Agricultural Innovation in Rural India:

The Paradox of Farmer Nonadoption in Bajwada, Madhya Pradesh

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ABSTRACT

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Farmer adoption of sustainable agricultural practices is key to sustainable development, as changes at the farm level are essential to ensuring food security and environmental protection. Reasons for converting to sustainable farming have been studied in a number of instances. However, the underlying rationale that motivates this behaviour is not always made clear.

The village of Bajwada in Madhya Pradesh is used as a case to investigate farmer perceptions and attitudes regarding sustainable farming. An innovator has been promoting what seems to be a highly productive and lauded method of sustainable farming called Natu-eco farming for the past five years. Strikingly, this technique has had practically zero adoption in the village. This study aims to examine this paradox by exploring farmer narratives about sustainability, futures and development.

Semi-structured interviews were conducted using 18 farmers in Bajwada. Participatory observation was also undertaken for ten days. The development discourse, the drive for modernity and urbanization were found to be important in shaping farmer's perspectives on Natu-eco farming and sustainable agriculture. An understanding of the dominance of certain discourses and narratives offers a new approach to understanding farmer adoption and non-adoption.

The results of this study are meant to attract the attention of policymakers and practitioners who are involved in the planning and implementation of schemes and projects promoting sustainable agricultural innovation.

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I would like to thank the organisers of this course- this year has been a steep learning curve, as I made the transition from life science to social science. I have enjoyed myself immensely, and can see the difference the course has made to the way I think and argue. My mother for one is not happy with how critical I've become!

I thank the ESDers for all the great conversations and fun; a lot of my learning was done outside the library, through conversation (or the dialectical method, as we like to call it).

Lastly, a big thank you to my friends and family for their support and encouragement.

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LIST OF ABBREVIATIONS, TRANSLATIONS AND FIGURES

BT *Bacillus Thuringiensis*

GDP Gross Domestic Product

GM Genetically Modified

HYV High-Yielding Varieties

MP Madhya Pradesh

Baba Father, grandfather or sir

Gora Foreigner

Jowar Pearl millet

Kaccha Unripe

Sarkar Government

Vada Back garden

1. INTRODUCTION

1.1 BACKGROUND: THE PARADOX OF BAJWADA

India has been declared to be in a state of agricultural crisis (Dhas, 2009). Farmer suicides are making headlines across the country, as concerns about food security and food prices escalate (Sainath, 2008). The irony of the existence of both a food surplus and persistent hunger in India has been discussed in much detail (Roy, 2002).

According to the World Bank (2008), current modes of agriculture are neither economically nor environmentally sustainable. Water tables in India are falling due to unsustainable water use, while soil degradation is occurring due to the indiscriminate use of fertilisers (Patnaik, 2007). Slightly more than half of India's workforce is employed in its agriculture industry. Yet, this sector only contributes to 20 per cent of the country's GDP and a quarter of farming households live below the poverty line (World Bank, 2010). News of rural unrest is spreading as escalating social inequality and urbanization continue to contribute to de-agrarianization (Sharma, 2007). The rural sector is increasingly ignored amidst reports of 'India Shining' and the country's rapid GDP growth (Patnaik, 2005).

On the other hand, the need for sustainable agricultural practices is increasingly globally acknowledged. It is being recognised that current industrialised agricultural systems are flawed, and that alternative systems can be both productive and equitable (Tilman, 1999). Evidence from various developing countries demonstrates that sustainable agricultural practices, anchored in local knowledge, are effective in developing resilient food production systems (Pretty et al., 2006).

In this midst, an innovator in Bajwada, Deepak Suchde, is propagating a low-input, high-yield method of farming, called Natu-eco farming. This method conserves the soil and biodiversity, by promoting zero use of fertilisers and pesticides, while still maintaining

productivity. It also aims to provide food security for small and marginal farmers, while enhancing farmers' self-esteem by emphasizing the joy and spirituality of farming (Wadia, 2010) [1].

This method was first invented by Professor Dabholkar, and has been practiced for over 40 years. According to the founder of the technique, it stresses both scientific knowledge as well as a better understanding of nature (Dabholkar, 1998). The method has produced record yields of grapes, sugarcane, rice and bananas (Wadia, 2010) and has attracted the attention of politicians, academics and farmers, as it appears to be both productive and sustainable.

The Chief Ministers of several states have personally visited Suchde's farm. Deans of agricultural universities contact him, asking for his advice. He lectures across the country, and has a waiting list for his farmer training programmes. He has recently received funding from the National Bank for Agriculture and Rural Development to propagate this method. Even Reliance Life Sciences, a branch of one of India's largest companies, is promoting Natu-eco farming amongst subsistence farmers (Wadia, 2010).

Yet, in the village of Bajwada in Madhya Pradesh (MP), where he has lived and practiced this technique for the past five years, there is practically zero adoption. With one exception, all farmers use fertilisers and pesticides in their fields.

This study explores this paradox.

[1] It should be noted that this paper published by the Observer Research Foundation was produced in conjunction with Deepak Suchde.

1.2 RESEARCH QUESTION

The main research question that guided this research was:
What factors influence the nonadoption of an apparently successful model of farming in Bajwada?

This research question was broken down into three components:

i. What motivates the farmers of Bajwada to practice the methods of farming that they currently employ? To what extent do they believe these methods are sustainable?
ii. What is their perception of Natu-eco farming? What constraints or limits do they face in its adoption?
iii. Why do they think Natu-eco farming has had such little uptake in the village overall?

1.3 VALUE OF RESEARCH

The purpose of this study is to contribute to the analysis of farmer adoption of sustainable farming techniques, by exploring both the incentives and barriers to adoption.

It is increasingly recognized that farmer participation is necessary to facilitate the diffusion of agricultural innovation (Heemskerk, 2006), and in the implementation of effective policies. Thus, in the light of the urgent need for the adoption of sustainable agricultural practices, it is necessary to study farmer preferences and goals.

A great deal of work has been undertaken on farmer adoption, which is reviewed in Chapter 2. However, the apparent paradox of non-adoption in Bajwada cannot be satisfactorily explained by the factors and constraints commonly described in the adoption literature. Thus, this study is an exploratory one, which uses a different approach to that commonly described in the literature to explore this contradiction.

There have been few empirical studies on the narratives of non-adoption, and the role of dominant discourses in shaping farmer perceptions and attitudes. This study expands on conceptual and methodological work done in the study of farmer adoption by providing empirical evidence from examining farmer narratives in Bajwada, using both postcolonial theory and political ecology. This research aims to contribute to the social understanding of adoption by demonstrating how the discourses that these farmers are embedded in shape their perceptions and behaviour.

The approach taken is further described in Chapter 2, after a literature review that puts the study into context and highlights the gaps in adoption literature.

1.4 STRUCTURE OF THESIS

This thesis is organized into five sections. Section 2 provides a literature review of the adoption literature. Section 3 describes the methodology used in the study. Section 4 presents the results of the study along with their analysis. The paper concludes by summarising overall findings and the policy implications that stem from them.

Figure 1. A view of Suchde's Natu-eco farm (Source: Author)

2. LITERATURE REVIEW

In this section, the adoption literature is evaluated critically. The argument is made for both understanding the construction of farmers' goals and perceptions in detail, and taking the political economy of agriculture into consideration. The approach taken in this study is then justified based on this line of reasoning.

2.1 SUSTAINABLE AGRICULTURE AND NATU-ECO FARMING

By 2050 global grain demand is projected to double due to rapid population growth (Tilman et al., 2002). Skewed food-trade patterns and the vulnerability of food exporters to growing threats of climate change further exacerbate the availability and accessibility of food, especially for the poor and vulnerable groups (UN Special Rapporteur, 2008).

In developing countries, the rural population is rapidly growing. Increased population pressure has led to the fragmentation of land holdings (Pretty, 2002). The demise of subsistence farming systems and the abandonment of ecologically beneficial traditional farming practices have contributed to soil erosion and land degradation (Sachs et al., 2010). Additionally, rural areas must deliver food and incomes to expanding populations in the next decades but also safeguard against many aspects of the global commons. Doubling food production in ways that do not compromise environmental integrity and health are great international challenges (Tilman et al., 2002). There is therefore a growing emphasis on sustainable agriculture and rural development that has moved into mainstream political thought (Robinson, 2008). It is argued that investing in the abilities of farmers to adopt sustainable practices will help ensure higher yields and profits, and will encourage local food consumption (Pretty 2005; Altieri and Rosset 1995). Pretty (2008) has called for another agriculture, founded on more ecological values, and in accord with people, and their societies and cultures.

While the definition of sustainable agriculture is not agreed upon, for this study, sustainable agriculture can be defined as that form of agriculture that is 'driven by local knowledge and resource-conserving techniques and that makes the best use of nature's goods and services without damaging those assets' (Pretty, 2005). For the purpose of this study, Natu-eco farming is categorised as a sustainable farming technique. Natu-eco farming takes a holistic approach to agriculture that focuses on productivity as well as improved environmental outcomes. It promotes minimal dependence on high agrochemical and energy inputs. Additionally, it considers the total flow of energy and materials from the original source to the consumer, and the potential to restore nutrients to the soil (Dabholkar, 1998).

2.2 THE ADOPTION OF AGRICULTURAL INNOVATION

Adoption can be understood to mean 'the decision to make full use of an innovation, which encompasses the mental processes an individual undergoes from first hearing about to finally adopting an innovation' (Rogers, 2003).

In light of the growing concerns over the environmental implications of conventional agricultural practices, there are an increasing number of studies on the factors influencing the adoption of sustainable agricultural practices. There is a long and rich tradition of empirical research that seeks to explain farmers' adoption of particular agricultural innovations (Feder and Umali, 1993; Cary, 2002; Vanclay, 2004). A feature of the adoption literature is its disciplinary segmentation, which covers subjects ranging from economics to sociology anthropology and marketing.

The debate about the relative importance of economic factors as drivers of adoption has been raging since the 1950s, when early work stressed the profit motive (Griliches, 1957; Found, 1971; Gould, 1963). A behavioural approach in the 1970s added the personal characteristics of farmers to the equation, leading to the inference that adoption decisions were a product of dynamic economic, physical and behavioural forces (Feder, 1993). Rogers has been influential in creating a model that links personal characteristics of

farmers with the timing of the adoption/non-adoption of the innovation in question (Rogers, 1962, 1983; Rogers and Shoemaker, 1971). However, this model has been criticised for its failure to take into account extra-personal factors such as a farmer's ability to procure the innovation, and its unidirectional view of the communication process from agricultural institutions to farmers (Nowak, 1983).

As outlined by Feder (1985), researchers typically select a number of potential independent variables for inclusion in their analysis based on prior theorising. They then test their hypothesis via logistic or probit regressions to determine which variables correlate with adoption in some statistically significant sense. There has also been a spate of recent papers using econometrics to analyse farmer decisions and behaviour (Liu, 2008). This literature has been criticised for operating within an empiricist and positivist framework, and placing excessive emphasis upon quantitative measurements (Pannell et al., 2006). Almost all investigators have used surveys to gather data, which may have biased the results with inadequate or unreliable samples (Knowler and Bradshaw, 2007). Moreover, almost every measurable characteristic of farms and farmers has been found to be statistically related to some measure of adoption of some innovation (Rogers, 2003). There is an absence of any clear universally significant factors in adoption, and sometimes contradictory results are noted (Padel, 2001). This reflects the heterogeneity of adoption literature, and the variable quality of empirical analyses. Variation in geography, sample sizes and statistical methods contribute to these varied findings (Knowler and Bradshaw, 2007). Vanclay (1986) has also criticised studies for failing to untangle the effects of multiple causal variables.

Additionally, in empirical literature, the underlying theory suggests an orderly, linear progression from awareness of an innovation to adoption. This is too prescriptive and deterministic (Brown, 1981), as in reality the process is unpredictable and highly diverse (Ohlmer, 1999). It has been pointed out that external factors associated with political and institutional change are noteworthy (Allanson, 1995) and cannot be ignored; markets and policies influence adoption decisions significantly (Feder 1993).

This deterministic view of adoption is changing, as scholars emphasise the effects of socio-structural factors explaining diffusion on the basis of individual attributes and relationships amongst actors involved in the process. The role of communication and social networks has been stressed (Rogers, 2003).

Furthermore, the role of institutional structures and settings in supporting and shaping innovation systems has recently been emphasized in adoption literature (World Bank, 2007). The concept of innovation systems combines the role of social networks, institutions and policy. This has proven to be a useful framework for understanding and supporting innovation (Hall, 2005). The importance of analysing the political and structural framework within which agriculture rests (Blaikie, 1985; Peet and Watts; 1996; Leach and Scoones, 2001) has long been stressed. Thus, the next section considers the political economy of agricultural practices in India.

2.3 FARMING IN INDIA: THE POLITICAL ECONOMY OF AGRICULTURE

It is necessary to examine the nature of economy and power relationships to understand change in society (Blaikie, 1987). This section argues that the institutionalization of development, the Green Revolution, international food regimes and global capitalism have all played an important role in shaping agricultural policies in India.

A Eurocentric model of development involves the transformation of a country's economy from one that is predominantly agricultural and rural to one that is urban and industrial (Mellor, 1990). The Indian Government, in line with this thinking, pursued a strategy of modernization that depended on the establishment of heavy industry after gaining independence in 1947. It was assumed that the benefits of urbanization would trickle down to the rural sector (Gupta, 1998). This strategy has been widely considered to be partially responsible for the ever-widening divide between the urban and rural sector in India (Sainath, 2003).

International changes in the technology of food production also affected the development of modern agriculture. In a scientific breakthrough, high-yielding varieties (HYV) of rice and wheat were developed in the US (Cleaver, 1972). In the 1960s, as droughts across India threatened food self-sufficiency, the Indian government under international pressure, decided to pursue the Green Revolution (Parayil, 1992). The Green Revolution combines the use of hybrid seeds with large doses of chemical fertiliser and intensive irrigation to obtain high yields. It has led to a drastic transformation in agricultural practices and has multiplied India's wheat yield four times since the 1960s (Bairs, 2003). However, as Bernstein (1992) notes, the Green Revolution enabled India to obtain national self-sufficiency in food grain by the late 1970s, but per capita production fell in 11 out of 15 major states between 1960 and 1985. Some scholars have also found a strong correlation between its success in certain regions and the distribution of irrigation in those parts (Evenson, 2003).

Additionally, this intervention in agrarian structures had implications not only for material conditions, but also for personal and social identity, traditions and customs associated with the land (Shipton and Goteen, 1992). The consequences of the technological revolution in food production have been the subject of heated debate. The differences between the productivity gains and social costs, class implications, environmental degradation and wheat shortages have been much discussed in literature (Sen, 1975; Frankel, 1971; Cleaver, 1972). Shiva (1991) has famously called this revolution the 'colonization of the seed in the Third World'.

Coincident with the general liberalisation of the Indian economy since the early 1990s, the Indian agricultural policy pendulum has swung sharply towards market reforms. The creation of a dual economy, which involves substituting indigenous systems of production with commercial production along capitalist lines, has led to the development of a distinctive agricultural transition (Patel, 2007). Farmer suicides across the country expose the extreme rural plight that is otherwise shadowed by the prevalent narrative of 'India Rising', as one of the world's fastest growing economies (Sainath, 2002).

Agricultural production has also changed due to shifting international pressures and trends within global food systems. The food economy is being restructured in line with global patterns of demand (Watts and Goodman, 1997), as agricultural production is disembedded from local and national contexts. India is currently viewed as a lucrative market for the multinational food retail industry. Global firms are calling for the radical restructuring of the Indian agricultural sector, and demanding to be allowed to contact farmers directly (Nielson and Pritchard, 2007; Patel, 2007).

On the other hand, a 'gene revolution' is being touted as the future of the country's agriculture, in order to maintain food security and feed a growing population (Qaim, 2003). With the effects of the Bt cotton disaster still being felt, farmers are protesting this move across the country (Herring, 2009)[2]. The future of India's agricultural sector is currently undecided. Will there be a transition towards sustainable farming methods, or towards introducing genetically modified (GM) seeds into the country?

It has been noted that livelihoods must be understood within a structural context (Giddens, 1992). Decisions to adopt a certain farming method or model are based on a myriad of factors, including the national and global political economy. Thus, the context in which the farmers of Bajwada operate, and the structure that influences their perceptions, goals and decisions, must be taken into consideration.

2.4 CONCEPTUAL APPROACH

Having argued that both the unpacking of farmer narratives, and taking the political economy of the region into account is important, this study aims to stress the role of discourse in both framing and shaping farmers perceptions and goals.

[2] There is a vast literature about the effects of introducing Bt cotton in the country, as well as the recent heated debate regarding the introduction of Bt Aubergine, which is beyond the scope of this dissertation. Herring (2009), Scoones (2008), Roy (2007) and Nelson (2005) are worth referring to for more information on this topic.

As this literature review has underscored, adoption is neither a dichotomous nor a single factored decision. Conflicting conclusions based on studies in different regions that have differing social, cultural and institutional environments have highlighted the importance of context.

Discourses fundamentally shape how all concepts are thought and spoken about, and therefore acted upon (Foucault, 1972). Therefore, discourses provide important knowledge of the forces that shape public perceptions. Consequently, if we understand the ways environmental problems are socially constructed, we can tailor a range of appropriate solutions. And yet, there have been few empirical studies on the narratives of non-adoption, and the role of dominant discourses in shaping farmer perceptions and attitudes.

Yappa (1996), for example has shown how discourse actively constructs problems and solutions for development using the Green Revolution. Farmers were categorised as progressive or backwards based on their response to new high yielding seeds. Vanclay (2010) has recently examined the role of discourse in shaping farmer behaviour and perceptions of climate change. He points out that discourse analysis is valuable in understanding how the discourses in which farmers are embedded are linked to their behaviour. He emphasises the influence of discourse on beliefs, values and choices, and maintains that an understanding of these discourses offers a new approach to aiding behavioural change. Additionally, Stonehouse (1995) has argued that adoption is based on subjective perceptions or expectations rather than the objective truth. If landholders do not perceive that their goals will be met, adoption will not follow.

Thus, combining these two viewpoints, this work looks at the influence of discourse in shaping farmer goals and perceptions, thereby influencing the adoption of Natu-eco farming. This study examines the power of the development discourse in the village of Bajwada and the role it plays in farmer adoption of Natu-eco farming. It analyses the flow of power and knowledge in shaping farmer goals, aspirations and livelihoods.

In the light of the changing agricultural sector, truly holistic solutions will have to take into account recent history and unequal power relations (Robinson, 2002). As Ahluwalia (2001) has argued, you have to deal with the past to understand the present. Thus, this study also draws on Gupta's (1998) work on the 'post-colonial condition' of farmers in India, and aims to stress the ways in which their perceptions of modernity and development shape their choices. It attempts to uncover the contradictory logic and incommensurable discourses that Bhabha (1992) calls a central trait of this condition.

Additionally, Riggs (2007) has stressed the significance of 'theorizing up', to avoid portraying people as victims. He makes a case for the importance of the 'everyday' and of grounded micro-level perspectives. Consequently, this study grounds its work in the local and everyday realities of particular people and places (Paolini, 1997). It tries to unpack farmer narratives and constructions through the lived experiences and consciousness of ordinary people.

In this section, this study has been contextualized. In the next section, the research strategy and design based on the conceptual approach taken is discussed, along with its limitations.

3. METHODOLOGY

In this section, I begin by introducing the village of Bajwada, and my sample population. I then justify my choice of methods and explain how they attempt to answer my research question. I reflect on my sampling technique, as well as the validity and reliability of my methods. I consider my position as a researcher, and how my views and presence shaped the research conducted. I end by clarifying the constraints and context that shaped the data.

3.1 BACKGROUND & POPULATION

Bajwada is located in the Dewas district of Madhya Pradesh (MP) in central India. The village lies 5 km from the nearest town of Khategaon, and 140 km away from the state capital of Bhopal. It is located in the 'green belt' of MP, known for its highly fertile black soil and high agricultural outputs.

Bajwada is made up of roughly 80 households. The predominant profession in the village is agriculture. Commonly grown crops include wheat, soya and bajra[3]. The farmers of this district are distinguished by their large landholdings and access to water. According to a 2006 census (Government of India, Land Holdings), over 70 per cent of farmers in India own less than one hectare of land. A large proportion of farmers in India are largely dependent on the monsoons, and struggle with the lack of irrigation facilities and declining water tables (Rodell, 2009). The farmers of Bajwada, on the other hand, own fields on the banks of the Narmada River. The landholding size owned on average is 30 acres. According to residents, 90 per cent of households own land. Twenty households own land between 40 and 100 acres. Only ten households own less than ten acres of land.

[3] The Hindi name for pearl millet

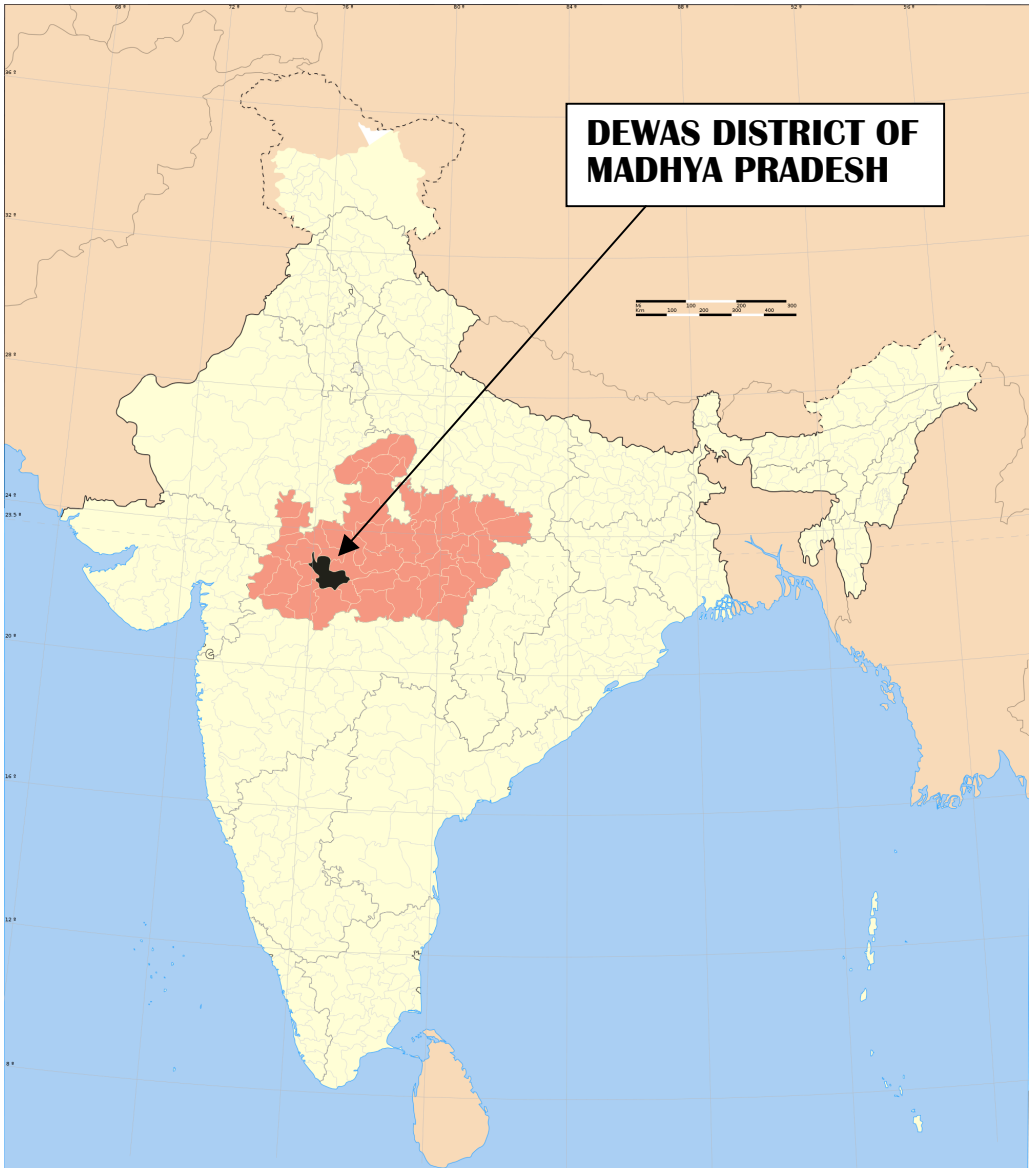

Figure 2. Location of Dewas district in Madhya Pradesh
(Source: Adapted from www.onlinedewas.com)

Most farmers play a 'managerial' role and employ labourers in their fields, and have additional sources of income.

While the road that connects the village to the nearest town is still unpaved, most households have electricity for a few hours per day. Many residents own motorbikes and television sets. A high proportion of the landholder's children are being educated up to at least the fifth grade.

Mr Suchde has practiced and propagated Natu-eco farming for the past five years in the village, having previously been a social worker in Mumbai. He has been involved in the field of rural development for the past 30 years. Currently however, every farmer but one uses fertilisers and pesticides on their fields. The effects of the Green Revolution have been slow to reach the village, and they have only begun to do so in the last ten years, as the district has grown increasingly industrialised.

3.2 RESEARCH DESIGN AND LIMITATIONS

3.2.1 Research Strategy

I conducted field research in Bajwada for ten days in April 2011. This was a preliminary study as neither this technique nor village have been examined before. I chose to explore farmer preferences and attitudes about Natu-eco farming, and their reasons for non-adoption through both a post-colonial and political ecology lens**.**

Despite the many benefits of quantitative methods (Bryman, 2008), I chose to utilize qualitative methods as this study uses an inductive approach, which lays emphasis on the way in which the farmers interpret their social world (Silverman, 2004). I used a combination of semi-structured interviews and participant observation to collect data as I wanted to examine farmer motivations and experiences in detail, and understand their construction of Natu-eco farming. I used participant observation to give meaning to their actions, as well as what they said (Bryant, 1999).

3.2.2 Sampling

I conducted interviews with 18 farmers individually. I spoke to women, children, landless labourers, government officials and officials from NABARD (the National Bank for Agriculture and Rural Development) as well. However, while the others helped give me a holistic perspective, I focused my data collection and analysis mainly on male

landholders who actively practiced farming in Bajwada, and it is their views that are reflected in Chapter 3. The interview work was interspersed with both participant and non-participant observation, as I was frequently included in social events and ceremonies during which I took extensive field-notes.

Due to the limited time available, I used opportunistic sampling. I spoke to as many farmers as I could gain access to. I was fortunate to meet a young social worker from Mumbai who had spent five months in Bajwada and had made friends with the children in the village, since these children turned out to be a great access point. As I walked through the village, they invited me into their homes. Their fathers and grandfathers, the farmers, were hospitable and seemed happy to chat. As the days progressed, my interviews snowballed, and I had farmers themselves call out to me as I walked through the village. In addition, I had a group discussion materialise spontaneously, composed of eight farmers of medium landholding size and varying ages and education levels.

The disadvantage to this form of easy access meant that my sampling was random. I did however manage to speak to an equivalent number of small, medium and large holding farmers to ensure the representativeness of my sample. I made an effort to look for deviant cases, and interviewed the sole adopter, as well as a farmer who had adopted and then abandoned the technique. I also had several conversations with Mr Suchde about his perception of the villagers.

3.2.3 Data collection and analysis

I memorised certain questions to guide the interviews. I conducted the interviews in Hindi, and took detailed notes throughout. Thus, I generated two types of data: fieldwork notes based on observation of life in the village, and transcripts of interviews taken. I transcribed, translated and coded interviews at the end of everyday, noting down salient points that had arisen repeatedly, while it was still fresh in my mind. I found that analysing small bits of data at a time, before putting them together helped me see patterns emerging more quickly. I grouped the data in various patterns, and found that my

categories and concepts changed as I went along. I went through my entire data set at the end of the ten days as well, to help me view my data as a coherent whole.

3.2.4 Relationship with Suchde

I had met Mr Suchde through my grandfather, who supports his work. I stayed with him for the duration of my fieldwork. I made an active attempt not to allow this relationship to influence my views and research. Suchde made every effort to be a helpful gatekeeper, but not influence my investigation. He was keen to understand the non-adoption in the village himself, but was willing to wait until after I had submitted my thesis to discuss the findings.

3.2.5 Reflexivity and Positionality

I had previously spent a week on Suchde's farm in August 2010, evaluating and understanding the method of Natu-eco farming, and observing a farmer-training workshop he was conducting. Thus, I had the advantage of knowing my way around the village and had already established a relationship with Suchde. I found that knowing what to expect in the village saved me a lot of time, and enabled me to focus on my study.

It is worth noting that the first time I visited Bajwada, I did not see the issues and contradictions I discovered during my study. The contents of the MPhil have helped shape my way of thinking and influenced my data collection and analysis. My perspective and my own construction of reality have changed during the past year.

The study was an inductive one, as I had several preconceptions that turned out not to be entirely grounded. I had thought that farmer awareness of the technique, as well as farm holding size and their level of education would be key determinants in non-adoption. I had also hypothesised that social networks and their perception of Suchde had hindered adoption. However, as the interviews progressed, my views changed, and I shifted the focus of my study. My learning curve on the field was rapid. I used my previous

interview experiences to shape future interviews, and could visibly see the difference in how much farmers were willing to disclose.

My study is necessarily informed by my having been born and brought up in Mumbai, India. This is both an advantage and disadvantage. I had the advantage of being fluent in Hindi, and could converse with the villagers easily. Being from the same country gave me a familiarity with their way of life. I understood their complaints about the government, corruption and the slang they used, having grown up reading and thinking about similar issues. However, this was also a disadvantage as I came from the city, and was viewed as an 'outsider'. Interviewees were quick to clarify that I had never farmed before, and did not plan to, at the beginning of interviews. On the other hand, this also meant that they treated me with more respect. Chairs were brought out for me, and I was always offered something to eat and drink.

Figure 3. Observing a discussion amongst farmers (Source: Author)