didn’t replace millets with anything on that land, but rather that the land has lost its fertility, meaning they don’t farm it anymore. One NGO worker recalled when he first arrived to the region in the 1980s, saying in regard to the finger millet fields, “the crops were much better than they are nowadays... I attribute that to the eroding of the land.” Traders commented on this too, usually suggesting that farmers aren’t doing the proper work out of laziness. One trader also commented: “the soil lost the fertility and these days farmers don’t put proper manure in the land.”

### *Wage Work and Laziness*

This theme continued to emerge in interviews with government officers and traders. These perceptions of farmer laziness were conflated with greater incidence of wage work.



One trader told us that most people in the region are employed, “even those that have land become lazy and don’t cultivate.” One officer told us:

...They can access to [NREGA] scheme and they would get 150 rupees per day because of this all of them become lazy and do not cultivate in proper way, and many lose interest in agriculture and will not be willing to do hard work, and they get into bad habits like drinking. They get money in less time and there is no need to do hard work so they earn and drink.

According to non-tribals, today’s farmers are no longer “innocent,” but both “cunning” and “lazy.” To me, this is evidence of transition, as farmers pursue other livelihoods activities in a broad shift in the region.

This striking discourse around today’s farmers being lazy and cunning – striking in both its inference and the frequency in which it came up – can be interpreted further. It is an indicator of regional change, but perhaps it can be also thought of as a defensive reaction to said change by the non-tribal elite. Traders in particular benefited from the era of “innocence” during which they were presumably more easily able to take advantage of uneducated farmers. With farmers slowly branching out in to other work, this also means there is more competition in other fields such as petty trading. In any case, this discourse is a powerful entry point into viewing cultural difference between tribals and non-tribals, which continues to shape government policy around tribal welfare, and which stems back to the early introduction of Scheduled Tribal Areas.

It is then interesting to compare this with intertribal opinions about laziness. The primary, and only, example of this was observed when I reported my findings to the first case study village, describing broadly how the other village I studied in addition to them had discontinued their consumption of little millet. Similar sentiments came out. They spoke about how some farmers today are lazy and just forget about their traditional ways. Still others are enthusiastic that their children are going off to study and at the prospect of new opportunities.

## *Agricultural Labour*

But this laziness can also be connected with what seems to be a regional shortage in agricultural labour. While not a region with widespread male outmigration, there is a certain amount of migration going on with youth departing to study in tribal hostels. Though the hostels are in the local region, the general feeling is that youth go off to study and do not return to work on the farm. The same officer cited in the earlier section explained to us, “In the past education was not the priority. For example, if there are three people in the family all of them will be involved in agricultural work but right now children get educated and the entire agricultural work is taken care by husband and wife so they cannot do all of it.”

Further, when I asked about hiring labourers, he told us:

In tribal areas it is difficult to get so neighbors help each other during land preparation and harvest. As the children get educated they go to different places for employment and to cultivate. A family needs all the equipment and it's difficult to get all so a family adjusts with whatever they get even though their yield is not sufficient they try to pull on.

Yet another farmer told us, they said that they eat little millet, but this year they didn't cultivate it. When asked why, they said that there were not enough people to care for the fields as it was just she and her husband.

Increase in education is one factor leading to a shortage in labour. The NREGA is another widely cited reason for this shortage. One government officer told us that the NREGA was having an effect on millets cultivation specifically, “Because of that they have reduced cultivation” as “[t]hey are so much dependent on NREGA that's why they are shifting. It's easier. And they prefer cash.” Another employee commented:

People have become so lazy. Farm work takes 8:00-5:00, where as the NREGA takes 7:30-11:30. Some people were saying then that they stopped cultivating because they were having so much difficulty in finding labourers. If I am doing a job that is four hours, why would I take a job that takes 8 hours?

Framed in a somewhat less judgmental way, one officer simply stated, “Agricultural labour is not fetching here,” explaining how farm labour costs have now increased to 150 rupees per

day, plus meals. They can't afford to pay labourers and they are only using family labour. One NGO worker told us of a recent conversation with a farmer who, when discussing these issues, said, "I just have no more time. It's just me and my wife." Traders also perceived that farmers are collecting less forest products due to NREGA.

If labour shortage is a real issue, the decrease in soil fertility could be connected to farming *practice*. If farmers don't have the proper time to care for land, how would we expect fertility to be maintained and yield to increase?

### *Lifestyle*

Further still, farmers sending their children off to school and engaging in wage-labour is also conflated with broader lifestyle changes seen in the area. At the same time, this is tied up with social and economic aspirational projects. In an interview with a petty trader, I asked about how the area has changed in recent years, and she said that "everyone's employed and now they just roam around like that." This is part of, more broadly, a generational change. Going off to school, and finding other wage-labour are factors spurring this shift. One farmer told us, "[the] younger generation says 'why should we invest so much in agriculture?' They take an auto or do some other work. To prepare the land they need to do that with cattle, which takes so much of work. 'So why should we have to do so much of work?'"

An interesting dimension of this is the local Tribal Farmer Training Centre, which we visited to see if and how the training they provide was affecting agricultural practice in the region. The centre was established in 2005, but it turns out that it is not a farmer training centre at all, but an education centre for tribal youth that have dropped out of school from the youth hostels. This centre finds them and recruits them to come for the two-month alternative

training program to learn basic English, basic communication skills and hygiene, and eventually get a job in Vizag or Hyderabad.<sup>10</sup>

A lot of farmers (and others) spoke about the importance of making money. One government officer told me, “in the past [farmers] were not concerned about money but right now their focus shifted to money because of education and transportation.” When asking farmers in the case study village what they spend their money on from selling little millet, they said, “We spend for our children’s education, household expenses and also weekly expenditure.” One female farmer simply told us, “With money in hand there is no difficulty.”

### *Shifting Priorities*

While not directly a shift in land use, another reason is the shift in *priorities* to other crops, such as vegetables. One NGO officer said “they are much more eager to have irrigated fields,” so that they can cultivate an extra season. In one village interview, farmers told me they started the cultivation of vegetables maybe ten years ago. They told me they cultivated different types of gram, *ragi* and *sama* on these lands before. Why did they switch? “For cash to buy clothes and pay for house renovations.” It is also important to balance these statements with the different season – many cultivate both crops on the same land over the same calendar year. Further still, farmers do not necessarily grow millets each year.

### *Change in Millets Consumption*

Overall, most participants said that cultivation of millets (apart from the decline in yield and attributing factors) has not changed drastically, while the consumption of rice has been the real change seen in the area. Perceptions of the decline in small millets consumption were varied. Common reasons for decline in small millets consumption, including distribution of PDS rice and the lack of processing facilities, are well-known in the literature. On the other hand, students going on to study and general generational lifestyle changes and

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<sup>10</sup> The manager also told us that it is important that there be an option for the youth that have dropped out of school, as they are the ones targeted for recruitment into Naxalite groups.

taste, though not entirely surprising, point more toward what people were really talking about: agrarian transition.

Studying the consumption of small millets included spending time in villages and also asking traders and government officials about their perceptions of the change in local millets consumption. This also involved asking farmers what they typically ate in a day, how many times per week they consumed millets and the extent to which this has changed over time. Attempts were made to ask these questions to different generations to gauge how consumption practices have changed. Altogether, overwhelmingly, all participants told us that millets consumption has indeed decreased in recent years. This left me with the impression that the sentiment that consumption has decreased is actually higher than was captured in the RESMISA baseline data, in which 59.9% of respondents felt that the consumption of small millets has decreased in the last ten years.

#### *Institutional: Ration Rice*

Many gave what can be thought of as an institutional explanation for the decline of small millets consumption. One government employee explained, “PDS rice is given out free so they prefer that they do not bother about the health or anything but whatever is free they would prefer that.” NGO and government officers also underlined that due to the PDS, locals now have a taste preference for polished white rice, whereas in the past rice was unpolished (and also more nutritious). One officer simply stated, “Because government is giving rice, everyone is habituated to it.” Nearly half of respondents in the RESMISA baseline survey data attribute the decline in millet consumption to the distribution of rice through the PDS (Karthikeyan et al 2012:327). One farmer told us, “In the past, whatever we used to cultivate we consumed, but now that the ration shop has come and now import and export has become easier, we eat more rice.”

#### *Agrarian Change: Education and Lifestyle Change*

Government officers and other organizations are aware of this shift away from consumption of millets through a more social lens. One gentleman told me it is because people now prefer “fancy food.” There is also an understanding that this has been generational – over the years there been a decline in millets-based recipes as the younger generation preferred rice based recipes. During one interview, I asked why farmers aren’t eating as much little millet as in past years. The officer simply responded, “because of education.” This too speaks to the almost ‘hidden’ migration that is happening in the region, with young people going away to study at local hostels. One trader told me, “the present generation prefers rice, and they got used to it.” Many spoke specifically in terms of youth in the area, saying “tribal youth are habituated to luxuries; they eat noodles, fast food, and roti. They have changed and are habituated to our habits.” One trader told us, “Everyone started to be stylish,” saying that they never used to eat rice, or think about rice, but this has changed because of movies and change in life style. When asked when this happened, she said over the last ten years. One trader said, “its difficult to shift back because its already into their habits. They think eating rice is associated with style and status. Until mentality has changed that they are healthier than rice, there will not be any shift.” Still another officer said that people are not consuming millets because “they [millets] are backward.”

#### *Technological Neglect: Processing*

Processing was another prominent, yet unsurprising reason cited for the decline of millets consumption. Participants in all categories considered the fact that for millets (mostly little millet) processing is difficult and time consuming. One female farmer recalled when she was young and newly married, suddenly charged with processing little millet. Barely knowing how, the older women in the village had to come and show her. Referring to this difficulty of processing she said, “by God’s grace we have more rice now.” (She was a Christian tribal). Many farmers are now accustomed to using the mill for rice, and many use

it for processing finger millet flour – though some told us they couldn't tolerate the taste of milled finger millet flour, and thus preferred the taste of it hand grinded. One petty trader told us, "It is tough and all the process need to be done manually and these people got accustomed to mill so they give *ragi* at the mill and little millet they sell." Another trader explained simply, "Yes, they need to grind it manually so they stopped eating."

Many farmers expressed interest in a little millet processor. I asked each group if a little millet processing unit would be useful to them, and all groups told us they would use it. Asking this question to one farmer in particular, she said heartily, "What can we expect more than that? We lack just that. If we have that, we have more than enough."

#### *Growing Awareness*

Accompanying this awareness of the decline in local consumption is an awareness that small millets consumption, especially of finger millet is growing in popularity in urban centres, at least among traders and government officers. There is a perception of the health-related aspects of this, with an understanding that this is, "because most of the people have diabetes." Class dimensions also came out when discussing millet consumption with non-tribal traders. While some considered finger millet "compulsory," citing reasons like diabetes and "B.P." (high blood pressure) – most told us that their family was not used to eating it. A few of the lower level tribal traders told us that they consume *ambali* daily. Class assumptions also come out in asking about consumption, as most traders are relatively wealthy: "we do not like *ragi* malt, if you ask us to eat Dairy Milk [a very expensive treat in this instance] we will eat that but not *ragi*. We are not habituated from childhood so we do not prefer it much." Even more interesting is the way some traders told us they were fearing diabetes and B.P. and were trying to incorporate millets into their diets.

### **6.3 Changes in Consumption and Market Participation: Village Comparison**

This research was conceived with a focus on markets. We can see that there are a number of factors affecting local cultivation and consumption practices which *could* be understood as, in turn, affecting the local market. But, more importantly, I would argue that the changes in the market, the development of demand outside of the local area has played a role in altering practice, primarily when thinking about consumption. How changes in consumption, especially for little millet, play out in the case study village comparison is an interesting part of the story.

As mentioned in Chapter 5, the local market for little millet has only existed in the last 4-5 years. Upon learning this, a new question emerged: *how is it that farmers have been reacting to this new market development?* Here we can hope to see how demand outside the local area is affecting local decision-making in terms of cultivation, consumption – in addition to market participation. Given that farmers in this region have been generally shifting toward more cash-based livelihoods, including an increase in the proportion of cash crops such as vegetables and coffee, one could hypothesize that farmers would take up this opportunity and take advantage of a growing cash crop market for small millets.

Understanding how changes in the market affect practice is an important consideration when evaluating potential interventions. How farmers react to opportunities and livelihood practices, and how they negotiate change, is something that emerged from spending time in villages and from the comparison of the of two case study villages. How the market has altered consumption is something that I really wasn't prepared to examine, which made it especially exciting to learn about these differences in practice.

Once again, as almost the “control grain,” the difference in consumption and market participation between the two villages was not in finger millet. Both villages consume *ambali* as “compulsory,” and sold finger millet only when they had a surplus. The big difference lies in practice around little millet. The first village told me they did not sell little millet, and use



it for their consumption (though some households did eventually tell me they would sell if there was a surplus). The second village told me that since the development of the market they now sell almost all of their little millet, and no longer consume.

### *Village 2*

Interestingly, during an interview, the men in this village had a lot to say about the village-wide decline in little millet consumption:

“Do you like eating little millet?”

“Oh, yes, we like eating little millet but as we want money we like to sell it not just that our children do not prefer eating it.”

Later, when asking a group of kids what they liked to eat and they said they liked rice, *sama*, and *ambali*. Then they said they preferred rice. Adults explained, “kids do not like little millet rice because of change in lifestyle.” But their concern was on the health implications of this shift:

Yes now we fall sick often especially our children, when we used to eat little millet rice we never used to visit doctor, we never took injections and medicines, little millet rice was everything to us. We usually used to eat *ragi ambali* and little millet rice and we were immune to diseases and used to grow tall and healthy.

As compelling as this dialogue is, I have reservations about the sincerity of these comments.

Overall, the women were a lot more reluctant to talk. Some women later said that they would eat *sama* when they find the time to process and eat it.

With the decline in consumption, and (mostly) unchanging land use, where does the little millet go? To the *santha*. This village told us that they sell nearly all of their millet. This shift has occurred very recently: “No, in the past we always used to eat but from 2-3 years we stopped eating it – that’s because of the generational change, they like to eat rice and also the price has increased in the market so we sell.”

### *Village 1*

Little millet consumption and market participation is altogether different in the first case study village. While they recognized that people in the region do sell (“The main reason

is to get cash and also women are not ready to do manual processing of the grain”), they do not. Even when asked about the higher prices, “Even then we will not sell.” One of the local partners told me about this: “They don’t want their food to be marketed. Everything else they go to the market for.”

Interestingly, when asked about the importance of and contributors to good health, participants in this village did not speak directly about millets. Rather, they spoke about the importance of working hard and abstaining from alcohol. In other conversations, participants mentioned that drinking *ragi ambali* each morning allowed them to do their hard work, eating millets was not what came to mind when speaking about health more generally.

We see that one village reacted to change, or opportunity, in the market, while the other maintained its practices – but why? Given that demand outside the local area is affecting local decision-making in terms of market participation (i.e. the majority of farmers now engage in selling both surplus finger and little millet), the possibility of farmers selling millet should not come as a great surprise. Farmers in this region have been shifting toward more cash based livelihoods now for decades. The sale of small millets is only one, very small, component of this practice.

It would be equally inaccurate to say that the markets are wholly responsible for the change witnessed in this area. We can posit that the village 1 is motivated by other factors, such as health, preference for traditional foods or a personal attachment to little millet. Perhaps they can afford to continue to eat millets, out of preference, with large landholdings and (presumably) better landholdings. Perhaps the PTG village, a group that is known to be relatively poorer, exploits this opportunity because it is one sure way to get cash in hand. And I would hypothesize that, because they get extra PDS rice, perhaps they are not in dire need of food grains. These observations speak again to the embeddedness of markets.

## 6.4 Summary

Answering complex questions about the decline of small millets cultivation and consumption is not a simple task. Approaching these questions through the lens of change, and change in the market, makes these questions slightly more approachable.

One hypothesis that underlay this research was that farmers were replacing millets land with other crops. Though it is well known that the replacement of millets land with other cash crops has indeed been occurring in the region for many years, this hypothesis was not strongly supported in my data. We know the reasons for the decline in cultivation of small millet are complex. The perceptions of the reasons for this decline too are complex, fascinating, and reflect differing positions and perceptions of the grains, tribal farming populations, and the wider social change occurring in the area.

A wide variety of consumption, cultivation and livelihood practices have been documented. The case study approach, and spending time in the villages demonstrated that even as farmers become more concerned with cash, still not all decisions are necessarily motivated by markets or by cash. Moreover, this demonstrates how difficult it is to generalize actions and motivations in an area with villages that are so different in tribal grouping, access to markets and other livelihood opportunities. What happens *in practice* is key here, and this demonstrates the variety in personal choice and behavior. This research has revealed that there are constraints on small millets-based livelihoods – but that they are not necessarily the constraints on small millets marketing. That is, declining yields and drudgerous processing are important constraints on small millets-based livelihoods, and I would argue that these factors are more significant than the constraints associated with backward linked markets and high transaction costs. I think this is an important piece. Without spending time in villages, the way farmers make decisions in embedded markets would not have been revealed.

In general, I think we need to be paying attention to young farmers. In this region, most young people are studying in the local hostels. For those that have dropped out from schools, there is a tribal farming training centre that recruits these students to provide alternative education and also to prevent recruitment by Naxalite groups. In spite of the name, there is no agricultural training; instead, students are taught basic English skills, customer service and life skills to prepare them for work in fast food chains and supermarkets in nearby Vizag or even Hyderabad. If this is any indication of what's to come, millets-based livelihoods are under threat in ways that cannot be fixed by increased market activity alone. All of this speaks to the embeddness of markets and to the ecology of practice of this region.

## Chapter 7

# Discussion: Moving Forward on a Bed of Change and Contradiction

*“...[there are] oft-heard complaints from anthropologists that economists are ‘often in error but seldom in doubt’, and from economists that anthropologists spend forever in the field but never bring back any properly tested hypothesis.”*

- Bardhan and Ray (2008:1)

### 7.1 Introduction

Having gone through my field notes and presented main findings, the purpose of this chapter is to engage critically with the broader ideas, and discussions about theory and practice, in development through the lens of small millets as oriented by this research. At the outset, my objectives were quite clear, and quite well defined; quite practical. Now I am left with more questions than answers. I am left pondering what all of this really means for the tribal farmers in the case study area. How will the further devalorization of small millets, and any potential interventions, affect their livelihoods? How might RESMISA style market-centric or nutrition sensitive agricultural projects affect people with neglected species-based livelihoods in other regions and countries?

While I’m not sure that I am poised to answer these questions in concrete terms, I am obliged to reengage with the questions and the dilemmas around food security, food sovereignty, livelihoods and market-driven development projects that I have alluded to throughout this thesis. Are millets-based livelihoods worthy of saving? Is a market-based approach the best approach? And, perhaps, most importantly, will it be enough? These are

just some of the questions that will anchor this section in an attempt to engage thoughtfully with the competing frameworks often used to understand such issues.

## **7.2 Dilemmas**

Part of my anxiety over this project from the beginning is the inherent contradiction of market-based intervention in the context of a nutrition-sensitive agricultural research project. The problem inherent in the RESMISA research project is that, while concerned with cultivation, value addition and marketing, we are also concerned about the local consumption of nutritious food grains. This is premised on the idea that a holistic revalorization of small millets includes sustained or increased on-farm consumption.

When framing this discussion to keep consumption in mind, we are at once thinking about the outflow of nutrient dense food and dietary diversity. My data show that farmers have begun to participate in the markets for small millets as they have developed in recent years. Some, more than others, have engaged in nearly eliminating little millet consumption as a result of this participation. For most (though not all) farmers, further market development and/or intervention will likely only cause this outflow to occur at a more rapid pace.

This process then can be thought of as turning a traditional food with subsistence value into another agricultural commodity. This type of process is what originally spurred the study of agricultural commodity chains in political economy (Friedburg 2001). At the same time, commodity systems analysis sought to understand these processes while incorporating consumption and the roles and impacts of the environment on food production and consumption. Then, of course, food security frameworks emerged out of dissatisfaction with the effects of the intensification of globalized food commoditization. Further still, food sovereignty advocates sought to reclaim conversations about food production and consumption using a rights based, sovereignty approach. The literature on the promotion of

value chains development for underutilized species, with agrobiodiversity and food security objectives, overall speaks little about these issues.

But this dilemma, working simultaneously toward increased marketing and consumption, is not earth shattering news. This inherent contradiction was raised at both of the half-year RESMISA meetings that I attended, and RESMISA project partners are fully aware that any intervention to facilitate a higher farm gate price will see greater outflow of millets from the local area. Implicit in this dilemma is an assumption that efforts should at once be placed on local processing (especially for little millet) so that consumption at the local level can then increase. Further, when walking the line of value addition, priorities become even harder to balance. Once there is local processing, this eliminates the bottleneck for local consumption – yet once value addition enters the picture, millets items become cost prohibitive to local farmers and those in villages. Local value addition needs to occur, just not too little or too much.

What is problematic here is that this orientation assumes that the only reason for the changes seen in cultivation and consumption practice is drudgery of processing. I would argue that this is not the case. Could it be possible that we are, again, trying to solve social problems with technical solutions? Processing is certainly a major consideration, but how to actually increase the local consumption of small millets – that is, reversing the longstanding shift in practice away from millets consumption – remains the million-dollar question. Another example of falsely linear problem solving is the idea of adding small millets varieties into the PDS. Not only is there not adequate production for such a move, as many participants told me, it would be a stretch to assume that this too would ‘fix’ problems of reduced millets consumption. Many NGO staff persons and RESMISA partners hypothesized that such a move would merely intensify the existing practice of selling surplus millets to traders at the *santha* for cash.

Also problematic is our wanting farmers to maintain traditional millets-based livelihoods while at once wanting them to engage more with the market. Linked to this, as some argue, is the desire to modernize or formalize market chains while it is their informality that works for smallholders (Vorley 2013). As we have seen, these informal markets are a large component of livelihood generation, and this “[i]nformality gives producers flexibility and dynamic market structure.” Further, “[i]t is often ‘us’, development experts, who fail to understand how domestic/local markets are organised and regulated and how transaction risks and costs are reduced through trustful relations and informally provided services” (Schraeder in Vorley 2013). Barriers to entry (such as access to credit) are actually negotiated through personalized means of exchange. Indeed, informality and flexibility can work for farmers, as they make them work, but caution should be exercised when celebrating informality and absence of farmer-centric regulation.

### **7.3 Findings to Theory: Markets, Food Security and Livelihoods**

Given the growing popularity of millets across urban India, the implications of a complete transformation of small millets from subsistence to cash crops merits further discussion. Indeed, researchers employing political economy, commodity systems analysis, food security and food sovereignty frameworks have all taken a turn in understanding this transformation and the implications for producers, consumers (or, farmers and eaters) and other actors in this scenario. These perspectives, while useful in their own ways, leave little room for grappling with broader issues of the reality of farming livelihoods, and leave little room for the inclusion of alternate perspectives. Using the WASSAN/Vikasa tension as an example here, conflicting and competing orientations of food sovereignty and market-oriented horticulture make it difficult to make sense of their working together. On the other hand, if we are to consider the ecology of practice of millets research, and international development more broadly, we are able to see that differing motivations and practices, along



with similarities in objectives, unite the two organizations. This speaks to the reality of development work, food security work, and more broadly to the pragmatics of working in development. It is possible that an organization like Vikasa better understands the complexities of surviving on the margins of agrarian change, leaving the door open to mixed subsistence and commercial agriculture. When we add back in the lens of agrobiodiversity, things become increasingly complex. WASSAN is concerned with the very real consequences of further agrobiodiversity loss in this region.

Theoretical dilemmas and contradictions aside, what we're really doing here is working to improve the food security of marginal farming populations through a range of millets promotion activities. As long as we are achieving results in concrete terms, then we must be doing something right – right?

#### **7.4 Contextualizing the RESMISA Project within Agriculture-based Food Security Projects**

To aid in our understanding of the contradictions raised here, it is useful to engage with the theoretical context of nutrition sensitive agricultural interventions. These are often framed (as I had) simply as 'food security projects,' which I now see leaves a lot of things unexamined. In terms of a strategy for poverty reduction in developing countries, it makes sense: focusing on smallholder agriculture captures a large proportion of the population. Secondly, phrases like "the farming but hungry" mentioned previously are effective in capturing public attention. And, finally, when increasing farm income by improving yield or introducing technological innovations, successes can easily be scaled up to different regions.

If this connection is so practical, logical, simple – what, then, is the link between agricultural interventions and nutrition or food security outcomes? In spite of this seemingly common sense approach, the relationship between the interventions and actual outcomes in nutrition is less than clear. The most common nutrition-sensitive agricultural interventions focus on increasing the yield of nutritious foods. This is followed by market-based

interventions to improve the market access for farmers' foodgrains, fruits or vegetables (Berti, Krasevec and FitzGerald 2003), much in the spirit of this particular project.

While it is difficult to expect concrete outcomes and 'problems solved', especially within the increasingly shorter project funding periods, concerns over the impact of such projects on household food security date back over twenty years. As early as 1994, the United Nations' International Fund for Agricultural Development (IFAD) published a report conceding that a review of select IFAD projects "revealed that, in most cases, [household food security] benefits were yet to be expressed in practical terms." (IFAD, undated). More recently, Berti, Krasevec and FitzGerald (2003) conducted a study of variety of agricultural intervention projects to assess the qualities and characteristics of programs that had the greatest effects on nutrition outcomes. They concluded that "[m]ost agriculture interventions increased food production, but did not necessarily improve nutrition or health within participating households" (2003:599). The weak link between agricultural interventions and food security should not actually be surprising, as decades after the green revolution still countries like India are still struggling with food security issues.

Dorward (2013) recognizes that improvements to agricultural practice are only one contributor to food security. He goes further to categorize the different ways these links are thought to occur, or the pathways between agricultural and food security and nutrition. This includes 'development,' 'market' and 'own-production' pathways. The 'development' pathway alludes to the body of traditional research on agricultural development – where, depending on the tradition – increase in yield will lead to an increase in real incomes. 'Own production' pathways focus on the impacts and on the food consumption of farmers, either by increased incomes and consumption from their own crops or other sources of food/income. Relevant to this study, the 'market' pathway is consumer driven, But the link between these three types of interventions and outcomes should not be assumed, as "[b]oth the market and

‘own-production’ pathways are affected by wider socio-economic context” (Doward 2013:9).

That both subsistence farming and market-oriented agriculture are embedded in particular social and historical contexts is the point I have been trying to stress.

### *Linking Market Interventions and Food Security*

The theoretical justification and argument for increased market integration for subsistence farmers is, again, not one that is difficult to grasp. As markets open up (in the case of international deregulation and opening of borders) or as new markets are developed for certain crops (either locally, regionally, or internationally), there is an incentive for farmers to cultivate greater amounts of respective crops. And, with that, it is assumed that on-farm incomes will improve. Those that argue that market integration has a positive effect on household food security do so in various ways. The first being simply that the decision to shift toward (presumably) more productive farming activities will result in higher household income, and thus, in turn, higher food security. The second being that inputs and higher yield for cash crops can ‘rub off’ on subsistence crops and result in higher yield for subsistence food items. Third, even if food item production declines locally, the increase in cash generating activities will leave the region with enough capital to import food requirements. The fourth argument suggests that market integration leads to a diversification of livelihoods for households, as most farmers tend to not abandon subsistence production completely (IFAD, undated).

Equally, there are oft-cited consequences to market integration. What we want to know in this case is to what extent market integration results in increasing food and nutritional security, which is a contentious issue. First, there is a concern with landless who stand to face less availability of local food goods and higher prices. Second, a shift to market-based cultivation sometimes leads to a decrease in household income, especially when women are involved in subsistence production. But a heavier reliance on cash crops may not

have only negative effects on women's workloads (Finnis 2009:89). Third, those that opt to shift toward cash crops are more vulnerable to price shocks, market uncertainties and become overall less resilient (IFAD, undated).

What about the broader question of centrality of market participation in farming livelihoods in Araku Valley? I can say that the first Telugu word that I mastered in the field was '*enta*', meaning 'how much?' Markets are an important part of farmers' provisioning, procurement and livelihoods. But at the same time, these same markets, and the market forces that give them breath are eroding away at traditional livelihoods. Yet is the effort to promote crops that people aren't interested in cultivating or eating simply swimming upstream to a floodgate of development paternalism?

But perhaps subsistence and cash farming need not be framed as mutually exclusive, or even as in competition with one another. As Finnis suggests:

Rather than viewing crop commercialization and food cultivation as a dichotomy, cash and food crops can be considered in terms of their interactions with each other ... with perceptions of local environmental changes, and with household and community priorities. (2007:343)

Participants told me again and again that cash crops like coffee and vegetables would not replace millets cultivation, supporting a position that subsistence and commercial agriculture can co-exist. (This however needs to be balanced with the fact that there has in fact been replacement of millets land, and especially in other regions in India, like Tamil Nadu, where commercial cassava cultivation has all but completely replaced millets cultivation.)

There is a possibility that we can view farmers as having agency. A conscious decision to grow cash crops or vegetables alongside millets can be viewed as a coping strategy (Finnis 2006), if we remember how farmers noted that soil fertility and sporadic rains have made it increasingly difficult to generate an adequate yield. Eating PDS rice and growing cash crops doesn't speak much to traditional understandings of food security, food sovereignty or control of food systems. But does that mean that there is no room for human

agency when we speak of this agricultural transition? Are farmers merely passive actors in this sea change? Part of understanding the decline of millets lies in fully accepting that farm livelihoods are complex:

These are important arguments and concerns in an ongoing context of the globalization of food production and ecological change. However, it is insufficient to argue against cash cropping on the basis of negative outcomes such as changes in indigenous knowledge use and a dependence on outside sources of food. Such arguments ignore local voices, decision-making, and priorities, and they suggest that [farmers] have had little say in agricultural changes in their communities. Incorporating local experiences and priorities offers a more nuanced understanding of local intensification of agriculture. This approach highlights the diverse experiences that small farmers may have with agricultural regimes—that is, the social and cultural processes of agricultural change and decision-making.  
(Finnis 2007:367)

I argue that food security, but mostly food sovereignty, frameworks are incapable of fully accepting local experiences and diversity of practice. Perhaps this is what farmers are doing, in practice, as a strategy to diversify their income as yield for millets has been declining. These practices perhaps arose out of environmental changes associated with declining yields but are also intertwined with social aspirational projects. It's not about what farmers *should* be doing. It's about what they *are* doing. This is a practice orientation.

#### *Ecology of Practice of Actually Existing Markets*

These discussions are useful in framing this research. But, once again, our focus here is crop specific, *millets* specific. We are focusing on the contexts in which farmers participate in selling their millets. We are pondering how to increase the gain they get from such an activity, but just as much, we are questioning whether or not this is a desirable activity. In dichotomizing subsistence and commercial cultivation, we lose sight of the complexity of marginal farming livelihoods. A sustainable livelihoods approach incorporates such a space for flexibility in household livelihood activities. It is because of the embeddedness of markets in non-economic social institutions that makes market-based interventions difficult to achieve local food security and nutritional outcomes on their own. So far it has been demonstrated

that small millets markets are embedded within the broader marketing system. Further, it has been demonstrated that markets are embedded within a whole host of non-economic social institutions.

The Sustainable Livelihoods Framework is our launching point here; it allows us to view farming livelihoods with greater flexibility. I argue, given the complexity of markets and the complexity of millets-based livelihoods, a sustainable livelihoods approach is more compatible with a Polanyian understanding of markets – and, most importantly, with the ecology of practice orientation. When examining practice, we can see great diversity and flexibility that are not easily examined using food security and food sovereignty frameworks. And in moving past a strictly value chain approach to the ecology of practice of actually existing markets, we understand how issues of cultivation, distribution and consumption are interconnected – this is seen in the market chain. Further, this approach shows that approaching issues of cultivation and consumption in one breath by approaching the market chain is problematic.

This research, as Nyerges had hoped, sought to “critique and further clarify the practice paradigm” (1997:10). I think I have enriched the Sustainable Livelihoods Framework by adding to it a way of understanding mixed subsistence and commercial agriculture, and markets as embedded, by adding in the ecology of practice way of understanding. Markets are embedded, and an ecology of practice orientation helps us to understand this embeddedness.

### **7.5 From Practice to Development Practice: Where to go from here?**

It seems market-based agricultural interventions are here to stay. With IDRC and CIFSRF’s orientation toward market-based solutions to food insecurity, this is going to be the way forward at least in the near future. At a recent CIFSRF conference in Edmonton, Canada, one IDRC official set the tone by speaking enthusiastically about “funding crops that add

value to an existing farming system” and underlining the “need to build markets.” In addition, the MS Swaminathan Research Foundation (MSSRF), a leading Indian NGO working on millets-related issues, pursues a strategy that is predominantly market-oriented in nature (Greuere 2007:27). Knowing that activities and interventions that follow value chain analysis are rarely self-sustaining beyond project funding periods (Greuere 2007), it is useful to reflect upon the *struggles* and tease out the *lessons* around this lack of efficacy. While I have pointed out some important problems and contradictions inherent in market-based nutrition projects, I am not ‘anti-market.’ I believe that many value chains development projects for underutilized and neglected species are useful. The problems arise when consumption of traditional, nutritious crops is not part of the equation. Problems arise when we try to combine these efforts with food security and food sovereignty objectives.

However, I do not believe that the scaling up of the value chain approach is going to lead to the type of transformation of smallholder agriculture that is spoken about within food security and agricultural development circles. Market-centric agricultural interventions as a strategy for development does not represent new, innovative, transformational change, but, rather, more of the same. What I can do is put forward some recommendations so that we can continue to engage with market development research in a thoughtful, sensitive way. Indeed, we must continue to promote, refine, and reflect upon the linkages between health, nutrition and agriculture (and agrobiodiversity). While this discussion carries on, the risk for small millets is real. The risk seen by RESMISA project partners is that small millets will continue to be marginalized in favor of cash crops that have no subsistence value, and which also tend to deplete soil fertility even further.

While this study, and the RESMISA project, may carry within them certain levels of contradiction, they are not alone in doing so. In other words, that this contradiction is present in many other nutrition-sensitive agricultural projects can be viewed as an opportunity for

self-reflection within the development sector. Addressing the challenges and complexities that produce such contradictions “requires approaches that again cross disciplines and sectors in building resilience, diversity and nutritional effectiveness” (Dorward 2013:18; Naylor 2011). And the interdisciplinary design and openness of the RESMISA project to reflexive research like this is an important contribution to the conversation. My research revealed the complexity of reasons behind the decline of small millets cultivation and consumption – and the implications of their promotion on local food security and livelihoods. These results would not have been possible without a flexible, changing research strategy that was open to alternative ways of approaching questions of agricultural marketing and intervention.

## **7.6 Summary**

The food security question (or the question of whichever framework we are operating from) is complex. In an attempt to grapple with this complexity, this chapter moved the discussion from place-based ethnography to a broader engagement with the RESMISA project objectives and the contradictions and dilemmas implicit in market-based and nutrition-sensitive agricultural development projects. It’s no wonder I have been struggling to tie all of this together; this is not easy work. I embarked on this research with an ambitious theoretical framework. I have argued that the ecology of practice approach can articulate with a SLF approach in order to understand complex farm livelihoods and the ways in which farmers participate in markets. In addition, I have employed a Polanyian understanding of markets, whereby market participation is embedded in specific social and historical contexts. I adopted this approach out of dissatisfaction with the explanatory limits of food security, food sovereignty (and, to a lesser extent, political economy). While I align with the objectives advocated by these respective frameworks, I argue that they are less able to account for the complexity and diversity of farming practice than ecology of practice and SLF approaches.



In rooting down to practice, we can examine what it is that farmers are doing without judgment.

At the end of the day, we are promoting the revalorization of traditional grains that are nutrient dense and are important contributors to regional and national agrobiodiversity. This is this is important work. Is a market-based approach the best approach? I'm not sure. Will it be enough? I don't think so. This is where we need to reintegrate theory, and reintegrate values, in our research to root scientific findings back down to practice. Only in coming to a more nuanced understanding subsistence millets based livelihoods, selling millets, and their relationship to commercial crops, can we move forward as farming realities continue to change.

## Chapter 8

# Conclusion

*“Studies of actually existing markets have appeared spontaneously in response to dissatisfaction with the fault lines between policy predictions and outcomes.”*

- Harriss-White (1999:3)

*“This is a very different project from that of economics – if anything, the project is to complicate rather than simplify, question the unquestioned, and be wary of neat and tidy ‘parsimonious’ explanations.”*

- Bardhan and Ray (2008:17)

### 8.1 Introduction

This work is a snapshot of the changing markets for small millets in one case study area in South India. Indeed, conducting an in-depth, qualitative market chain analysis while bringing in cultivation, consumption and change, proved to be a fascinating pursuit. To reiterate, the overall purpose of my research was *to examine the local small millet market chain in one case study area to assess the opportunities to promote the cultivation and consumption of nutritious small millets to improve the food security of poor and marginal farmers, women and children, and indigenous groups in South Asia through a sustainable livelihoods approach while contributing to regional agro-biodiversity*. It shouldn't be of great surprise that such a loaded research question (and agenda) elicited a loaded answer (hence a lengthy thesis). This concluding chapter reviews the research question and objectives while presenting the major findings related to those objectives. This is rounded out by shortcomings of the research and its implications for future small millets, and food security research.

## 8.2 Key Findings

In terms of market interventions and opportunities, one concrete suggestion that came out of the market analysis is to promote the direct marketing of processed small millet varieties through the Rythu Bazaars to access the urban market. There are a number of things that could be done to promote the cultivation and consumption of small millets in the case study area drawn from other areas of the RESMISA project. Most of these, however, are not rooted in my data (with the exception of the little millet dehuller, which farmers told me without a doubt would be of use to them.)

Breaking this overall research down further, I return now to the second and third objectives, which are interlinked. The second objective was *to critically examine the impacts of green revolution-era agricultural policies, food security programmes, and other government policy on local market chains for small millets*. The third objective was *to examine the market chains to understand how socio-economic, political, and policy factors facilitate or restrict the cultivation and consumption of small millets*. Put simply, the second objective focused on green revolution-era interventions and schemes on *markets*, while the third objective focused on the many factors (starting at the market and moving out) affecting *cultivation and consumption*.

First, the green revolution-era schemes that affect the *markets* are a little more difficult to pin down. Local cultivation and consumption in the broadest sense dictate what goes to the local markets for small millets. There is a policy history that has changed the way that *santha*-centric markets are viewed and have changed in practice in rural Andhra Pradesh. Consistent with green revolution neglect of small millets, however, these discussions are mostly in regard to paddy and perishable vegetables. With the state-market closeness that pervades food grains markets in India, that there has been little or no attention paid to the private markets chains for small millets is another symptom of their neglect. Green

revolution-linked policy and food security schemes such as the PDS have made rice consumption a norm in this area and across India as well. Overall, I had hypothesized that I would find rich accounts of the intersections between local cultural and institutional context, with great variance in practice among market actors – and this turned out to be the case.

Second, there are a number of factors that affect the cultivation and consumption of small millets. The majority of these factors were not surprising and are present in the literature. While it is impossible to separate between the ‘sociocultural’ and ‘political economic’ and ‘policy’ factors that have restricted the local cultivation and consumption of small millets, these factors remain. The social status of small millets has affected consumption, with a preference for rice, while the labour intensive processing for certain varieties has led to a decline in their appeal. The replacement of small millets land with other cash crops such as coffee is an important factor affecting the cultivation and gradual shift away from small millets that has been documented countrywide and also in pockets in the case study region. The shift in *priorities* (as opposed to land use) toward other crops such as vegetables has also been documented. This is all part of the ecology of practice.

There are a number of factors affecting local consumption and cultivation practices, and in turn affecting the market – but changes in the markets have also played a role in altering these behaviors. This was one main finding that was surprising, and unexpected, that came out of this research. First, I learned of the changes in the market, including the relatively recent development of the markets for finger millet (within the last 10-12 years) and, more recently, little millet (within the last 4-5 years). Then, through spending time in villages, I learned that farmers were adapting to the changes in the markets for small millets in different ways. One village I studied maintained their little millet consumption while the price for the grains increased. In the second village, consumption for little millet ceased almost entirely, with farmers opting instead to view little millet as the newest cash crop. The

differing logics in market participation is really the main finding that came out of spending time in villages – and how changes in the markets themselves have altered consumption practices.

This led me to come to a more Polanyian view of markets, that they are embedded, and that market participation and behavior in practice should not be assumed. The argument that I have been trying to make here is that markets are complex, and this complexity should not be taken for granted. Getting at the ecology of practice of actually existing markets sheds light on the practice and farmer motivations. In this way, an in-depth, qualitative study of markets, and consumption and cultivation practices, is a useful tool for understanding agrarian change.

But even a holistic study of one commodity is not sufficient to understand or affect change in practice. Over the course of this research I learned that it's not just about the mechanics of the market; it's just as much about change in lifestyle, changing tastes, increases in education levels, and the many motivators and indicators of change. I would argue that widening the scope of my research is what allowed for these themes to come out, and saved it from its own contradictions. This research argues that the markets for small millets are embedded within greater market participation by farmers in agricultural markets generally (e.g. vegetables, coffee, and other cash crops), and that markets themselves are embedded in broader, non-economic social and historical institutions.

Market participation aside, millets-based livelihoods themselves too are complex. Changing livelihoods possibilities, tastes, and lifestyles all inform current practice. Millets might be the miracle grain, but to argue for their promotion through cultivation with ignorance to non-market, or off-farm, factors is ultimately a disservice to the farmers that we are trying to help. Millets too are embedded: they are one part of a much larger set of political economic, sociocultural and development processes and relations. A crucial point here is that

the ability of improved small millets cultivation to meet desired goals held by farmers and to improve livelihoods and/or food security is highly contextual. This research argues that small millets in this instance are representative of much more than merely nutrient content, drought resistance, or role in biodiversity conservation. Cultivation, marketing, and consumption practices provide a lens through which we can examine the broader social relations that are created and recreated in relation to political, economic, and agricultural change seen in India. Actions result from much more than economic motivations.

Then there is the issue of agrarian change and how this is linked with change in practice. I was caught by surprise by how much participants spoke about lifestyle change, “lazy” farmers, rising education levels and “roaming around.” While millets have been the traditional subsistence mainstay for tribal farmers, small millets-based livelihoods are changing. Over the course of the research I went through a shift in mentality from market-centric barriers and constraints to a farmer-centric position that was more open to simply observing and accepting this change.

Moving away from ideas of what farmers ‘should’ be doing, to simply what they are doing, is one of the more useful components of a practice orientation. The ecology of practice is not about what people *say* they are doing. Building on this, my understanding now is that it is certainly not about what people *should* be doing either. It’s about first understanding what *is*, and it’s about trying to understand the web of motivations, changes (or not) in behavior and people’s understandings of the change in cultivation and consumption of small millets. I hope that I have demonstrated the shift from a results-based, objective-oriented study to one that is more a narrative of the ecology of practice is a useful project. This narrative and collection of stories of behaviors, practices and attitudes I think does shed light on the policy realm. Understanding the nature of the decline of small millets cultivation and consumption, and how this relates to the changing nature of the markets for these grains, is a crucial

element to potential market chain intervention and has implications for food security outcomes in this region.

While taking a few theoretical turns in the road, I believe that I have answered my research question: *how have socio-cultural, political economic, and policy factors facilitated or restricted local markets, and with that, the cultivation and consumption of small millets in the case study area?* In sum, these many factors have indeed restricted the cultivation and consumption of small millets in the local area, but these restrictions should not be equated with constraints or weaknesses in the local markets. I have argued that the convergence of cultivation and consumption in the market system should not be taken for granted. This convergence alone does not mean that market interventions will have desired impacts on cultivation and consumption practices – this relationship is not symmetrical. In this way, this research has implicitly attempted to find out if market based opportunities for small millets would have positive effects on the food security and livelihoods of farmers in the local area. I hope that I have demonstrated that this answer could be both yes and no. Once again, local value addition needs to occur, just not too little or too much.

### **8.3 Contributions**

I have contributed an in-depth case study of the local markets and villages of the Araku Valley region to the RESMISA project. This research has confirmed and provided further documentation of the many cited reasons for the decline of small millets cultivation and consumption in rainfed agricultural regions in India but it has added some complication to them. Getting at the big picture questions, bringing out the nuance and demonstrating to policy makers that we are conducting thoughtful research is equally as important as submitting detailed technical reports and quantifiable results. In this way, this project plays a role in the RESMISA project of adding qualitative data and social science reflection to a

largely science-based project that has struggled to ground itself in impacts and lessons on the ground.

This research also contributes to the small millets literature and provides placed-based academic research on millets in Andhra Pradesh. (Much of the literature on small millets cultivation and consumption has taken place in Tamil Nadu.) And while much of the literature speaks of the modernizing commodity agricultural commodity chains in India, this was a study of actually existing marketing systems. This is a research on local tribal markets, and the market chains for small millets specifically, which are two even more under researched areas. Finally, this is *theoretically grounded* fieldwork and research on actually existing markets (Jan and Harriss-White 2012), which is important amid a sea of largely atheoretical market chain analyses for development.

My final and fourth objective was a theoretical and methodological one: *to contribute to market chains analysis literature with a unique approach that combines traditional market chains analysis with the ecology of practice orientation*. This study, in viewing markets as embedded, is significant in understanding the human dimensions of agricultural policy change and moving beyond political and economic explanations of state policy to create space for human practice, adaption and agency.

#### **8.4 Shortcomings and Recommendations for Future Research**

Of course, for some, anthropology's strength is also its weakness. Given methods utilized here, it would be imprudent to generalize outside of the case study area but the study does suggest questions and points of entry for research elsewhere.

##### *Thoughtful, Interdisciplinary Research*

As argued in the previous chapter, the way forward here is thoughtful, interdisciplinary research. Approaching these larger issues of agricultural policy, the political and economic, and historical dimensions of cultivation, consumption and marketing requires



collaborative and thoughtful interdisciplinary research. The cross fertilization of disciplines leads to new ideas and new ways of knowing.

Meeting with the imaginary policy advisor (or in this case, the real development practitioner) demands lessons for policy. I would argue that we need to meet farmers in their markets, and see what they are doing *in practice* before making claims. This research also points to the need for, and value of, interdisciplinary explanations of markets as embedded, as it seeks to complicate assumptions about market behavior. Most importantly, we need to be wary of single prescription policies, or even single commodity research projects. This kind of approach complicates policy; but of course, policy making should be sensitive to complexity and particularity. Everything becomes more complex when the social and historical institutions in which economic decisions are embedded are adequately considered. In this way, I argue for a more nuanced way of understanding millets based livelihoods, commercial crops, and their relationships with one another and broader social change.

## **8.5 Conclusion**

I began this thesis by stating that the decline in cultivation and consumption of small millets crops is an issue of great complexity. This research set out to find out how socio-cultural, political economic, and policy factors have facilitated or restricted local markets, and with that, the cultivation and consumption of small millets in the case study area. In doing so, I have argued that a more holistic approach to confronting the decline in millet might be possible by asking a different question: what are the most important constraints on small millets-based livelihoods? In this case, I argue that the most important constraints are not market-centric. This research demonstrates how a holistic study of an agricultural commodity, which includes on-farm cultivation and consumption, can get at how smallholder farmers participate in local markets, in everyday practice, and how they engage with change. Yet cultivation practice, consumption practice and market participation, though

interconnected, need to be examined as things apart. Merely looking at the broad structures of markets causes us to overlook much of what is seen on the ground in people's daily practices. The importance of building a bridge between these many interconnected forces that affect practice is fundamental to this research and more broadly to the discussion around food security outcomes in farming regions. This research has revealed that there are constraints on small millets-based livelihoods – which do not necessarily equate to constraints on small millets marketing. For farmers, we need to understand markets and understand what is going on *beyond* markets, if we are to attempt to tip the scales in farmers' favour.

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## **Appendix: Research Instruments**

*Note that all interviews took place with the assistance of a translator unless the participant was comfortable communicating in English.*

1. Semi-Structured Interview Questions - Farmers
2. Semi-Structured Interview Questions - Traders
3. Semi-Structured Interview Questions - Government and Non-Government Officials

### **1. Semi-structured Interview Questions - Farmers**

#### **Part I: Background Information**

- Participant Number:
- Age:
- Gender:
- Caste:
- Number of members in household:
- Primary and secondary sources of income/livelihood:
- Brief description of participation in the local markets for small millets:
- Level of education:

#### **Part II: Local Experience and Practice with Small Millets**

##### ***Millets cultivation***

Let's begin by talking about your household's farming practices:

- What crops do you cultivate?
- Do you cultivate millets?
- What varieties?
  - Ragi, little millet, foxtail millet, etc.
  - SMAC: niger, field bean, horse gram, other pulses
- What is the season for different crops?
- What are the main steps from cultivation to when you bring it to the market? (planting, harvesting, post-harvest, etc.)
  - Based on the process that you just described, who does the work, who are the actors involved?
  - What do women do?
- Where do you access seed?
  - Is this true for most in the village?
- What are the difficulties associated with cultivating millets and how do you cope?
- What problems do you experience with other crops? Are these less risky than the problems associated with millets?
- How much land do you own/farm?
- Do you hire labourers?
- What other economic activities does your household engage in?
  - Wage work?
  - Do others in the village work as labourers?

### ***Consumption***

- Does your household cultivate millet for your own consumption?
  - Why or why not?
  - What types of millets foods do you eat?
  - What do you typically prepare?
  - How has this changed in recent years?
- Do you typically purchase or grow vegetables, pulses or other foods?

### ***Regional Consumption***

- Do you think that the local consumption of small millets has increased or decreased in recent years?
  - Why do you think this is the case?

### ***Regional Cultivation***

- Do you think that the local cultivation of small millets has increased or decreased in recent years?
  - Why do you think this is the case?

### ***Your involvement with local markets***

- Do most/all millets go to market for sale?
  - Where?
  - How do you get there?
  - How often?
  - In what quantity?
  - For what price?
    - Is this a good price?
    - How has the price changed in recent years?
- Do most/all vegetables/other go to market for sale?
  - Where?
  - How do you get there?
  - How often?
  - In what quantity?
  - For what price?
- Who takes goods to market:
  - Grains
  - Vegetables
- What do you buy with the cash you earn?
- To whom do you sell?
  - To the same trader each time?
  - Do they provide credit or cash on delivery?
    - Do you have access credit?
  - Do you have a good, or trusting, relationship with this person?

### ***Local market structure***

- Where is most of the locally cultivated millet bought and sold?
  - Do most farmers in this village, or area sell their millets the way you do? What do others do?
- What other forms of trading are important besides the santhas?
  - Are there traders in the village that collect and take to market or does everyone go to the santha?
- Do you know where the grains go beyond the local area/santha?
  - Do you know what price they're sold for?
- Do you get any information in the market about increases/declines in demand or price?
  - From who?
- Are there certain groups in the market chain that you perceive to have more control over the markets than others?

### ***Caste, tribal, religious context***

- Are the local traders typically of the same or different caste or tribal group?

### ***Agricultural change***

- Has the proportion of small millets you cultivate changed since you've been farming?
  - Why do you think this might be?
- Why do you think there has been a decline in millet cultivation in recent years?
- Why do you think there has been a decline in millet consumption in recent years?
- How did you decide to start growing vegetables/other crops?
  - What is good about growing vegetables? Bad?
- Are there other crops you would rather grow?
- Do you think there are village changes with the switch to vegetables? What kind of changes?
- How is it that people in this village were able to afford electricity/other?
- How has your life changed with a more cash based economy?
- Would you hope your children continue farming?
  - What advice would you give them?

### ***Government and NGO schemes***

- What government schemes does your household access?
  - Public Distribution System (PDS)?
    - PDS ration?
  - Ama Hastam Scheme?
  - Mid-day meal scheme?
  - Integrated Childhood Development Service?
  - Supplementary Nutrition Program (SNP)?
  - National Rural Employment Guarantee Scheme?
  - Are you aware of other welfare schemes which operate in this area?
- Are you satisfied with the schemes you access?
  - What would you rather the government provide/support?
- If so, how would you say these government schemes affect your agricultural practices?

- How has the Forest Rights Act changed your agricultural practices?
- Are there NGO schemes that affect your agricultural practices?
- Are there NGO schemes that affect your consumption practices?
- Are you part of any SHGs and/or farmers club programs?

### ***Market perception and livelihoods***

- Do you feel like there is a reliable/constant market for millets?
- What would make it easier for you to cultivate/market your millets?
  - What would bring you more money?

### ***Concluding***

- Is there anything else that you would like to add?
- Do you know of any farmers or traders that might be interested in speaking with us?
- Do you have any questions about us or this research?



## 2. Semi-Structured Interview Questions - Traders

### Part I: Background Information

- Participant Number:
- Age:
- Gender:
- Caste:
- Number of members in household:
- Primary and secondary sources of income/livelihood:
- Brief description of participation in the local markets for small millets:
- Level of education:

### Part II: Local Experience and Practice with Small Millets

#### *Millets trading*

Let's begin by talking about your business in trading:

- What crops do you trade?
- Do you trade millets?
  - What varieties?
    - Ragi, little millet, foxtail millet, etc.
    - SMAC: niger, field bean, horse gram, other pulses
  - Other crops?
- What is the season for different crops?
- What are the difficulties associated with trading millets and how do you cope?
- What problems do you experience with other crops? Are these less risky than the problems associated with millets?
- Do you hire labourers?
- What other economic activities does your household engage in?
  - Wage work?
  - Do others in the village work as labourers?

#### *Local market structure*

- Where is most of the locally cultivated millet bought and sold?
- What other forms of trading are important besides the santhas?
  - Are there traders in the village that collect and take to market or does everyone go to the santha?
- Do you know where the grains go beyond the local area/santha?
  - Do you know what price they're sold for?
- To whom do you sell?
  - To the same person each time?
  - Do they provide credit or cash on delivery?
    - Do you have access credit?
  - Do you have a good, or trusting, relationship with this person?
- Do you pay any taxes?
- What regulations must you follow?
- Is there any way to differentiate between quality of grains?

- Do you get any information in the market about increases/declines in demand or price?
  - From who?
- Are there certain groups in the market chain that you perceive to have more control over the markets than others?

### ***Caste, tribal, religious context***

- Are the local traders typically of the same or different caste or tribal group?

### ***Regional Consumption***

- Do you think that the local consumption of small millets has increased or decreased in recent years?
  - Why do you think this is the case?
- Does your household cultivate millet for your own consumption?
  - Why or why not?
  - What types of millets foods do you eat?
  - What do you typically prepare?
  - How has this changed in recent years?
- Do you typically purchase or grow vegetables, pulses or other foods?

### ***Regional Cultivation***

- Do you think that the local cultivation of small millets has increased or decreased in recent years?
  - Why do you think this is the case?

### ***Agricultural change***

- What are the biggest changes seen in the markets in recent years?

### ***Government and NGO schemes***

- What government schemes does your household access?

### ***Market perception and livelihoods***

- Do you feel like there is a reliable/constant market for millets?
- Do you wish there were more, or better, options for selling?
- What would make it easier for you to cultivate/market your millets?
  - What would bring you more money?
- What would motivate you to grow more millets?
- What's the biggest challenge or issue around millets production, or farming in general?
  - What solutions do you see?
  - Do you feel optimistic about this changing?
- Would you hope your children continue farming?
  - What advice would you give them?

### ***Concluding***

- Is there anything else that you would like to add?
- Do you know of any farmers or traders that might be interested in speaking with us?
- Do you have any questions about us or this research?

### 3. Semi-Structured Interview Questions - Government and Non-Government Officials

#### Part I: Background Information

- Participant Number:
- Age:
- Gender:
- Caste:
- Number of members in household:
- Primary and secondary sources of income/livelihood:
- Occupation:
- Level of education:

#### Part II: Local Experience and Practice with Small Millets

Let's begin by talking about your post in relation to farming livelihoods in this region:

- What is your position and what does your organization/department do?

##### *Regional Cultivation*

- Do you think that the local cultivation of small millets has increased or decreased in recent years?
  - Why do you think this is the case?

##### *Regional Consumption*

- Do you think that the local consumption of small millets has increased or decreased in recent years?
  - Why do you think this is the case?
- Does your household cultivate millet for your own consumption?
  - Why or why not?
  - What types of millets foods do you eat?
  - What do you typically prepare?
  - How has this changed in recent years?
- Do you typically purchase or grow vegetables, pulses or other foods?

##### *Local market structure*

- Where is most of the locally cultivated millet bought and sold?
- What other forms of trading are important besides the santhas?
  - Are there traders in the village that collect and take to market or does everyone go to the santha?
- Do you know where the grains go beyond the local area/santha?
  - Do you know what price they're sold for?
- Are there certain groups in the market chain that you perceive to have more control over the markets than others?

##### *Caste, tribal, religious context*

- What do you perceive do be differences in practice between different tribal farming groups?

### ***Government and NGO schemes***

- What government schemes operate in this area?
  - Public Distribution System (PDS)?
    - PDS ration?
  - Ama Hastam Scheme?
  - Mid-day meal scheme?
  - Integrated Childhood Development Service?
  - Supplementary Nutrition Program (SNP)?
  - National Rural Employment Guarantee Scheme?
  - Are you aware of other welfare schemes which operate in this area?
- Are you satisfied with the schemes you access?
  - What would you rather the government provide/support?
- If so, how would you say these government schemes affect your agricultural practices?
- How has the Forest Rights Act changed your agricultural practices?
- Are there NGO schemes that affect your agricultural practices?
- Are there NGO schemes that affect your consumption practices?
- Are you part of any SHGs and/or farmers club programs?

### ***Agricultural change***

- What are the biggest changes seen in the region in recent years?
- What are the biggest changes seen in the government schemes in recent years?
- What are the biggest changes seen in non-governmental organization activity in recent years?
- What are the biggest changes seen in the markets in recent years?

### ***Market perception and livelihoods***

- In what ways are the local markets regulated by government or other bodies?

### ***Concluding***

- Is there anything else that you would like to add?
- Do you know of any government officials or others that might be interested in speaking with us?
- Do you have any questions about us or this research?