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WOMEN AND WORK IN IRRIGATED LANDSCAPES

IN RURAL INDIA

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ABSTRACT

In India, the 1992 Reservation Law and the 2006 Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) have formalised women as legitimate actors in rural development. These gender-inclusive policies do not necessarily conform to the traditional domestic role of women, which often precludes them from formally engaging in political processes and labour outside the home. In Northern India, these major policy shifts are illustrated in ancient irrigation management systems. With growing rural outmigration and climatic variability aggravating water resources and food security issues, irrigation management is increasingly dependent on the active participation of women. Yet irrigation management is still widely perceived as a male responsibility. This thesis investigates how women adapt and respond to new institutionally mandated responsibilities and expectations as female leaders and as water users. The research is presented in four complementary papers based on quantitative and qualitative data collected during fieldwork in Delhi and Himachal Pradesh. Three major findings emerged to contribute to theories and evidence of the role of public policies in shaping gendered outcomes for common pool resource management in irrigation system in India. First, gender norms affect women differently depending on their public role in the community. Unlike non-political women, female leaders, as public figures, must secure communal approbation to gain power, credibility, and socio-economic networks. As a result, female leaders shape their political behaviour and policy preferences around local notions of femininity, female morality, and labour-based ideas of expertise. Second, for female water users, gender inclusive policies that legitimise their role as participants in formal political processes and the labour force for irrigation management increase their likelihood to defy gender-based restrictions and engage in formal political processes around irrigation management. Third, providing that formal/legal structures legitimize their actions, women will readily breach gender norms if they are to economically benefit from it. The implication of this research are that policies aimed at providing legal support for women to engage in formal rural development, combined with formalised economic opportunities for

women are effective eroding agents of gendered institutions and are catalysts in facilitating the engagement of women in all areas of rural development. Given worldwide concerns over rural development, this study encourages such governmental actions to enable the effective and full engagement of future generations of women in the formal management of common pool resources.

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PART I: RESEARCH FOCUS

1. INTRODUCTION

Gender inclusive rural development policies have led to contentious debate over their implications for rural development itself and for the socio-economic empowerment of women. How women alter policy-making, whether they *can* alter policy making, and how they benefit from gender-inclusive rural development policies are questions of growing interest in view of increased concern over the impacts of climate variability on water resources and food security. These questions are particularly relevant in India, where recent decentralisation combined with the implementation of gender inclusive policies is disrupting gender norms and changing the decision-making and management dynamics of natural resources management. This thesis examines these issues through the case of the irrigation system in Himachal Pradesh.

The irrigation system in Northern India is an illustrative, yet under-studied, example of the repercussions of gender inclusive resource management policies in the context of patriarchy. Northern India, and particularly Northwest India, are characterised by oppressive gendered institutions (Agarwal, 1997a): the socio-economically determined norms of femininity and masculinity expressed in the communal expectations of gender specific roles, behaviours, knowledge, and labour contribution. Socio-economic reports point to the skewed sex-ration (fewer women per 1000 men), the lower rate of female labour force participation, the greater number of illiterate women compared to men, and the male-hegemony in the control of resources used for food, health care, education, etc., characterising Northern India (ibid.). Gendered institutions are deeply embedded in the operations of the irrigation system, which plays a vital role in the local economy. Unlike Gujarat, Punjab, Haryana, or other regions of Central and Southern India, groundwater is limited in many parts of Northern India, where streams and rivers fed by monsoon or glacier-melt play a substantial role in agricultural production. Rural Himalayan communities have a long history of using *kuhls*, narrow and

annually-dug drainage lines, to capture the surface water and divert it into their fields for irrigation. These systems operate under deeply embedded patriarchal norms and are normally built, controlled and maintained by male villagers (Baker, 2005). Gendered institutions bar women from taking part in the formal management of irrigation.

In past decades, Himalayan communities have witnessed important socio-economic and hydrologic changes in the kuhl systems: rural outmigration for employment has risen while climate variability has increased, resulting in greater hydro-climatic risks, such as flooding or decreased flow from receding glaciers. The ensuing concerns over labour force availability and the durability of critical surface water systems have led to an increase in state interventions in irrigation management. Since 1985, numerous kuhls have been taken over by the state and their management responsibility given to the Irrigation and Health Department (IPH). However, due to the increasing financial burdens faced by IPH, there have been recent incentives to transfer the operation and maintenance of the state-owned irrigation canals to local management, such as the Panchayati Raj Institutions (PRIs). Other schemes have increased the power of PRIs in rural development. The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is one of them. The scheme provides any willing household with 100 days of paid labour at minimum wage. MGNREGA uses this labour surplus to invest into durable assets to boost agricultural return, such as irrigation structures. The scheme is decentralised and based on participatory processes. The PRIs are responsible for registering willing workers and deciding, with villagers, which durable assets to target. Increasingly, PRIs are encouraged to invest MGNREGA labour into irrigation systems. As such, the decentralisation has brought important socio-economic changes in the dynamics of kuhl management and maintenance. One of the major differences is the level of formal involvement of women. Indeed, PRIs comply by the 1992 reservation law whereby a third of elected members must be women,[1] and MGNREGA require a third of beneficiaries to be women.

[1] The Reservation Law states that a minimum of 33 per cent of seats are to be reserved for women, but some states, such as Himachal Pradesh, have increased it to 50 per cent.

With new policies that impose female quotas in PRIs and the rising number of women engaging as labourers in MGNREGA, women are now becoming an integral part of the formal decision-making and active participation in kuhl maintenance. Women are now institutionally expected to contribute to the management and the maintenance of the kuhls. As previously noted, such policies are opposed to existing gender norms – strongly embedded in socio-cultural background and labour practices (Moore, 1973; Eagly, et al., 1995) – and modify the way women are perceived as decision-makers and labour assets for the community (Franceschet, et al., 2009).

In the context of patriarchal norms, the institutionalisation of the role of women in irrigation management raises a few questions. First, how do women perform as political leaders despite strong gender restrictions and their lack of legitimacy from being 'imposed' by quota? Second, can female leaders influence policy making in all areas of governance, including domains traditionally relegated to men, such as irrigation? Third, does institutionalising the role of women in irrigation management lead to changes in the way women engage in formal political processes? Finally, why do women engage in MGNREGA in spite of gender restrictions and how does it affect gender dynamics and rural development?

Despite the formal requirement to include women in all areas of rural management and the increasing involvement of women in MGNREGA in northern India, only a few studies have evaluated the impacts or implications of the changing role of women in irrigation systems (see Ban and Rao, 2008; Chattopadhyay and Duflo, 2004; Clots-Figueras, 2011; Raabe, et al., 2009). One of the few studies of Himachal Pradesh recognised that the inherent bias and limitations of male researchers due to their status 'made it difficult [...] to interact with women farmers' and that 'a different observation point would lead to modifications of subplots and nuances of interpretation that might vary from those presented' (Baker, 2005:217-218).

This research study responds to this explicit research gap to provide new knowledge on the following four areas, in the context of northern India:

a) Female PRI members' leadership strategies in the context of gendered institutions.

b) Female PRI members' policy-making in practice, in the context of gendered institutions.
c) Women's formal political participation in natural water resource management.
d) Socio-political contexts favouring women's engagement in MGNREGA labour force and implications.

A number of policy makers and academics advocate for the complete participation of women in irrigation management in view of creating equitable and sustainable schemes (Ahmed, 2005; van der Mollen, 2001; van Koppen, et al., 2001), but the degree to which women, as conscious and acting human subjects, are willing to engage and the extent to which they really benefit from being an integral part of formal decision making and collective actions is still to be addressed. By assessing women's engagement in formal decision-making and formal labour force against the background of gendered institutions this study aspires to bring a new gender perspective to the existing knowledge on irrigation regimes in Northern India.

This research is situated within theories of state, society, collective action and gender roles. Originally drawing from existing debates around gendered ideas of 'structuration' (Giddens, 1984) and allocative resources, the study evolved to investigate how women respond to and are impacted by state intervention and gender inclusive policies in irrigation management and maintenance. In particular, it focuses on how the state's transfer of irrigation management to gender-balanced PRIs, combined with MGNREGA, affects the traditional organisation and integration of women in the kuhl systems' formal administration and labour organisation (Cleaver, 1999, 2001; Harriss-White, 2004). To examine this question, the research in embedded within theories of gender norms and power (West and Zimmerman, 1987; Kane, 2001), gender norms and labour division (Eagly, et al., 1995; Karakowsky and Siegel 1999) and feminist theories of participation (Carroll, 1989; Jackson, 2012; Staeheli, 1996).

This report is divided into six parts. Part I details the research questions and methodology. In Part I, after introducing the theoretical framework within which the research is embedded in Section 1, the detailed research questions and sub-questions are presented in section 2. These

shape the research structure into four areas of investigation, respectively developed in four separate papers. Subsequent to the research question, Section 3 details the methodology of the research, with the description of the research site and fieldwork design and strategies. Section 4 then explains the analytical strategy of the data collected for this research, focusing on the four papers structuring the research. Parts II, III, IV and V then present the four papers submitted to *Women's Study International Forum*, *Journal of Gender Studies* (Published), *World Development* (in Print) and *Development and Change*, respectively. I then close this thesis with a general conclusion stemming from the four papers and with policy recommendations and future research proposals.

2. THEORETICAL BACKGROUND

The question of the recent engagement of women in irrigation management and development must be understood within the broader context of the 'managing the common' debate (Baker, 2005; Molle and Berkoff, 2007; Mollinga, 2010; Mosse, 2003; Ostrom, 1990; Wade, 1994) and around feminist theories on female participation in rural development. Indeed, before all pieces of the puzzle can be put together, it is important to comprehend why and how irrigation management has been decentralised to formal local governance institutions, and how women have come to integrate formal local governance. In the next section, I therefore review the two separate schools of thought ('Managing the Commons' in the first part and 'Women in development' in the second part) before linking them together to understand how, in some cases, local female farmers are expected to take part in formal decision-making processes and the labour force while in other cases traditional irrigation management still exist.

2.1. Understanding the broader 'commons' question

2.1.1. Managing the irrigation commons: theory

In this section, I will briefly review the theories informing the common pool resource management debate, first as an overview and then with a specific focus on irrigation commons in India. Indeed, India has provided a wide source of literature on common pool management (Agrawal and Ostrom, 2001; Bardhan, 2000; Gundimeda, 2004; Husain and Bhattacharya, 2004; Kerr, 2007; McKean, 2000; Mosse, 1997a-c; Singh, 1994; Wade, 1987). Its long and layered history engraved in a diversity of landscapes, geo-ecologies, as well as population characteristics and customs has inspired numerous discussions on the ways and strategies for natural resources management. With the increase in demographic pressure and hydro-climatic changes, literature has flourished on the analysis of preservation and usage of common pool resource systems of forests, mangroves, tanks and irrigation canals in rural parts of South Asia (Agarwal, 2001; Agrawal, 2001; McKean, 1992; Mosse, 1997a). In his widely cited and criticised paper, 'The Tragedy of the Commons', Hardin (1968) first introduced notions of state control in common resources. He argued that, unless some sort of governmental regulation and notions of private properties existed, uncontrolled use of common resources by independent individuals would lead to their depletion. In response to this, and disputably commencing the still-current debate on the role of the state in managing the commons, Ostrom (1990) argued that local communities would prove better managers given a set of conditions and institutional arrangements found in long-surviving and community managed natural resource management systems. Unlike the state, which according to Ostrom, lacked capacity to deal with resource degradation, local communities can create institutional arrangements for collective action leading to the appropriate management of shared natural resources.

Recent studies on the role of the state in managing irrigation systems in India have debated the interplay of state and communities (Mosse, 2003; Mollinga, 2010). In India, this may have, to some extent, reflected the on-going deliberations at the national level over rural development

strategies. While Nehruvians advocated centralised large-scale resources managements (dams and large canals) Gandhians maintained that development should happen through 'village-centred economic orders' (Mollinga, 2010). Autonomous and self-supporting communities should be sole managers of local resources. This debate was stirred when discourses blamed colonialist and Nehruvian post-colonialist policies for crushing the traditional functioning and resource organisation strategies of rural communities by interfering in their social structure as well as imposing new types of technologies (Gadgil and Guha, 2000). Expanding on this notion of independent and self-governing bodies in rural India, Wade's (1994) 'Village Republics' conceptualised the idea that local communities use scarce water resources equitably because they develop collective actions based on socio-ecological conditions. Mosse (1995, 1997b) partially concurred that collective action is context determined, but unlike Wade, stressed that the critical determinant to the development of equitable uses of resources is the socio-cultural and historical milieu. In a similar school of thought, and echoing the Gandhian perspective, Agarwal and Narain (1997) viewed villages as being the locus of traditional knowledge, established through long-lasting practices of water management. With the intervention of external forces (state, colonies) came the erosion of this critical knowledge, to the detriment of efficient management of common pool resources.

More recent work has criticised the sharp contrasting of these divergent discourses that too often glorify ancient systems of community organisation and resource managements (Attwood, 2007; Mosse, 1997a; 1997b; 1997c; 2001; 2003). Local communities are frequently portrayed as being naturally equal and democratic in public transactions. Mosse (2008) refuted this idea as being 'sociologically naïve and inaccurate in their assumptions of homogeneity [and] co-operation'. In his work on tank irrigation in Southern India (1997c), he highlighted the fact that kin or caste play a role in creating hierarchy in water user groups leading to the often-unequal privilege of certain groups in water usage. Water management thus becomes a reflection of the community system, with embedded socio-political structures (Mollinga, 2010). Notions of

power and authority, engraved in social relations, status and prestige, come to form an integral part of collective actions (Mosse, 2008).

The debate around the management of the commons is particularly relevant to irrigation, because its implications for the local economy are important. Indeed, increasing environmental variability and resulting climatic extremes (droughts, floods) has had severe impacts on agricultural development in South Asia (Parthasarathy, 2006). In India, successions of extensive droughts and floods can have direct repercussions on the economic growth of the country. In 2003, the World Bank reported that the GDP from agriculture had dropped by more than a third in three decades. More recently, the Central Statistics Office predicted that growth in agriculture would drop to 1.8 per cent in the fiscal year 2012-13 as opposed to 3.6 per cent in 2011-12. Agriculture represents the main source of employment and livelihood in rural India, and better water management for irrigation purposes is advocated as the main pillar for improving food insecurity and reducing poverty (ibid.).

The different schools of thoughts around common pool management have successively left their mark on the irrigation system. In line with international discussions on the best management options, and the role of the state and communities in achieving them, canals and tanks have been consecutively nationalised and decentralised in India. As Mollinga (2010: 420) describes,

> '[the] pattern of State versus Community and state versus villages is present in agriculture water policy and politics much more generally than in the conflicts around large dams, and is expressed and advocated by both mainstream and critical voices'.

To a certain extent, the trends in ownership and state involvement in irrigation commons have been scrutinised because they are thought to be indicators of the degree of state control over rural communities (Mosse, 2008). These thoughts are partially engrained in Wittfogel's 'Oriental Despotism' (1957), which assessed the causality factor between central irrigation systems and central political systems. He argued that coercive political institutions over irrigation commons – through ownership, political structure, economic links and technological support – are a way of consolidating political control. State power over irrigation bodies is regarded as a political tool to 'discipline' users of canals and tanks (Mollinga, 2010). The state

is thus perceived as having no other incentive for the control of irrigation commons but to implement hegemonic structure over rural communities. The idealisation of community-management systems has become a prevailing discourse to counterbalance and argue against ideas of state hegemony and control over water resources. Supporters of localised systems point at flaws in the state management system such as the lack of sufficient financial provision or administrative and labour infrastructure to effectively manage irrigation commons (Meinzen-Dick, et al., 2001, 2002; Mollinga, 2010). Against state hegemony, traditional water control systems are then naturally seen as providing a solution to the 'political struggles against the negative impacts of such impositions' (ibid.).

2.1.2. Managing the irrigation common: outcome of the debate in practice

In India, ensuing from this battle of ideas, irrigation resources are now increasingly left into the hands of local communities while the state continues to play a role as provider of a legal framework for water management (Gadhil and Guha, 2000). At the irrigation management level, this means that with the initial trends in national centralisation of water resources, a combined role of the state and communities is being advocated. In 1987, the National Water Policy (MOWR) stated 'efforts should be made to involve farmers progressively in various aspects of management of irrigation systems, particularly in water distribution and collection of water rates' (Ministry of Water Resources, 1987). Following this Irrigation Management Transfer policy, the government started supporting the transfer of irrigation management responsibilities to organised users, often to Water Users' Associations (WUAs). Devolution to traditional village management bodies, decentralisation to lower level of governance (to Panchayati Raj Institution for example) or co-management systems were encouraged (Meinzen-Dick, et al., 2001, 2002).

These patterns of state-village transfer happened in many regions of India. In his study on tank irrigation in Tamil Nadul, Mosse (2003) describes how the functioning of water systems based on traditional water distribution and tank maintenance knowledge and managed by village

committee through voluntary labour had collapsed. As a solution, tank ownership and subsequent management were assigned to the state, which, faced with problems of asset maintenance and water distribution, later looked for transfer strategies to return some power to the communities. One of the strategies chosen by the state at the national level has been the creation of small-scale watershed development programs. Following the loss of impetus of the 1970s' Green Revolution, hard-engineering schemes have been dropped for more micro-scaled and localised projects. Watershed development programs are now being implemented in numerous states in order to harvest rainwater for irrigation and prevent the erosion of cultivable soils (Parthasarathy, 2006; Vaidyanathan, 2008). While local communities are involved in the decision-making and resources management, the state maintains a level of control, mainly through the provision of funds and coordinating actors (for example. World Bank funding and staff).

In addition to localised watershed programs, another relevant illustration of the now-encouraged combined role of the state and local communities is the implementation of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). The scheme, enacted in 2005, is both an employment scheme providing 100 days of paid work for any rural household and a development tool given to local communities to manage their common pool resources. The scheme's major goal is to promote sustainable livelihood in rural India by using local labour to develop durable assets, boosting their agriculture-based economy, while providing income security for poorer people. MGNREGA has the potential to act as a catalyst for watershed development programs. Indeed, priority is given to the development of productive resources – such as improving soil moisture and water availability through rainwater harvesting, canal construction, and afforestation projects (MGNREGA website; Khanna, 2010; Kumar, et al., 2010). The scheme was also initiated following the recent decentralisation concerns, and the decision as to what development work is to be undertaken falls within the hands of PRI members. During annual formal public meetings, PRIs draw up the list of proposed development projects to be undertaken by MGNREGA based on formal demands from

attending villagers. This list, once checked and accepted by the Block Development Office, allows each PRI to receive the funds needed for their chosen project. MGNREGA enables local governing systems to autonomously decide what changes they want for their villages and gives them financial control over projects.

Villages are becoming more self-regulated and self-governing, increasingly relying on processes of participation and consultation (Mayor, 2007). PRIs are being given greater authority and power over funds, hence changing the way irrigation is being managed. The joint role of local governments, state regulatory and funding institutions and MGNREGA also result in a greater complexity in the power distribution in irrigation. Although PRIs are getting greater responsibility, the power relation is not unilateral, from PRIs down to villagers. National or state schemes, and NGO interventions have created a variety of independent groups and self-help groups, unions, and associations capable of putting pressure on local governance institutions (Heller, 2005). In rural areas, numerous self-help groups and organizations exist around irrigation, such as, as the Kuhl Committee (KC) or self-help groups created around cash-crop programs, both of which I will expand on later in the section. Understanding the power dynamics resulting from changes in irrigation management is challenging because institutions exist within complex social hierarchies and codes of conducts. As Heller et al (2007) point out, it is 'difficult to actually isolate the impact of local government given a range of other intervening variables that are either difficult to measure or go unobserved'. As a result, some scholars, such as Kohli (2012), remain skeptical of formal decentralization. Kohli estimates that existing obstacles to PRI performance, such as the power of local influence, corruption, and low level of mobilization of the poor and vulnerable are unlikely to disappear in the near future. Others, such as Mayor (2007), highlight that the power dynamics are nevertheless changing. Participatory processes, combined with greater information sharing and mobility result in the weakening of caste hegemony. Instead local communities are increasingly becoming a class-based system.

All in all, the change in irrigation management is simultaneously leading to changes in power dynamics in the community while being shaped by those same power dynamics. This bi-

directional influence system is particularly true for women. Changes in irrigation management systems are affecting women's role in the community but their role in the community itself is also shaping their capacity to integrate the irrigation management system. I shall expand on the topic in the next two sections.

2.2. Women in rural development

In this section, I review how, parallel to the participation discourses on common pool management, many scholars have highlighted the need for a gender approach to rural development (Zwaterveen, 2008; Zwaterveen and Neupane, 1996). Scholars denounced the often-invisible status of women in water management for agriculture and asserted a need to better integrate them in decision-making (Meinzen-Dick and Zwarteveen, 1997). Researchers insisted that involving women in decision-making and construction of assets for the management and use of common pool resources increases women's sense of empowerment and ownership (Cleaver, 1999; Meinzen-Dick and Zwarteveen, 1997). Men and women are understood as having different priorities regarding the use of common resources such as water, with women being described as primary users of water for domestic consumption, subsistence agriculture, heath and sanitation (Cleaver and Elson, 1995). Involving both genders in local organisations was seen as a way to reduce the social overhead cost of negotiation and co-operation between genders (Cleaver, 2000). This gender perspective has led many organisations and policy-makers to impose gender quotas in participatory development concepts.

However, including women in formal common pool resource management has proved difficult, in particular with regard to gender restrictions. In fact, India is a relevant study site for assessing gender inclusive policies in the context of patriarchy. India is often described as a contradictory country regarding the role and status of women (Guha, 2008). It is a nation praised for having a 'women-friendly' constitution (Nussbaum 2000: 24-25 cited in Smith 2003), but it is also a country condemned for its strong patriarchal traditions (Dube, 1997) and gender inequalities – male to female ratio, subordination of women to their male relatives, disparity in wage, and a

general lower status of women in society (Menon-Sen and Kumar, 2001). It is a nation where numerous female leaders have held meaningful political positions[2], but it is also a place criticized for endless examples of what is described as a failure of women's introduction in the local political world (Bryld, 2001; Deininger, et al. 2011). The Indian reservation law in local councils (Panchayati Raj Institutions, or PRI) in particular exemplifies the ambiguous position of women in politics in the backdrop of local patriarchy. Passed in 1992, the 73rd amendment to the constitution requires the reservation of a minimum of 33 per cent of seats for women in PRIs[3]. The reservation law also enforces a random rotational system, whereby one *panchayat* in three must be reserved for a female *pradhan* (chair). Women have also recently been included in rural development through being formally integrated in the labour force. MGNREGA indeed required a third of beneficiaries to be female workers. In 2011, the national record of MGNREGA reported that almost 49 per cent of the beneficiaries of the 100 days of paid work were women (MGNREGA website).

The integration of women in PRIs however adds another layer of intricacy to power distribution within the local governance institutions. Despite the implementation of women-friendly institutional environments designed to improve women's leadership role in rural India, any positive outcome often seems overshadowed by reports of subservient leadership. The fact is, organisations built around primary identities are usually less inclusive than more secular ones (Heller et al, 2007), and in PRIs, women are judged primarily on their gender (Cleaver, 2001). Women cannot separate their political life from their social role in their community. Policies, even though women-friendly, co-exist with deeply engrained gendered institutions. These are the norms of masculine and feminine behaviour, the expectations of knowledge, and the social and labour roles, shaped over time by the socio-economic environment, which in turn shape the behaviour of women at all community levels (Smith, 2003). Women, in their new role as female PRI leaders, are finding themselves at the boundary of modern and traditional expectations.

[2] The previous president, Pratibha Patil, who held office until July 2012, followed in the path of many female leaders, such as Sarojini Naidu, Sucheta Kriplani or Indira Gandhi.
[3] The states of Madhya Pradesh, Bihar, Uttarakhand and Himachal Pradesh have now increased the proportion of reserved seats for women to 50 per cent.

They are expected to develop leadership skills in modern democratic structures but also model their behaviour to social and labour norms. They have to shape their conduct based on notions of femininity engrained in religion, caste, class, or agriculture practices; in the communal sense of feminine morality; and in marital expectations of subordination and respect. In the patriarchal context, women also face an inherent lack of political legitimacy and expected expertise: after all, women are only in the PRIs because their seat was reserved, but political affaires are normally the domain of men!

Nevertheless, the presence of women in the PRI is expected to bring changes to policy making in rural areas because PRIs are anticipated to function according to Public Choice Models. In the case where the policy-making follows the inclinations of the elected candidate, or in this case if the presence of women brings new types of policies in the panchayats, then a Citizen-candidate model[4] is said to prevail (Osborne and Slivinsky, 1996; Besley and Coate, 1997). If on the contrary no change is seen, then a Downsian model dominates, where the choices – or here gendered preferences – of the elected candidate does not matter for it is the predilections of the electorate that shapes policy outcomes (Raabe, et al; 2009). However, expecting PRIs to be correctly moulded by either Public choice model does not account for gender norms embedded in all public domains of governance (Singh, 2000, in Singh, 2006; Tichenor, 2005).

In fact, there have been numerous studies over the past decades intended to comprehend the effect of the reservation law and MGNREGA on women's empowerment (Jain, 1996; Jayal, 2006; Ray, 1999), on women's engagement in MGNREGA (Johnson, 2009), and on policy provisions in rural areas (Basu, 2003; Chattopadhyay and Dufflo, 2004; Clots-Figueras, 2011; Deininger, et al., 2011; Duflo, 2005; Pande, 2003, Patel, 2008), all of which lead to different conclusions.[5]

[4] Underlying policy-making processes can be modelled by two main Public Choices theories. A Citizen-Candidate model describes a political system where differentiated candidates result in different policy outcomes (Osbones and Slivinski, 1996; Besley and Coate, 1997). It is opposed to a Downsian model where differetiated candidates converge towards making similar policies, based on electorate expectations (Downs, 1957).

[5] These are reviewed in the different papers of this thesis.

Although findings are nuanced from study to study there is nonetheless the common conclusion that patriarchal norms hinder women's efforts to develop as political leaders. Practices such as gender segregation in public (*purdah*) or the assertiveness of male relatives, are described as restricting women in their political roles and functions. Female leaders are looked at as '*biwi-beti*': token members or subservient women manipulated by male relatives (Kishwar, 2010). Intra-community power differences engrained in gendered institutions also play a significant role in shaping decentralised natural resource management systems (Meinzen-Dick and Zwarteveen, 1997). For women, gendered institutions influence their role and behaviour in the public and the private spheres (Rojahn, et al., 1997). Women are expected to perform certain types of work, but also to possess a certain type of feminine moral values that define their *moral capital* (Tichenor, 2005). These in turn shape the type of knowledge and expertise that they are expected to hold (Karakowsky and Siegel, 1999). Women are therefore expected to be actively involved only in areas that are congruent to their gender (Karakowsky and Siegel, 1999; Tambiah, 2003).

Women, however, are not as helpless as sometimes portrayed (Rosaldo, 1974). Numerous scholars have discussed that women are strategic and rational social beings whose embrace of gender norms is not without political and/or social benefits for them (Agarwal, 1992-1997b; Kandiyoti, 1988; Kantor, 2003; Rao, 2012; Smith, 2003). While gender norms could be viewed as a restriction to women's empowerment, they are also a way for women to embrace their status and socially build themselves as respected figures in their social environment. In small communities reputation is an important value (Ostrom, 1990; Ostrom, et al., 1999). Moral capital can be built by abiding to gendered institutions, the socio-economically constructed gender norms of morality, behaviour, labour division and expertise (Kane, 2001). In situations where women have to become active in areas that are not traditionally congruent to their gender, women might chose to counterbalance the destabilised gender-norms by enhancing their feminine moral values (West and Zimmerman, 1987).

Overall, the implications of women's engagement in common pool management are still broadly misunderstood, in particular in the context of gendered institution dynamics. Women are increasingly legitimized in their role as decision-makers and the labour force but face numerous challenges in engaging in domains they do not traditionally engage with. The changing role of women in irrigation is a relevant illustration to the intricacies of the question of women in rural development.

2.3 Putting the pieces together: Women in irrigation in Northern India

The combination of the two schools of thought reviewed earlier is particularly well exemplified in the irrigation system in Northern India. Indeed, the canal system in Northern India, local kuhls, has been traditionally built, operated and maintained by voluntary male villagers (Baker, 2005), while women traditionally used informal means of influencing the decision-making and only worked on the maintenance of the drainage lines in their own fields. However, in the recent decades numerous canals have been taken over by the state. Initially, their management was entirely left to the Irrigation and Health Department (IPH), but since 1985, operation and maintenance of state owned irrigation canals are being transferred to the PRIs. Recently, PRIs have also been encouraged to invest MGNREGA labour in the development and maintenance of the canals. Because the annual MGNREGA investments are drawn by the PRIs, in some irrigation systems, women now form an integral part of the formal decision-making regarding the prioritisation of new assets in their communities, as well as forming part of the formal labour force performing the work.

Overall, the combination of the decentralisation trend with the implementation of the new institutionalised labour force and with the integration of gender-inclusive policies has major repercussions in the management systems of irrigation commons. State interventions change the dynamics of who makes kuhl-related decisions and who works on those systems. Two common pool management systems now co-exist: a) kuhls under traditional, male farmers-based management and voluntary labour system, and b) kuhls under the state-led, PRI-based

management and MGNREGA labour-dependent system, both gendered inclusive institutions. These two divergent institutional models of kuhl management offer a novel comparative framework to examine how gender inclusive policies in irrigation management affect gender dynamics and rural development.

The implications of gender inclusive policies in rural governance are particularly significant in irrigation because the patriarchal canal management system and male-based maintenance labour organisation implies that this area is strongly perceived and portrayed as being a masculine domain of knowledge and activity (Baker, 2005; Lynch, 1991; Zwarteveen, 2008; Zwarteveen and Neupane, 1996). Irrigation is also central to the functioning of communities and carries significant socio-cultural meanings. As Mosse (2003) points out, irrigation commons cannot be viewed as an economic domain exclusively. The relation between water users, shaped by status, the friendships, the rivalries, the seeking of leadership, the need to secure marriages, and of course gender relations, are all important characteristics which determine the way irrigation systems are managed. Decentralisation, with the transfer of management tools to gender equitable PRIs, is therefore expected to have significant social implications by affecting the overall water system management and gender roles in irrigation.

Transferring formal management powers for irrigation into the hands of women and asking them to become active leaders in areas that are traditionally and culturally male-congruent may be challenging. PRIs are likely already subject to pressures from the state, local organisations such as the KC, or local elite, but women must also respond by external expectations, such as matrimonial duties engrained in gendered institutions. The inclusion of women in traditionally male-dominated formal decision-making groups is still poorly documented with regard to their strategies to exert influence, their limitations and the implications for the community and for resource management. Much remains to be understood on whether such 'inclusions benefit women, [on] the dynamics of committee/user group decision-making, or [on] how decisions are taken, positions negotiated, and roles enforced outside the formalised structures' (Cleaver, 1998: 294). As Baker (2005: 213-14) comments, regarding canal irrigation management in

Northern India:

> 'the increased interaction with state entities […] reinforces gender inequalities because of the cultural prescriptions against women's participation in public arenas, the assumptions of many government bureaucrats that farmers are male, and their perception that men, not women, should be interacting with government officials regarding kuhl management decisions.'

Whether it is to understand how women sitting on committees can effectively influence the decision-making, to verify the idea that women are 'fully active human subjects' with choices and avenue to fulfil their own interests in patriarchal systems of irrigation management (Jackson, 1998), or to understand the socio-political and agrarian reasons behind the feminisation of formal governance and labour and their repercussions, the study of women in institutionally decentralised or traditional irrigation systems can provide insightful contributions to the literature on gender and irrigation.

3. RESEARCH QUESTION

The overarching research goal is to understand the socio-economic, political, and gender dynamics implications of gender inclusive policies in irrigation in rural India.

In order to answer the questions, the research has four sub-questions:

1 – How do gendered institutions shape women's leadership behaviours and strategies in rural India? (Paper I)

2 – How do female leaders shape decision-making in practice in rural northern India? (Paper II)

3 – How do gender inclusive policies in irrigation management affect the participation of women in formal political processes in northern India? (Paper III)

4 – What are the socio-political and economical reasons for MGNREGA's increased feminisation and how does it impact irrigation development in Northern India? (Paper IV)

Those objectives form the basis for four different papers, discussed in section 5.

4. RESEARCH SITES: BACKGROUND AND METHODOLOGY

4.1. Kuhls and agricultural practices in the Kangra Valley

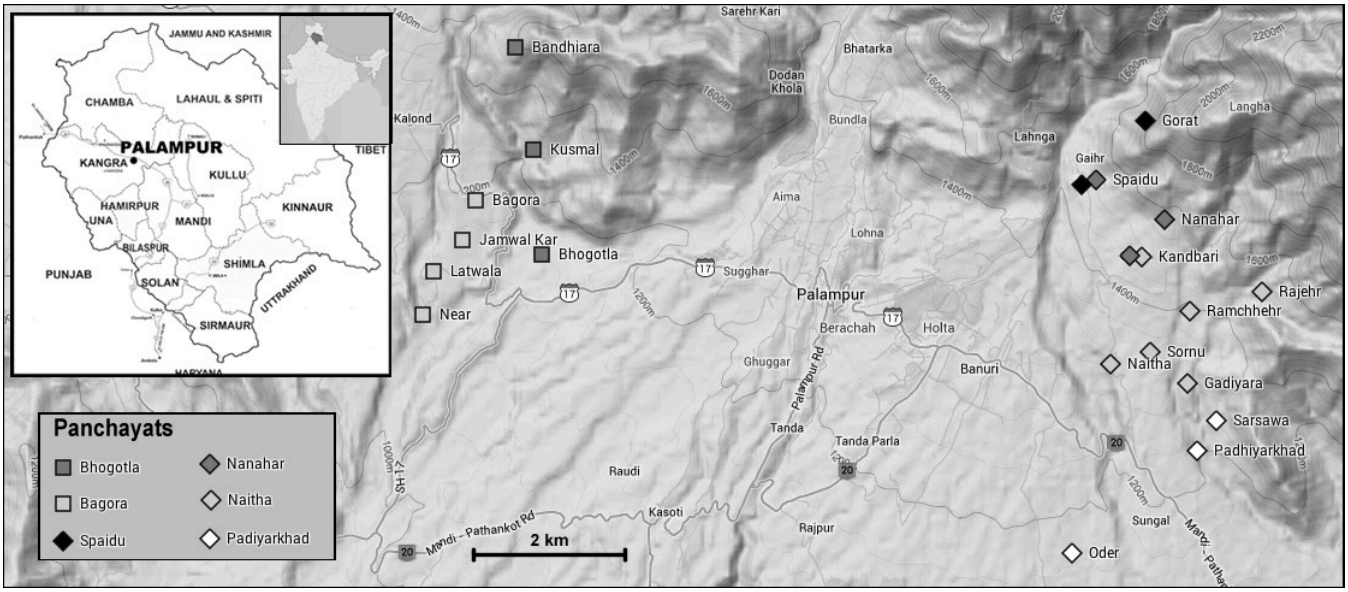


Figure 1: Study site in the Palampur Tehsil with surveyed villages and corresponding panchayats.

The research is based in the Northern State of India, Himachal Pradesh. Like most Himalayan states, hilly terrains, fissured by numerous inter-mountain valleys, characterise the region. The Kangra Valley, located in the Western region of Himachal Pradesh and in the North-central part of the Kangra District, is one such valley. Perched at an altitude of 1,300 meters at its floor level, the valley is enclosed within the steep high mountain range *Dhaula Dhar* in the North – sharply rising some 3,000 meters above the valley floor in less than five kilometres – and the low-lying *Sivalik* hills in the South. Within those natural boundaries, successions of gentle forested slopes and riverine terraces dominate the landscape. Two tehsils (sub-districts) are bounded within the valley: Kangra and Palampur. The latter was chosen as the location for the research (see Figure 1). The Palampur tehsil is characterised by three distinct geographical areas: Dhar, Palam and Changar. The Dhars refer to the upper stretch of the region situated at higher altitudes, with steep-sloped terrains, and the least fertile and easily erodible soil. The Palams, from the local term 'pulum', water, are the most fertile and agriculture-suitable lands.

And finally, the Changars are the lowest-lying terrains, characterised by steep slopes (see Table 1).

Because of the topography of the valley, numerous mountain streams and torrents originating from the *Dhaula Dhar* carve the landscape around Palampur. The gentle slopes in the Palams and the high availability of perennial, snow-fed, surface water from the Dhars has led the region to develop one of the most extensive gravity-flow irrigation networks in the Himalaya (Baker, 2005). According to Rawaj-i-Abpashi (1918 cited in Baker, 2005), each perennial stream crisscrossing the valley supplies water to as many as 40 to 50 different kuhl systems, running from the Dhars to the Palams or further down to the Changars. More than 3,200 kuhls compose the irrigation network in the valley, and while the majority of them irrigate single villages, around 20 per cent supply water to numerous successive villages – some to as much as 40 villages. Ground water is not easily accessible in the region and thus surface water from the kuhl system represents the primary source of irrigation in the valley, accounting for 95 per cent of the net irrigated area (Baker, 2005).

Table 1: Topographic, hydrologic and agrarian characteristics of the three geographical divisions of the Kangra valley.

Area	Description						
	Elevation Range	Slope gradient	Rainfall range	Percentage of total land under cultivation	Reliance on irrigation	Population density	Main land-based activities
Dhar	1250-1500m	Steep to high	2000-3500mm	Less than 30%	Moderate	Low	Irrigated agriculture, pastoralism
Palam	1200-1250m	Mild to Plain	1500-2500mm	More than 60%	High	High	Irrigated agriculture
Changar	900-1200m	High	1000-1500mm	Less than 40%	Low	Moderate	Rainfed agriculture

The topology of the valley does not allow for large farming systems. The land plots are too small and the cultivation methods too labour intensive for farmers to be able to compete at the

market level with other regions, such as Punjab. Instead, agriculture remains mainly a subsistence activity. Almost every household possesses a small amount of land used to grow grain. Kuhl water is thus an essential aspect of the subsistence agriculture system and almost every household relies on it for their crops. Almost all farmers contribute to the kuhl system in order to benefit from it. As such, rural areas in the Palampur tehsil fall directly within the framework of managing the irrigation commons whereby local farmers collectively participate and decide on local rules and policies for distributing and managing the water from the kuhl systems.

Indeed, a male villager, the kolhi, who inherits the role of irrigation manager from his male relatives, is responsible for the distribution of water and the maintenance of the kuhls. Twice a year, before the kharif and rabi[6] sowing seasons, he rings a bell to call all male villagers to perform *khana*, the communal cleaning, repairing, reinforcing, and rebuilding of canal structures. Khana can last from few days to a few weeks, depending on the length of the kuhl and the degree of damage from erosion, heavy rain and flash floods. Khana is also usually more intense before the kharif season as kharif crops, such as paddy, are highly dependent on the quantity and timing of irrigation. Although there exists an implicit belief that beneficiaries at the inlet of the kuhl have a key responsibility in ensuring the continuous flow of water, all men get involved in khana, regardless of their position on the kuhl. For households without a male family member, a fee can be paid to replace the labour contribution[7]. During sowing seasons, adjacent fields are usually irrigated together. Because of this, farmers from close-by fields usually grow the same crops, so that water is needed at the same time. Along the kuhl, upstream fields are irrigated first in the season. Indeed, the cooler climate in the Dhars means that the sowing season happens earlier than in the warmer Palam and Changar areas. During irrigation, a male adult from each irrigated field's household supervises the process to ensure continuous flow and to avoid diversion of the water into other fields.

[6] Rabi crops are the agricultural crops sown in winter and harvested in the spring, such as wheat, gram, barley, mustard, sesame, and peas. Kharif crops refer to the crops sown at the start of the rainy season and harvested before winter. They include rice, millet, sorghum jawar, and tea.
[7] In the Palampur area the fee is usually 150Rs.

Similar to many irrigation societies, and particularly plough-societies, kuhl management has deeply rooted gender norms (Alesina et al., 2011; Pai, 1987). Although women constitute the main labour force in the fields, they are not responsible for any formal management of the irrigation system. They do not officially make decisions on the management nor participate in the maintenance of communal parts of the kuhls. However, women are usually responsible for the domestic side or irrigation and agriculture. They take care of their own drainage lines, which they clean and restore before each sowing season. Women are expected to practice *purdah* and usually interact with the non-domestic world via their male relative. For instance, women who sell their crops on the market usually do so through intermediaries, such as a male relative or neighbours. Women also have informal means of communicating their needs and demands and for influencing the decision-making regarding the kuhls, usually through their male relatives or through other women, such as the kohli's wife.

Women's main activities consist in agricultural and farming work as well as domestic duties such as cooking and cleaning in their houses. There have been important improvement in drinking water provision in rural areas around Palampur and many women have easy access to drinking water through close-by hand pumps (reaching groundwater through deep tube wells) or even in house water piping (using surface water) (IndiaWater, 2013). Amongst the six panchayats studied in the research, four of them had 100% drinking water coverage whilst Naitha and Bhogotla were just short of a universal coverage by a few percent (ibid.). There are also policies that encourage the economic empowerment of women, usually through schemes aimed at providing them with additional income generating activities. For instance, women are taught handicrafts or may be given small loans to start their own business, such as dairy production. Help groups are also created for women to provide loans to each other or buy communal animals, such as bulls[8], or products, such as wedding utensils.

[8] Bulls are expensive to purchase and to maintain. Usually farmers keep two bulls for breeding, but some farmers now organise and share the bulls. Some farmers keep one while others keep another, which they then 'lend' to each other during breeding season.

4.2. Changes in irrigation

Similarly to other Himalayan regions, the Palampur area has been facing dramatic changes in hydrological patterns linked to climate change. More sporadic and intense rains during the monsoon season (late June-September) have caused increasingly destructive flash floods, often damaging the kuhls' structure. In addition, more variable precipitation during winter has decreased the discharge flow of many of the snow-fed streams alimenting the kuhls. Adding to those hydro-climatic variations affecting the flow pattern of the kuhls, socio-economic factors have also come into play and disturbed the traditional kuhl management system. The focus on universal drinking water provision has led to many kuhls being diverted into growing cities, such as Palampur, and used for water supply (IPH Executive Engineer, personal communication). Further, in recent years increasing numbers of people have moved away from full-time farm-jobs to engage in private sector jobs, such as small businesses, jobs in industries, as well as military jobs or government jobs (Public Work Department, Irrigation and Public Health Department, etc.). The increase in urban population itself is creating problems as many kuhls cross through urban areas and become soiled with detritus. The improvement in education in Himachal Pradesh has contributed to a general move away from farm-based income generating activities (Baker, 2005). Indeed, from being the least educated state after Independence, also referred to as the 'backward North State', Himachal Pradesh has been a leader in an important 'schooling revolution' (Drèze and Sen, 1995). By 2001, the state had already surpassed the national literacy level (Census of India, 2001). Now, Himachal Pradesh is considered a leading state in terms of education (Drèze and Sen, 2003) as well as in other areas of development such as sanitation (see Table 2) (Kumar and Singh, 2010)). Over 89.05 per cent of rural men and 73.42 per cent of rural women are literate, as opposed to the national average of 78.60 and 58.80 per cent respectively. Within Himachal Pradesh, the level of literacy in Kangra is amongst the three highest of the state. In the rural population of the valley, which is the largest rural population of all states in India[9], literacy level remains higher than the state's

[9] hpplanning.nic.in

national level for both men and women (91.42 and 79.64 per cent respectively) (Census of India, 2011). Additionally, Himachal has witnessed a drastic boost in its economy with an average growth rate of 7.6 in the past decade, higher than the national rate of 6.9 (himachal.nic.in). The Monthly Per Capita Expenditure stands at over 1800Rs for rural HP as opposed to the average 1,287Rs for all of rural India (Government of India Planning Commission, 2013). This increase in the population's overall education and economic status entails that younger, more qualified generations have shown an increased disinterest in farm-jobs in favour of private and public sector jobs. This in turn has affected the overall kuhl systems management. As Baker (2005:60) explains:

> 'the increases in nonfarm employment have dramatically affected the interest and ability of households with access to nonfarm remittances to contribute scarce labour for the repair, maintenance, and management of kuhl systems on which they depend less and less.'

Recent policies are intending to reverse the outmigration of male workers by ensuring a better agricultural return. For instance, because landholding is too small to allow the competitive commercialisation of agricultural goods, HP is increasingly encouraging farmers to convert some of the land for cash crops. Schemes, such as Command Area Development (CAD), provide farmers with technical support and seasonal seeds for 25 per cent of the market price. Self-help groups are also formed whereby farmers provide loans to each other for purchasing seeds or communal agricultural machineries. While these policies are favoured by the already well-established road system in the valley,[10] they also put increasing pressure on the irrigation system. Indeed, cash crops necessitate more frequent irrigation. Unlike wheat and rice, which require water every two months, cash crops need to be watered twice a month. Further, cash crops present a greater risk with regard to crop failure. Wildlife, such as monkeys, often destroys crops, particularly in fields that are further away from the villages. To limit the risk of crop damage, farmers usually only convert their closest fields in order to protect them from wildlife.

[10] HP has the greatest road density amongst the mountainous states of India. Despite its hilly topography, in 2011, the state had an average road density of 6995 km/million inhabitant, while the national average was 3130 km/million inhabitant (Government of India 2012)

Table 2: General Population and Hydrological Statistics in rural India, Himachal Pradesh and Kangra district.

		Rural India	Rural Himachal Pradesh	Rural Kangra District
Demography	**Total Population** *[a]*	833 million	6.18 million (0.74% of tot rural National Population)	1.42 million (23% of tot. rural HP pop.)
	Male population *[a]*	428 million	3.11 million	0.71 milion
	Female population *[a]*	405 million	3.07 million	0.72 million
	Population growth *[a]*	12.2%	12.7%	12.8% (for whole district)
	Sex ratio *[a]*	947 women for 1000 men	986 women for 1000 men	1019 women for 1000 men
	Child Sex Ration (0-6)	919 girls for 1000 boys	912 girls for 1000 boys	877 girls for 1000 boys
	Rural Population *[a]*	68.84% of tot. India pop.	89.97% of tot. HP pop.	94.29% of tot. Kangri pop.
Socio-economic characteristics	**Monthly Per Capita Expenditure (Mixed Reference Period)** *[b]*	1,287.17	1800.62 Rs	NA
	% Below Poverty line *[b]*	25.70	8.48	NA
	% Literacy *[a]*	68.90%	81.85%	85.42%
	Male Literacy *[a]*	78.60%	89.05%	91.42%
	Female Literacy *[a]*	58.80%	73.42%	79.64%
	Sanitation status *[c]*	100% coverage by 2054	100% coverage by 2012	NA
Hydrology	**Annual rainfall** *[d]*	1340 mm/year *[c]*	1254 mm/year	2050 mm/year
	Net annual groundwater availibility *[e]*	399 BCM	0.39 BCM	0.06 BCM (only 6% of total irrigation water is provided by private tubewells [d])

[a] Census of India (2011)
[b] Government of India Planning Commission (2013)
[c] India Sanitation Portal (2012)
[d] Hpplanning (2005)
[e] Groundwater Board

Other changes in agricultural practices put pressure on the irrigation system. Increasingly, farmers are changing their cattle management habits. Irrigation water is now used to grow grass. Cattle are kept inside rather than being taken into the mountain to grass. Women and children, normally responsible for taking the animals to grass, now have more free time for other activities. Women are still responsible for cutting the grass, but many report that they prefer this kind of activity, close to home, rather than having to run after the animals in the mountain. Keeping the cattle inside also limits the risk of damage to the fields, in particular to cash crop

fields. It implies however that irrigation water is now becoming essential not only for crops, but also for the animals.

A direct consequence of the increasing difficulty in mobilising a labour force for canal maintenance and yet the growing importance of irrigation for rural development has led the state to overtake the management responsibility of a great portion of the kuhl system in the Kangra valley. Many kuhls' ownership was transferred to the Irrigation and Public Health Department (IPH). Like in other parts of Himachal Pradesh, IPH however faced financial difficulties to ensure that all state-kuhls were fully functioning and repaired. This is partially due to the fact that the department's main concern is drinking water supply and irrigation issues remain low on the priority list (Executive Engineer of IPH in Palampur, Personal communication, April 2011). To deal with the lack of funds, IPH is increasingly working alongside PRIs and MGNREGA to meet the kuhl system maintenance requirements. Kuhl Committees (KCs), formed of elected members representing various kuhls within one area as well as local kohlis, have also been formed to act as 'go-between' institutions to facilitate communication and fund transfer between local irrigation management groups and IPH. For instance, in cases where not enough men are available for khana, the kolhi can ask the KC to hire men to help with the supervision and management of khana. KCs are also key players in incentivising PRIs to invest MGNREGA labour into the rehabilitation/development of kuhls, in particular in state-kuhls where sufficient labour is missing.

In rural areas around Palampur this implies that, while a certain number of kuhls remain under the ownership of farmers and under the control of the kohli, another portion is now increasingly relying on PRIs targeting their MGNREGA investments in the kuhl systems.

4.3. Sampling frame

To assess the repercussions of gender-inclusive policies in irrigation on women and in the background of gendered institutions, two kuhls were purposely targeted to reflect varying levels of women's involvement in formal decision-making and the labour force. Using a stratified

sampling method we selected a community-managed kuhl and a state-managed kuhl. Kushmal Kuhl, is an irrigation canal whose ownership has been transferred from the farmers over to the state and IPH while Kandul Kuhl has always under the management of local farmers. Both kuhls' characteristics are presented in Table 3 and the schematic representation of the sample design is presented in figure 2.

Table 3: Physical and management characteristics of Kandul and Kushmal kuhls, in Palampur Tehsil.

Kuhl	Ownership	Management	Main labour	Length	Source	Panchayats benefiting from the water	Average number of household using the kuhl
Kandul	Community	local communities, kohli, kuhl committee	male farmers, MGNREGA	17km	Awa river	Spaidu, Nanahar, Naitha and Padhiyarkhad	450
Kushmal	State	IPH, kuhl committee	IPH engineers, MGNREGA	10km	Neugal river	Bagora and Bhogotla	300

4.3.1. State kuhl: Kushmal kuhl

Kushmal kuhl is a 10km long canal irrigating a total of 142 hectares. The head of the kuhl, situated in the Dhars, diverts the water from the Neugal River, which is then distributed to the upstream villages *Bandhiara*, *Kusmal*, and *Bhogotla*, encompassed in the panchayat *Bhogotla*. Downstream, water is distributed to the villages *Bagora*, *Jamwal Kar*, *Latwala*, and *Near*, under the jurisdiction of the panchayat *Bagora*. Both upstream and downstream panchayats are headed by a female pradhan. The total number of households benefiting from Kushmal Kuhl water averages 300. Kushmal's ownership from the community to the state was transferred in 1980.

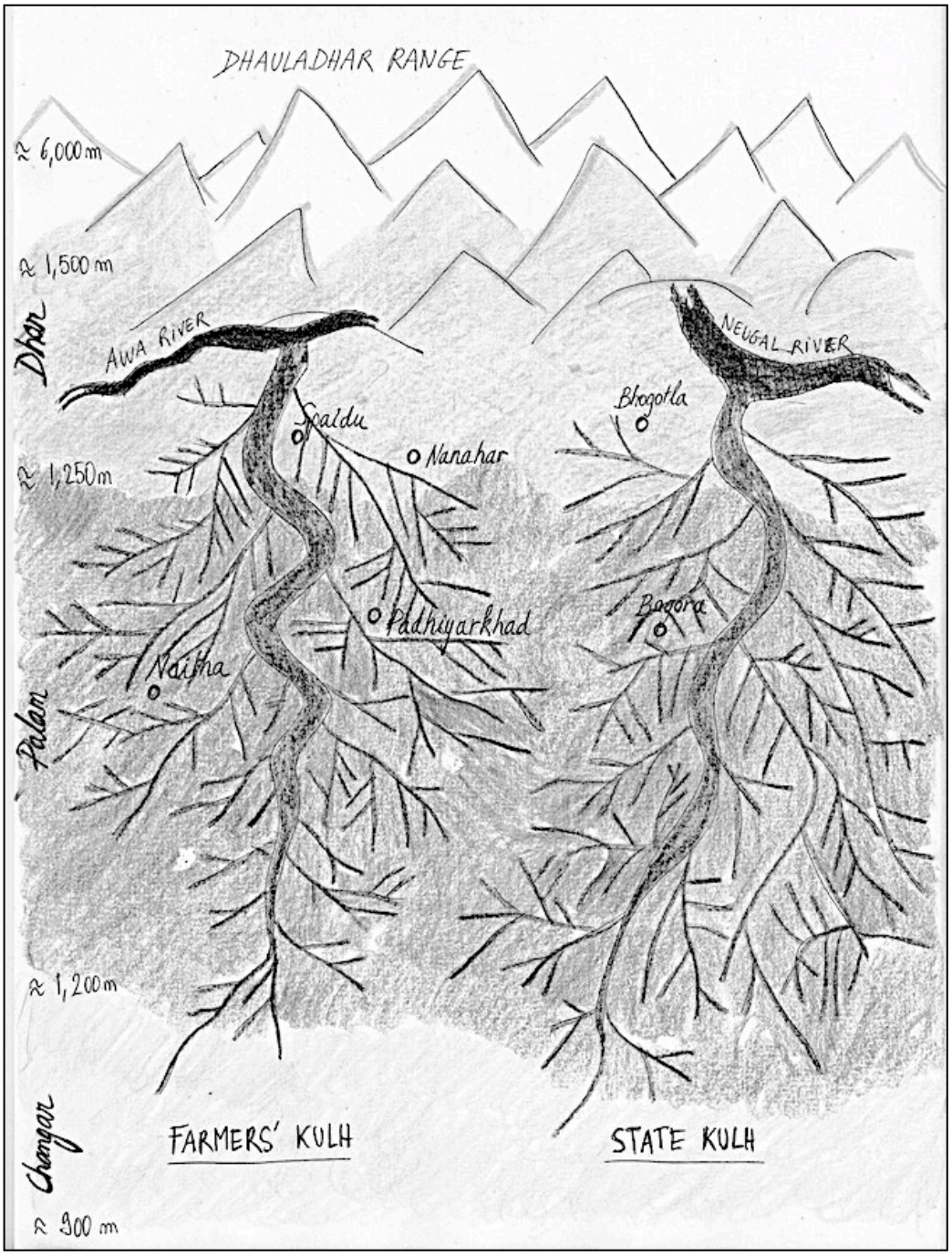
4.3.2. Community kuhl: Kandul kuhl

Kandul kuhl has always remained under the control and ownership of local communities. The kuhl runs for 17 kilometres, diverting water from the Awa River, in the Dhars, and distributing

the water to an average of 400 households: about 180 household in the Dhar area and 220 households in the Palam land. The panchayats irrigated by the kuhl are, from upstream to downstream: *Spaidu*, *Nanahar*, *Naitha* and *Padhiyarkhad*. Upstream, *Spaidu* encompasses the villages *Gorat* and the upper parts of *Spaidu* while the panchayat *Nanahar* covers the lower parts of *Spaidu*, the village *Nanahar*, and the upper parts of *Kandwari*. Both upstream panchayats are female-headed. In the downstream male-headed panchayats, *Naitha* encompasses the lower part of *Kandwari* and the villages *Rajehr*, *Ramchherhr*, *Sornu*, *Naitha*, and *Gadiyara* while *Padhiyarkhad* covers the villages *Sarsawa*, *Padhiyarkhad* and *Oder*. For clarity throughout the thesis, I refer to the panchayats rather than the villages themselves, as they provide a better indication of the geographical location on the kuhl. Indeed, some villages have houses further up on the kuhl, within the jurisdiction of one panchayat, and houses lower on the kuhl, encompassed in another jurisdiction. Finally, while the State kuhl is shorter than the community kuhl, local communities reported that the flows of both canals were relatively equal.[11]

[11] Although there is no existing data on the exact flow of the studied kuhls, members of kuhl committees, kohlis, and local farmers reported that the kuhls were in similar conditions and that they received water is comparable flow amounts. No kuhl provides more security in water flow than the other (in terms of intercepting more or less water from snowmelt or spring sources).

Figure 2. Schematic representation of the study site



4.4. Methodology

The methodology design consisted of a sequenced, mixed methods approach consisting of: a) scoping work (literature review, first visit to the field study area in Palampur district, in

Himachal Pradesh) to establish the study site and research focus; b) sampling strategy; c) instrument development (surveys, interviews); and d) main empirical work. Each of the four sections is discussed below.

4.4.1. Scoping work

Table 4: Key informant interviewed for the research (in addition to focus groups).

Key Informants		Role
Delhi	World Bank staff	Responsible for the World Ban Watershed Development Program
Shimla	Director of Rural Development Department of the Government of Himachal Pradesh	Responsible of state-wise scheme policy implementation for rural development.
Dharamsala	Head of the Forestry Department	Collaborate with the World Bank on the Information on watershed development programs
Lambagawa	Block District Officer	Responsible for approval of PRIs' MGNREGA annual proposal
Palampur	Kuhl Committee President	Work at the interesction between PRIs, Kohlis, and State
	Kolhi	Responsible for the management of kuhls and distribition of water in community managed Kandul kuhl
	Executive Engineer of IPH	Responsible for Drinking and Irrigation water in the Palampur area

Following a literature review, a two-month visit to India, in November-December 2010, was undertaken. Key informants were interviewed in Delhi and in the research site (see Table 4) to develop an initial understanding of statecraft involvement in the Himalayan regions with special regard to irrigation and water conservation, including watershed management. In addition, five different panchayats, in the vicinity of Palampur, were visited, and focus group discussions were carried with local female PRI members. The information collected during the interviews of key informants at the National, state, and local level (Palampur area), as well as during the open meetings with local women and men served as a basis for the drawing of the survey and questionnaire design. The latter was then preliminarily tested during a focus group meeting with local rural women.

4.4.2. Data collection

4.4.2.1. Delhi conference survey

In addition to the main field work in Himachal Pradesh, the research is also based on a survey undertaken in Delhi during a gathering of female PRI members for the 'Women's Political Empowerment Day Celebration' on April 25th and 26th 2011. The seminar, organised by the Social Science Institute targeted the topic of 'Panchayats, Women and Safe Drinking Water' and was attended by over 500 female PRI members from all over India. The survey, printed in Hindi, was handed to all attending women during the first day of the seminar and voluntarily self-completed and returned by the respondents over the duration of the seminar. Women were encouraged by the conference hosts to complete the survey and return them to the researcher.

4.4.2.2. Palampur survey

The main survey was undertaken during a second two-month trip to Himachal Pradesh, in March/April 2011. Women whose fields benefited from irrigation water from the either the Kandul or Kushmal kuhls were targeted by the survey. A team of six local female enumerators – three from Kandul Kuhl and three from Kushmal Kuhl – were trained during two and half days, followed by a pilot day in the field. Findings from the pilot informed the final survey design. Each enumerator was trained to individually interview one adult woman over 18 years in each household – away from male relatives and randomly chosen. Following a simple random sampling design, 300 households in the Kandul watershed and 300 in the Kushmal watershed were interviewed in their local dialect, Kangri. In addition, all PRI members, from all six panchayats (four in Kandul and two in Kushmal) were interviewed during one of the annual Gram Sabhas meetings (Public Forums) at the beginning of April 2011. In each PRI, one trained female enumerator interviewed each member separately, before the start of the meeting.

4.4.3. Instrument development

4.4.3.1. Delhi conference survey

The questionnaire consisted in three main sections with multiple-choice questions and ranking questions, all introduced by an explanatory paragraph on the topic of investigation (See appendix). The first section targeted the geographical background and irrigation practices in the region of origin of the respondent. The second section asked respondents about their political behaviour and motivations. Finally, the third section investigated the respondent's preferences for MGNREGA investments as well as opinions on gendered labour allocation under the MGNREGA scheme.

4.4.3.2. Palampur Survey

Two sets of questionnaires were prepared: one for the PRI members, and one for the household surveys (see appendix). The questionnaires were identical in both kuhls. The questionnaires were developed and translated with the help of a local interpreter with previous experience as a project facilitator on the World Bank funded Watershed Development Project in Himachal Pradesh. The PRI survey consisted of three main sections, with simple, multiple choice, ranking, and open questions. The first part aimed at identifying the PRI members' background in terms of household characteristics and geo-hydrological characteristics of village of origin. A second section asked respondents about their political behaviour within the PRIs as well as political motivations. Finally a last section investigated the members involvement with MGNREGA as well as their preferences in terms of investments to be prioritised.

The household survey consisted of five sections, also composed of simple, multiple, ranking and open questions. Similarly to the PRI survey, the first section investigated the respondent's socio-economic background in terms of household characteristics, caste, class, education, income generating activity, as well as geo-hydrological characteristics of the village of origin. A second section focused on the agricultural practices (land, crops, labour type, etc.) while the third section targeted irrigation practices (involvement with kuhl management and water

availability). The fourth part of the survey asked respondents about their engagement with MGNREGA as well as their personal preferences in terms of what MGNREGA investment should be prioritised. Finally the fifth section targeted the political involvement of the female respondent in terms of vote casting, motivations for participation and level of participation in local governance quorums.

4.4.4. Main empirical work

The data collected from the Palampur and Delhi surveys are summarised in Table 5. The analysis of data and communication of results is presented in four complementary academic papers[12]. Data sets were analysed and treated separately for each paper (see Table 6). The overall thesis can be divided into two groups of papers. Two focus on women's political performance in PRIs in the context of gendered institutions. These papers look at women as recently introduced formal decision-makers into the traditionally masculine domain of common pool management, with special attention to their political strategies (Paper I) and gender-based restrictions (Paper II). The other two papers target rural women in Northern India who are not engaged in the PRIs. These papers investigate whether gender inclusive policies which institutionalise women as decision-makers and the labour force (MGNREGA) in irrigation affect other socio-economic aspects of their lives, such as participation in formal politics (Paper III) or in MGNREGA itself (Paper IV). The papers are explained in more details below.

[12] The papers are presented in their submitted form.

Table 5: Description of research data from the household survey, the PRI survey, and the Delhi Conference survey

Data set	Household survey	PRIs	Delhi conference
Location	Households using water from *Kushmal* kuhl (state-owned irrigation canal) and *Kandul* kuhl (farmer-owned irrigation canal) in the vicinity of Palampur, Himachal Pradesh, India. Panchayats in *Kushmal*: *Bagora* and *Bhogotla*. Panchayats in *Kandul*: *Spaidu*, *Nanahar*, *Naitha* and *Padhiyarkhad*.	*Panchayati Raj Institutions* (PRIs) from *Kandul* kuhl and *Kushmal* kuhl' watersheds, in the vicinity of Palampur, Himachal Pradesh, India. PRIs from *Kushmal*: *Bagora* and *Bhogotla*. PRIs from *Kandul*: *Spaidu*, *Nanahar*, *Naitha* and *Padhiyarkhad*.	Delhi, conference on 'Panchayats, Women and Safe Drinking Water', on occasion of the Eighteenth Women's Political Empowerment Day.
Surveying method	3 trained female enumerators for *Kandul*. 3 trained female enumerators for *Kushmal*. Randomised selection of households.	1 trained enumerator per PRI. All members of PRI surveyed.	Questionnaire distributed during the conference and voluntarily completed by attendees.
Duration	3 days of training for enumerators (with 1 day of field practice). Data collected simultaneously in all locations over a period of 2 weeks, end of March, beginning of April 2011.	Data collected in all six PRIs simultaneously by 6 trained enumerators (same enumerators as for household survey). The survey was undertaken during 1 day, on the occasion of *Gram Sabbas* (Annual public meeting), on the 3rd of April 2011.	Survey completed voluntarily by attendee of the conference on the 25th of April 2011.
Respondents	1 adult female over 18 years per household.	pradhans (head of PRI) and all members of PRIs (male and female).	Female members of PRIs from all over India, attending the conference.
Sample size	Total: 600 respondents, 593 usable questionnaires. *Kushmal*: 294 respondents. *Kandul:* 299 respondents	Total: 41 respondents, all usable. *Kushmal*. *Bagora*: 6 members. *Bhogotla*: 1 pradhan + 5 members. *Kandul*. *Spaidu*: 1 *pradhan* + 6 members. *Nanahar*: 1 pradhan + 7 members. *Naitha*: 1 pradhan + 5 members. *Padhiyarkhad*: 1 pradhan + 7 members.	67 respondents, all usable.
Survey's focus	Economic background. Agriculture practices. Involvement with kuhls. Understanding of kuhl management. Involvement with MGNREGA. Political interests/motivations.	MGNREGA preferences. Policy preferences regarding land and water development. Political background and motivations.	Political background and motivations. Agricultural practices. MGNREGA preferences.
Limitations	Not longitudinal study: data collected at only one point in time (rabbi dry season) with not follow up study. (more limitations in conclusion)	Questionnaire from Bagora's pradhan unusable as she failed to complete the full survey before the start of the public quorum.	Sample restricted by literacy and language barrier. Only Hindi-reading women could answer the questionnaire. Self-reported (risk of bias and interference). No longitudinal study.

4.4.4.1. Paper I

The first paper, entitled 'Playing by Gendered Institutions. The Emergence and Performance of Female Leaders in Rural India' targets the question of women's political behaviour in the context of PRIs and gendered institutions. The Indian reservation law is often criticised for female leaders' political impotence in the face of patriarchal gendered institutions. In line with literature arguing that women can benefit from abiding by gendered institutions, this paper re-examines women's subordinate behaviour against theories of moral capital and the patriarchal bargain. Existing literature on the reservation law is used to contextualise the discussion, and the topic is empirically assessed using the Delhi data, obtained from 67 female local leaders from across India, and qualitative data from the study on female leaders in Himachal Pradesh. Overall, this paper suggests that female leaders can be strategic political actors: by abiding by gendered institutions, they can gain political power while maintaining existing interpersonal reciprocal transactions to retain socio-economic security in their household and community. This paper was submitted to *Women's Studies International Forum* and is presented in its submitted form in Part II of this report.

4.4.4.2. Paper II

The second paper is entitled 'Gender and Public Choice in Rural India: can Female Leaders really Influence Local Governance?' It examines how women are shaping public decision-making in practice, in the context of established quotas that formalise the presence of women in local governance in rural India. This paper, based on the PRI survey carried out in four female-led and two male-led local governance institutions in Himachal Pradesh, empirically analyses decision-making based on competing Public Choice models. Results indicate that Public Choice theories fail to accurately predict decision-making because they do not account for embedded norms of gendered labour division. Female leaders can be constrained in their policy-making by the gender-congruence of certain political tasks. This paper suggests that in the case of female-congruent political domains, such as health and education, a Citizen-Candidate model might

best predict female-led decision-making processes while in the case of male-congruence, such as irrigation and land development, a Downsian model might prevail. This paper has been published in *Journal of Gender Studies* and is presented in its published form in Part III.

4.4.4.3. Paper III

Paper III is entitled 'Stepping into Formal Politics: Women's Engagement in Formal Political Processes in Irrigation in Rural India'. The paper discusses how gender quotas, decentralization of irrigation management, and reliance on MGNREGA for labour provision challenge the traditional patriarchal canal management system by institutionalizing women as formal decision-makers and members of the irrigation labour force in northern India. It is based on the household survey consisting of 592 women in rural Himachal Pradesh and quantitatively analyses how these policies affect women's engagement in formal political processes. Results indicate that factors from the private and individual domains influence female participation in formal political processes. Most importantly, India's gender inclusive policies provide women with the opportunity to legitimately engage in formal political processes governing resource management. The paper was accepted in *World Development* and is currently in print. It is presented in its publication version in Part IV.

4.4.4.4. Paper IV

Paper IV entitled 'Women in MGNREGA: Understanding the Feminisation of the Labour Force in Rural India', assesses the causes and repercussions of women's engagement in MGNREGA. There is ample evidence that MGNREGA brings economic benefits to poor, disadvantaged women. However, little is understood about the socio-political processes that favour their engagement in MGNREGA in the context of patriarchy and the scheme's potential transformative effects on gender norms of conduct and labour division. This paper examines these questions by investigating the political, socio-economic and agricultural background of the 593 women of the household survey and quantitatively analyzing their engagement in MGNREGA, in the context of the male-dominated irrigated landscape of Himachal Pradesh.

Further, it assesses gendered labour preferences of the 41 PRI members from the PRI survey. Results indicate that 1) more gender inclusive political processes favour the enrolment of women in MGNREGA; 2) poor and vulnerable women are more likely to engage in MGNREGA; 3) women are exclusively interested in MGNREGA from an economic standpoint and are indifferent to its asset development potential; 4) while for many women MGNREGA benefits outweigh gender considerations, PRIs are inclined to respect gendered division of labour. Overall, as more women enter MGNREGA unconcerned by rural asset development outcomes, PRIs risk diverting labour force away from masculine tasks, to the detriment of other assets such as irrigation. This paper has been submitted to *Development and Change* and is presented in Part V in its submitted version.

REFERENCES

Agarwal, A. and Narain, S. 1997. *Dying Wisdom: rise, fall and potential of India's traditional water harvesting systems*. 4th Citizen's Report on the State of India's Environment. Centre for Science and Environment. New Delhi.

Agarwal, B. 1992. The Gender and Environment Debate: Lessons from India. *Feminist Studies*. Vol. 18(1). Pp. 119-158.

Agarwal, B. 1997a. Gender, Environment, and Poverty Interlinks: Regional Variation and Temporal Shifts in Rural India, 1971-91. *World Development*. Vol. 25(1). Pp. 23-52.

Agarwal, B. 1997b. 'Bargaining' and Gender relations: within and beyond the household. *Feminist Economics*. Vol. 3(1). Pp. 1-51

Agarwal, B. 2001. Participatory exclusions, community forestry, and gender: An analysis for South Asia and a conceptual framework. *World Development*. Vol. 29(10). Pp. 1623-1648.

Agrawal, A. 2001. Common Property institutions and sustainable governance of resources. *World Development*. Vol. 29(10). Pp. 1649-1672.

Agrawal, A. and Ostrom, E. 2001. Collective Action, Property Rights, and Decentralization in Resource Use in India and Nepal. *Politics and Society*. Vol. 29(4). Pp. 485-514.

Ahmed, S. 2005. *Flowing Upstream: Empowering Women Through Water Management Initiatives in India.* Environment and Development Series. Centre for Environment Education. Ahmedabad.

Alesina, A., Guiliano, P. and Nunn, N. 2011. On the Origins of Gender Roles: Women and the Plough. IZA Discussion Papers 5735. Institute for the Study of Labour.

Attwood, Donald W., 2007. 'Small is Deadly, Big is Wasteful. The impact of Large-scale Industrial Systems in Western India'. In D. Arnold and R. Guha (eds) *Nature Culture Imperialism. Essays on the Environmental History of South Asia* (pp. 210–36). Delhi: Oxford University Press.

Baker, M. 2005. *The Kuhls Of Kangra: Community-Managed Irrigation in the Western Himalaya.* University of Washington Press. Seattle. United States.

Ban, R. and Rao, V. 2008. Tokenism or agency? The impact of women's reservations on panchayats in South India. *Economic Development and Cultural Change*. Vol. 56. Pp. 510–530.

Bardhan, P. 2000. Irrigation and Cooperation: An Empirical Analysis of 48 Irrigation Communities in South India. *Economic Development and Cultural Change.* Vol. 48(4). Pp. 847-865).

Basu, A. 2003. Gender and Governance: Concepts and Contexts. In: UNDP (ed). *Essays on Gender and Governance* (pp. 20-58). Delhi: UNDP.

Besley, T. and Coate, S. 1997. An Economic Model of Representative Democracy. *The Quarterly Journal of Economics*. Vol. 112(1). Pp. 85-114.

Bryld, E. 2001. Increasing Participation in Democratic Institutions Through Decentralization: Empowering Women and Scheduled Castes and Tribes Through Panchayat Raj in Rural India. *Democratization*. Vol. 8(3). Pp. 149-172.

Carroll, S. J. 1989. Gender Politics and the Socializing Impact of the Women's Movement. In R. Sigel (Ed.), *Political Learning in Adulthood* (pp. 306-39). Chicago. London: The University of Chicago Press.

Chattopadhyay, R. and Duflo, E. 2004. Women as Policy-makers: evidence from a randomized policy experiment in India. *Econometrica*. Vol. 72(5). Pp. 1409-1443.

Census of India. 2011. *Office of the Registrar General and Census Commissioner, India*. [Census of India]. Available from: http://www.censusindia.gov.in/Tables_Published/Basic_Data_Sheet.aspx [Accessed on: 18/06/12].

Central Groundwater Board. Himachal Pradesh. [Central Groundwater Board]. Available from: http://www.cgwb.gov.in/gw_profiles/st_hp.html [Accessed on: 18/06/12].

Cleaver, F. 1998. Choice, complexity, and change: Gendered livelihoods and the management of water. *Agriculture and Human Values*. Vol. 15. Pp. 293-299.

Cleaver, F. 1999. Paradoxes of Participation: Questioning Participatory Approaches to Development. *Journal of International Development*. Vol. 11. Pp. 597-612.

Cleaver, F. 2000. Moral Ecological Rationality, Institutions and the Management of Common Property Resources. *Development and Change*. Vol. 31. Pp. 361-383.

Cleaver, F. 2001. Institutions, Agency and the Limitations of Participatory Approaches to Development. In: Cooke, B. and Kothari, U. (eds.). *Participation: The New Tyranny?* (pp. 36-55). Zed Books. London. New York.

Cleaver, F. and Elson, D. 1995. *Women and water resources: Continued marginalization and new policies.* Gatekeeper series no. 49. Sustainable Agriculture Programme of the International Institute for Environment and Development.

Clots-Figueras, I. 2011. Women in politics. Evidence from the Indian States. *Journal of Public Economics.* Vol. 95. Pp. 664-690.

Deininger, K., Jin, S., Nagarajan, H. and Fang, X. 2011. Does Female Reservation Affect Long-Term Political Outcomes? Evidence from Rural India. Policy Research Working Paper 5708.

Drèze, J. and Sen, A.K. 1995. *India: Economic development and social opportunity*. Oxford University Press. Delhi. New York.

Drèze, J. and Sen, A. 2003. Basic Education as a Political Issue. In: Tilak, B.G. (ed.). *Education, Society and Development: National and International Perspectives.* APH. New Delhi.

Downs, A. 1957. *An Economic Theory of Democracy*. New York: Harper Collins.

Dube, L. 1997. *Women and Kinship. Comparative Perspectives on Gender in South and South-East Asia*. New York: United Nation University Press.

Duflo, E. 2005. Why Political Reservation? *Journal of the European Economic Association.* Vol. 3(2-3). Pp. 668-678.

Eagly, A.H., Steven, J.K. and Makhijani, M. 1995. Gender and the Effectiveness of Leaders: A Meta-Analysis. *Psychological Bulletin*. Vol. 117(1). Pp. 125-145.

Franceschet, S., Krook, M.L. and Piscopo, J.M. 2009. The Impact of Gender Quotas: A research Agenda. Paper presented at the Annual Meeting of the American Political Science Association. Toronto. Canada. September 3rd-6th.

Gadgil, M. and Guha, R. 2000. *The Use and Abuse of Nature. Incorporating: This Fissured Land. An Ecological History of India. Ecology and Equity.* Oxford University Press. New Delhi.

Giddens, A. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge (UK): Policy Press.

Government of India Planning Commission. 2013. *Press Note on Poverty Estimates, 2011-12*. Delhi: Government of India Press Information Bureau.

Government of India. 2012. *Basic road statistic of India, 2008-09, 2009-10 & 2010-11.* New Delhi: Ministry of Road Transport and Highways, Transport Research Wing.

Guha, R. 2008. *India after Gandhi: the History of the World's Largest Democracy*. London: Pan Macmillan.

Gundimeda, H. 2004. How 'sustainable' is the 'sustainable development objective' of CDM in developing countries like India? *Forest Policy and Economics*. Vol. 6(3-4). Pp. 329-343.

Hardin, G. 1968. The Tragedy of the Commons. *Science.* Vol. 162. Pp. 1243-1248.

Harriss-White, B. 2004. 'Labour, gender relations and the rural economy'. In: Harriss-White, B. and Janakarajan, S. (eds.). *Rural India Facing the 21st Century*. Anthem. London.

Heller, P. 2005. Reinventing Public Power in the Age of Globalisation. Decentralisation and the Transformation of Movement Politics in Kerala. In: R. Ray and M. Fainsod Katzenstain (eds). *Social Movements in India. Poverty, Power, and Politics* (pp. 79-108). Oxford: Rowman & Littlefield Publishers, Inc.

Heller, P., Harilal, K.N. and Chaudhuri, S. 2007. Building Local Democracy: Evaluating the Impact of Decentralisation in Kerala, India. *World Development.* Vol. 35(4). Pp. 626-48.

HP Planning Commission. 2005. *Himachal Pradesh Development Report*. Academic Foundation.

Husain, Z. and Bhattacharya, R. 2004. Common pool resources and contextual factors: Evolution of a fishermen's cooperative in Calcutta. *Ecological Economics.* Vol. 50 (3-4). Pp. 201-217.

India Sanitation Portal. 2012. High on hygiene, Himachal to get Nirmal Pradesh status soon. [India Sanitation Portal]. Available from: http://indiasanitationportal.org/1930 [Accessed on: 18/06/12].

IndiaWater. 2013. Available from: http://indiawater.gov.in/imisreports/nrdwpmain.aspx [Accessed on 27/11/13].

Jackson, C. 1998. Gender, irrigation, and environment: Arguing for agency. *Agriculture and Human Values*. Vol. 15. Pp. 313-324.

Jackson, C. 2012. Speech, Gender and Power: Beyond Testimony. *Development and Change.* Vol. 43(5). Pp. 999-1023.

Jain, D. 1996. Gender in Development. UNDP Monograph Series no. 5. New York: UNDP.

Jayal, N.G. 2006. Engendering Local Democracy: the Impact of Quotas for Women in India's Panchayats. *Democratization.* Vol. 13(1). Pp. 15-35.

Johnson, D. 2009. How do Caste, Gender and Party Affiliation of Locally Elected Leaders Affect Implementation of NGREGA? Working paper no. 3. Centre for Micro Finance.

Kandiyoti, D. 1988. Bargaining with Patriarchy. *Gender and Society*. Vol. 2(3). Pp. 274-290.

Kane, 2001. *The politics of moral capital*. Cambridge University Press. Cambridge.

Kantor, P. 2003. Women's Empowerment Through Home-based Work: Evidence from India. *Development and Change.* Vol. 34(3). Pp. 425-445.

Karakowsky, L. and Siegel, J.P. 1999. The Effects of Proportional Representation and Gender Orientation of the Task on Emergent Leadership Behavior in Mixed-Gender Work Groups. *Journal of Applied Psychology.* Vol. 84(4). Pp. 620-631.

Kerr, J. 2007. Watershed Management: Lessons from Common Property Theory. *International Journal of the Commons.* Vol. 1. Pp. 89-109.

Khanna, P. 2010. How secure is National Rural Employment Guarantee as a Safety Net. [Global Labour University]. Available from: http://www.global-labour-university.org/fileadmin/GLU_conference_2010/papers/52._How_Secure_is_National_Rural_Employement_Guarantee_as_a_Safety_Net.pdf [Accessed on 5/07/11].

Kishwar, M.P. 2010. Demeaning Women's Empowerment. [Outlook India]. Available from: http://www.outlookindia.com/article.aspx?264628 [Accessed 23/08/11].

Kohli, A. 2012. State and Redistributive Development in India. In R. Nagaraj (ed). *Growth, Inequality and Social Development in India. Is Inclusive Growth Possible?* (pp. 194-226). Basington, UK: Palgrave Macmillan.

Kumar, C.A. and Singh, U. 2010. *Water Supply and Sanitation. Rural WSS, Sanitation and Hygiene, India, South Asia*. The World Bank. New Delhi.

Kumar, A., Suna, B. and Pratap, S. 2010. Responding to People's Protests about Poverty: Making and Implementation of the National Rural Employment Guarantee Act (NREGA) in India. [Chronic Poverty]. Available from: http://www.chronicpoverty.org/uploads/publication_files/kumar_suna_pratap_nrega.pdf [Accessed on 5/7/11]

Lynch, B.D. 1991. Women and Irrigation in Highland Peru. *Society and Natural Resources.* Vol. 4. Pp. 31-52.

Mayor, J. 2007. Change in Karnataka over the Last Generation: Villages and the Wider Context. *Economic and Political Weekly*. Vol. 42(8). Pp. 653-660.

McKean, M.A. 1992. Success on the Commons. *Journal of theoretical politics*. Vol. 4(3). Pp. 247-281.

McKean, M.A. 2000. 'Common Property: What Is It, What Is It Good for, and What Makes It Work? In: Gibson, C.C., McKean, M.A. and Ostrom, E. (Eds.). *People and Forests. Communities, Institutions, and Governance.* Massachussets Institute of Technology. Cambridge. Massachusets. US.

Meinzen-Dick, R.S., Knox, A. and Di Gregorio, M. 2001. Collective action, property rights, and devolution of natural resource management: Exchange of knowledge and implications for policy. A Workshop Summary Paper. Zentralstelle für Ernährung und Landwirtschaft. Feldafing, Germany. January. Pp. 40–72.

Meinzen-Dick, R., Raju, K.V. and Gulati, A. 2002. What Affects Organization and Collective Action for Managing Resources? Evidence from Canal Irrigation Systems in India. *World Development*. Vol. 30(4). Pp. 649-666.

Meinzen-Dick, R. and Zwarteveen, M. 1997. Gendered Participation in Water Management: Issues and Illustrations from Water Users' Associations in South Asia. *Women and Water Workshop*. International Irrigation Management Institute. Sri Lanka. 15th – 19th of September.

Menon-Sen, K. & Kumar, A.S. 2001. *Women in India: how free? how equal?* Delhi: United Nations.

Ministry of Water Resources. 1987. *National Water Policy 1987.* Available on: http://cgwb.gov.in/documents/nwp_1987.pdf [Accessed on 18/06/12].

Molle, F. and Berkoff, J. 2007. 'Water Pricing in Irrigation: Mapping the Debate in the Light of Experience. In: Molle, F. and Berkoff, J. (Eds.). *Irrigation Water Pricing. The Gap Between Theory and Practice.* CAB International. Wallingford.

Mollinga, P.P. 2010. The Material Conditions of a Polarized Discourse: Clamours and Silences in Critical Analysis of Agricultural Water Use in India. *Journal of Agrarian Change*. Vol. 10(3). P. 414-436.

Moore, M. 1973. Cross-Cultural Surveys of Peasant Family Structures: Some Comments. *American Anthropologist.* Vol. 75(3). Pp. 911-915.

Mosse, D. 1995. Local institutions and power: The history and practice of community management in the development of tank irrigation systems in south India. In: Wright, S. & Nelson, N. (eds.). *Power and participatory development: Theory and practice*. Intermediate Technologies. London.

Mosse, D. 1997a. The symbolic making of a common property resource: history, ecology and locality in a tank-irrigated landscape in south India. *Development and Change*. Vol. 3. Pp. 467-504.

Mosse, D. 1997b. Ecological zones and the culture of collective action: the history and social organisation of a south Indian tank irrigation system. *South Indian Studies*. No. 3. Pp. 1-88.

Mosse, D. 1997c. The ideology and politics of community participation: tank irrigation development in colonial and contemporary Tamil Nadu. In: Stirrat, R.L. and Grillo, R. (eds.). *Discourse of development: Anthropological perspectives*. Berg Publishers.

Mosse, D. 2001. 'People's Knowledge', Participation and Patronage: Operations and Representations in Rural Development. In: Cooke, B. and Kothari, U. (eds.). *Participation: The New Tyranny?* Zed Books. London. New York.

Mosse, D. 2003. *The Rule of Water. Statecraft, Ecology, and Collective Action in South India.* Oxford University Press. New Delhi.

Mosse, D. 2008. Making and Misconceiving Community in South Indian Tank Irrigation. [Anthropology]. Available from: http://anthropology-bd.blogspot.co.uk/2008/07/making-and-misconceiving-community-in.html [Accessed on: 10/06/12].

Osborne, M.J., Slivinsky, A., 1996. A model of political competition with citizen- candidates. *Quarterly Journal of Economics.* Vol. 111(1). Pp. 65–96.

Ostrom, E. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge University Press. New York.

Ostrom, E., Burger, J., Field, C., Norgaard, R.B. and Policansky, D. 1999. Revisiting the Commons: Local Lessons, Global Challenges. *Science.* Vol. 284(5412). Pp. 278-282.

Pai, S. 1987. Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India. *Social Scientist*. Vol. 15(6). Pp. 16-32.

Pande, R. 2003. Can Mandated Political Representation Increase policy Influence for Disadvantaged Minorities? Theory and Evidence from India. *The American Economic Review*. Vol. 93(4). Pp. 1132-1151.

Parthasarathy, S. 2006. *From Hariyali to Neeranchal. Report of the Technical Committee on Watershed Programmes in India.* Department of Land Resources. Ministry of Rural Development. Government of India.

Patel, S. 2008. She's in Charge Now: An Examination of Women's Leadership in the Panchayati Raj Institutions in Karnataka, India. In: McSweeney, B. G. (ed.). *Another side of India: Gender, Culture and Development* (pp. 8-29). UNESCO. Paris.

Raabe, K., Sekher, M. and Birner, R. 2009. The Effects of Political Reservations for Women on Local Governance and Rural Service Provision. Survey Evidence from Karnataka. IFPRI Discussion Paper 00878. International Food Policy Research Institute. New Delhi.

Rao, N. 2012. Male 'Providers' and Female 'Housewives': a Gendered Co-Performance in Rural North India. *Change and Development*, Vol. 43(5). Pp. 1025-1048.

Ray, S. 1999. The Women's Reservation Bill of India: a political Movement towards Equality for Women. *Temple International and Comparative Law Journal*, Vol. 13. Pp. 53-72.

Rojahn, K., Fischer, A. and Willemsen, T.M. 1997. The Social Identities of Female Leaders in Different Cultural Contexts. *Feminism and Psychology*. Vol. 7(2). Pp. 183-207.

Rosaldo, M. Z. 1974. Woman, culture, and Society: A Theoretical Overview. In: M.Z. Rosaldo and Lamphere, L. (eds), *Woman, Culture and Society* (pp. 17-42). Stanford: Stanford University Press.

Singh, K. 1994. *Managing common pool resources: principles and case studies.* Oxford University Press. Oxford.

Singh, N. 2006. Women Women's s Participation in Local Water Governance: Understanding Institutional Contradictions. *Gender Technology and Development*. Vol. 10. Pp. 61- 76.

Smith, L. 2003. Gender, Norms and Bargaining in Rural India. In: R.N. Gosh, M.A.B. Siddique and R. Gabbay (eds). *Essays on Development Issues. India and the India Ocean Region* (pp. 35-68). Delhi: Atlantic Publishers & Distr.

Staeheli, L.A. 1996. Publicity, privacy, and women's political action. *Environment and Planning: Society and Space*. Vol. 14(5). Pp. 601-619.

Tambiah, Y. 2003. The Impact of Gender Inequality on Governance. In: Human Development Resource Centre, UNDP (ed.). *Essays on Gender and Governance.* UNDP. Delhi. Pp. 60-95.

Tichenor, V. 2005. Maintaining Men's Dominance: Negotiating Identity and Power When She Earns More. *Sex Roles*. Vol. 53(3/4). Pp. 191- 205.

Vaidyanathan, A. 2008. *India's Water Resources. Contemporary Issues on Irrigation*. Oxford University Press. New Delhi.

van der Mollen, I. 2001. *An assessment of female participation in minor irrigation systems of Sri Lanka*. Working Paper 8. International Water Managemnet Institute. Colombo. Sri Lanka.

van Koppen, B., van Etten, J., Bajracharya, P and Tuladhar, A. 2001. *Women irrigators and leaders in the West Gandak scheme, Nepal*. Working Paper 15. International Water Management Institute. Colombo, Sri Lanka.

Wade, R. 1987. The management of common property resources: collective action as an alternative to privatisation or state regulation. *Cambridge Journal of Economics*. Vol. 11. Pp. 95-106.

Wade, R. 1994. *Village Republics: Economic Conditions for Collective Action in South Asia*. Institute for Contemporary Studies. San Francisco.

West, C. and Zimmerman, D.H. 1987. Doing Gender. *Gender and Society.* Vol. 1(2). Pp. 125-151.

Wittfogel, K.A. 1957. *Oriental Despotism, A Comparative Study of Total Power*. Yale University Press. New Haven.

World Bank. 2003. *India: Sustaining Reform, Reducing Poverty*. Oxford University Press. USA.

Zwarteveen, M. 2008. Men, Masculinities and Water Powers in Irrigation. *Water Alternatives.* Vol. 1 (1). Pp. 111-130.

Zwarteveen, M. and Neupane, N. 1996. *Free-Riders or Victims: Women's Nonparticipation in Irrigation Management in Nepal's Chhattis Mauja Irrigation Scheme.* Research Report 7. International Irrigation Management Institute. Colombo. Sri Lanka.

PART II – PAPER I

PLAYING BY GENDERED INSTITUTIONS

The emergence and performance of female leaders in rural India

ABSTRACT

The Indian reservation law is often criticised for female leaders' political impotence in the face of patriarchal gendered institutions. In line with literature arguing that women can benefit from abiding by gendered institutions, this paper re-examines women's subordinate behaviour against theories of moral capital and the patriarchal bargain. Existing literature on the reservation law is used to contextualise the discussion, and the topic is empirically assessed using data obtained from 67 female local leaders from across India and qualitative data from a study on female leaders in Himachal Pradesh. Overall, this paper suggests that female leaders can be strategic political actors: by abiding by gendered institutions, they can gain political power while maintaining existing interpersonal reciprocal transactions to retain socio-economic security in their household and community.

Keywords: Women, Political performance, Gender institution, Moral capital, Patriarchal bargain, India.

1. INTRODUCTION

The 1992 Indian reservation law has formalised women as political leaders in rural communities. The law, introduced in the 73rd amendment to the constitution, requires a third of all local councils (Panchayati Raj Institutions, or PRI) to be chaired by female *pradhans* (chairs) and a minimum of 33 per cent of PRI seats to be reserved for women.[13] However, gender inclusive policies such as the reservation law exist within deeply engrained gendered institutions. These are the socio-economically determined norms of masculine and feminine behaviour, moral values, knowledge, and labour, which shape the behaviour of women at all community levels (Smith, 2003). Since the implementation of gender quotas in PRIs, studies on female leaders' performance often lead to the same conclusion: gendered institutions hinder women's efforts to excel in their political role (Ban and Rao, 2008; Rajaraman and Gupta, 2008; Vissandjee, et al., 2005). There are numerous accounts of female leaders complying with subordinating patriarchal codes of conducts. Gender segregation in public (*purdah*) or the assertiveness of male relatives are common practices that have been characterized as restricting women in their political role and functions. Female leaders are called '*biwi-beti*': token members or subservient women manipulated by male relatives (Jayal, 2006; Kishwar, 2010;). Further, gendered institutions often assume that women lack political legitimacy and perceived understanding of public matters. Formal politics is traditionally the domain of men and the presence of women in PRIs is often perceived as being purely the result of positive discrimination rather than merit.

Yet, while gendered institutions clearly affect women's political performance, women are not as helpless in the face of patriarchy as sometimes portrayed (Rosaldo, 1974). Numerous scholars have discussed how women are strategic and rational social beings who reap political and/or socio-economic benefits within their households and community from the acceptance of gender norms (Agarwal, 1992-1997b; Kandiyoti, 1988; Kantor, 2003; Rao, 2012; Smith, 2003).

[13] The states of Madhya Pradesh, Bihar, Uttarakhand and Himachal Pradesh have now increased the proportion of reserved seats for women to 50 per cent.

Similarly, women in political office must gain popularity in the eyes of the community in order to excel politically. Obeying social norms of feminine virtue earns women prestige, respect, and loyalty. Women thus increase their moral capital, which can be invested to achieve authority and increased influence in politics (Derichs, et al. 2006; Kane, 2001; Tichenor 2005). Additionally, female leaders in rural areas cannot separate their new political life from their traditional societal role. They remain dependent on their community and male relatives for social and economic security. Accepting and adhering to gender norms enables women to remain worthy of protection of their husband and kin. These reciprocal transactions are known as the patriarchal bargain (Kandiyoti 1988; Rao, 2012). Such interpersonal transactions are particularly relevant for women in PRIs. Women entering the non-domestic world of formal politics challenge the patriarchal status quo. Female leaders have socio-economic interests in restoring the patriarchal bargain by displaying enhanced behaviours of submission and modesty in public.

This paper challenges studies criticising female leaders for their apparent submission and adherence to constraining gender norms. I argue that these studies fail to comprehend the political and social benefits political women gain from modelling their behaviour on gendered institutions, such as: respecting social and labour norms engrained in religion, caste, class, or agriculture practices, behaving according to the communal sense of morality and femininity, and obeying marital expectations of subordination and respect. Through the lens of existing literature, supplemented by empirical evidence, I examine how gender institutions provide female leaders with a means of increasing their political power through moral capital while simultaneously securing the patriarchal bargain.

The paper is organised into four sections. In the first, guided by literature on gendered institutions, I assess how socio-economic environments can determine the role and function of women in their society (Agarwal 1992-1997b) and how these, in turn, can affect women political behaviours. In the second section, I review existing literature on the reservation law (Basu, 2003; Campa, 2011; Chattopadhyay and Duflo, 2004; Clots-Figueras, 2011; Deininger,

et al., 2011; Duflo, 2005; Jayal, 2008), illustrating how gendered institutions shape the political performance of female leaders in PRIs. In the third section, I examine how gendered institutions can confer female leaders' benefits through the review of existing theories on feminist politics (Carli 1999, 2001; Kane, 2001; Tichenor, 2005; West and Zimmerman, 1987) and gender norms and reciprocity (Agarwal, 1997a; Kandiyoti 1988; Rao, 2012; Rosaldo, 1974). Finally, in the fourth section, I empirically analyse the political performance of sixty-seven female PRI members from across India to provide illustrative evidence on women abiding by gendered institutions as a political strategy. Finally, this paper concludes with a short section on future prospects. The data was obtained from a survey of 67 female leaders from across India, conducted during the 'Women's Political Empowerment Day Celebration', in April 2011 in Delhi. Observations from a study on female PRI members in Himachal Pradesh are used to enhance the discussion.

2. UNDERSTANDING GENDERED INSTITUTIONS

Before I examine how women can benefit from abiding to gendered institutions, it is important to understand the notion of gendered institutions itself. To do so, it is useful to first revisit the concept of participation and how it has been challenged over the years with the realisation that local norms of conduct challenge women's political engagement.

In local and international organisations, academia, and now often politics, participation in local governance is seen as an essential part of rural development (Blair, 1985; Drèze and Sen, 1995; Faguet, 2004; Johnson, 2001). Enabling members of all castes, wealth, religions, and genders to debate and deliberate upon the management of their common resources ensures adequate and sustainable resource management while contributing to the empowerment of the people (Jayal, 2006). Ostrom (1990) viewed this concept of local participation in governance as a form of social capital, with villagers managing common resources effectively due to their respect of shared notions of trust and social cooperation inherent in their small communities. Feminist

scholars integrated this concept of social capital and insisted that women should be part of the local participation. As one of the pioneers, India implemented the reservation law in 1992 and secured a tier of all local council seats for women. The law intended to address issues of sustainable development and gender integration. Indeed, women have been historically marginalised and oppressed, particularly in patriarchal societies such as India, and often denied access to the public sphere of formal decision making, and having women engage in the management and maintenance of common pool resources was seen as a way of giving them a sense of empowerment and ownership (Cleaver, 1999; Jayal, 2006). Men and women also have different priorities regarding the use of common resources, such as water, and involving both genders in local governing institutions was seen as a solution to reduce the social cost of negotiation and co-operation between them (Cleaver, 2000).

Whist the concept of female political participation has been widely acclaimed as an important step toward sustainable development and towards the advancement of women in society, it is increasingly apparent that participatory models will not function homogeneously across communities (Heller, et al., 2007). Intertwined aspects of political culture with broader social context determined by the cultural, historical, educational, as well as geographical background, form a complex web shaping the functioning of local governments (Van Dyke, 1966). Contrary to previous Western assumptions, politics cannot be separated from social customs (O'Barr, 1975). Participation-based institutions are marked by 'conscious and unconscious' behaviours based on 'acceptable patterns of social interactions' that characterise participants (Cleaver, 2000: 381). These adequate social behaviours are deeply embedded within gender codes of conducts. These codes, called 'gendered institutions', describe gender aspects in the 'processes, images and ideologies, and distributions of power in the various sectors of social life' (Acker, 1992: 567). They operate simultaneously at the institutional, interactional, and individual levels, and shape on-going social practices (Tichenor, 2005). They involve a 'complexity of socially guided perceptual, interactional, and micro-political activities that cast particular pursuits as expressions of masculine and feminine 'nature'' (West and Zimmerman; 1987: 143).

Because gender institutions are deeply enmeshed in the cultural, historical, and geographical setting of communities, men and women behave and interact in ways that are appropriate to these specific settings. These culturally and socio-economically engrained gendered institutions explain many of the gender inequalities and their variations across India (Agarwal, 1997a; 1997b). For instance, although all Indian women are in many ways disadvantaged compared to men (sex ratio, fertility rates, female labour force participation, allocation of subsistence resources controlled by men, health care, rural female literacy rates, land entitlement for women), these inequalities are more pronounced in Northwest India (Agarwal, 1997a). Their greater economic and social vulnerability is partly explained by practices, such as *purdah*, dowry, close-kin marriages, or low female labour force participation (ibid.). Thus, the socio-economic environment shapes gendered institutions and determines the position, role, and opportunities for women in their community.

Socially, gendered institutions can be determined by marital practices. Dyson and Moore (1983) explain that marital customs that forbid women to marry close kin, such as in Northern India, result in women losing the protection of their family, unlike Southern women who marry close kin and preserve their familial support. Further, Northern marital customs require parents to pay large dowries in order to marry their daughter, leading to a preference for sons and high fertility rates (ibid.). These marital practices result in women in Northern India having a lower social status as well loosing their social network leading to more autonomy. They are often expected to remain within the household and abide to traditional signs of modesty in public space, such as performing *purdah* (Agarwal, 1997a).

The notion of seclusion is a particularly important aspect of certain gendered institutions. Female seclusion is often associated with caste, tribes, and religion. For instance, as Rao (2012) points out, the prevalent gender conservatism and seclusion of Northern Indian women do not apply to *Dalits* or Scheduled Castes women as their engagement in public spaces is deemed socially acceptable on the basis of their identity and role as lower caste women. Low-caste and tribe women do not uphold *purdah*, or practice it to a lesser extent, and are less constrained in

working outside the house, unlike higher caste women (Agarwal, 1997a). Finally, religion also determines whether women practice *purdah*, as veiling in Indian Muslims communities is not widespread, although segregation in public spaces remains important (ibid.).

The autonomy of women also comes from their economic status in the community, in particular with regard to their role in agriculture and common pool resources. Regarding the latter, the important relationship between women and common pool resources has already been extensively discussed by Agarwal (1997a; 1997b). As she explains, women, particularly poorer ones, often depend the most on common pool resources, such as rivers, wells, canals, forests, etc., for subsistence and social integration. Because of the domestic and agricultural task they perform, they are the most vulnerable to environmental variability and crisis, such as the contamination or depletion of water bodies, salinization, deforestation, as well as the ensuing deterioration of social systems, such as the disruption of communal and intra-gender cooperation in work and life (ibid.).

Local practices in common pool resource management also shape gendered institutions and the resulting autonomy and role of women in their community. Women do most of the gathering of wood and fodder and fetching of water from rivers and wells (Agarwal, 1992; 1997a). It is not uncommon for them to be the primary economic provider, giving them a source of subsistence independent from men, as well as relative mobility and greater social interactions (Agarwal, 1997b). Dependence on common pool resources reinforces the place of women with the community, while the cash economy or markets, often mediated by men, reinforces their dependence on male relatives, especially in cultures of strong gender seclusion such as Northwest India (Agarwal, 1992).

Agricultural practices have also been identified as important factors in gender roles determinants (Moore, 1973). In India, agrarian work is traditionally separated by gender (Pai, 1987); agrarian ecology and associated gender division of labour can create differences in the societal role of Indian women (Bardhan, 1974; Dyson and Moore, 1983; Holvoet, 2005; Miller,

1981). Women possessing 'high value' agricultural skills (such as rice-based agrarian cultures in Southern India where women's labour is as important as men's) are comparatively more economically advantaged than women coming from 'low value' feminine agrarian cultures such as Northern India where male labour is more important[14] (Alesina et al., 2013; Boserup, 1970). Similarly, women who fetch water for agricultural purposes (in the case of well or surface water irrigation) might have a stronger economic role than women in regions which practice canal irrigation, such as Northern India, where such practices rely on male labour and expertise (Baker, 2005).

Finally, inheritance conventions also impact gendered institutions. Agarwal (1997b) explains that the level of women's dependency on men clearly varies between patrilineal-patrilocal cultures, such as in the Northwest, and matrilineal-matrilocal ones, such as ones found in the Northeast of India. Land rights for women can lead to less restrictive gender norms (ibid.)

In short, the role women play in accessing common pool resources, their role as agrarian labour, and their land-rights, determine not only their perceived value within the community, but also their visibility, their physical mobility, and their integration in social networks. These in turn, shape the gendered institution adopted in different communities. Indeed, gender norms permeate every aspect of the community life (Agarwal, 1997b). As Smith (2003) explains, they are

> 'a type of basal social routine and behavioural controller that constrain a person's "action repertoires", are typically not discrete but have fuzzy boundaries, and critically are shared with other persons typically in close proximity – households, networks and communities - all of whom imperfectly enforce them by various sanctions of social approval and disapproval' (ibid.: 47)

[14] Although, as Rahman and Rao (2004) this causality is difficult to verify, as they do not control for factors determining whether it is the economic role of women which defines the resulting gender norms, or the existing culture itself which affect women's role in agriculture.

3. GENDERED INSTITUTIONS AND THE RESERVATION LAW

In rural India, women's political role in the context of gendered institutions is a contentious topic with the 1992 reservation law. Some feminist scholars and organisations laud this parity policy as a powerful tool to overcome cultural obstacles to the empowerment of women (Jain, 1996, Ray, 1999) while many more debate over the effectiveness and consequences of imposing women in local governments in the context of patriarchal norms and gendered institutions (Deininger, et al., 2011). Indeed, local organisations function in ways specific to their social norms and informal pressures and expectations can affect women, including in new political role (Cleaver, 2000; Gibson, 2012).

It is difficult for female leaders to disregard the informal norm systems constituting the backbone of their community's social and economic function. To quote Smith (2003) again,

> 'rural India formal legal rights founded in legislative enactments of state and federal Parliaments relating to land, labour and women's rights in particular, are ignored and tend to be unenforceable where they vary from local custom and social rules' (ibid: 45).

Engrained gendered institutions permeate the political world and affect the public behaviour of female leaders, their political parties, and the overall collective action (Agarwal, 1997a; Gibson, 2012). Women (and men) are *expected* to act according to societal and cultural stereotypes because such norms are internalized and accepted as somehow right (Rojahn et al., 1997; Mitchell, 1999 in Smith, 2003). Women in PRIs are not exempt from social norms of conduct and often mould their public behaviour to fit gendered rules and expectations accepted in their community.

Jayal (2006), with her comprehensive review of existing surveys on female leaders in PRIs, provides insightful information on gendered institutions shaping political performance. Women's political behaviour varies across India and across socio-economic background. For instance, she reports significant variations in reported attendance of female PRI members to meetings. In Uttar Pradesh she finds that almost 60 per cent of women did not invest any time in

PRI duties while less than 30 per cent devoted more than three hours weekly to perform political tasks, a result of the difficulties in attending meetings due to domestic or livelihood obligations. In other surveys, such as in Tamil Nadu and the Garhwal region, women regularly attended meetings and did so unaccompanied by any male escort. This latter observation is rather unique, as multiple studies have instead highlighted the great dependence of female leaders on their male relatives. As Jayal (2006) explains,

> 'There is a plethora of evidence of tokenism, and of surrogate or proxy representation by husbands and other male relatives who not only canvass for their women, but also have their own names printed on the banners in the campaign. Husbands of women pradhans are referred to all too frequently as the pradhan, as they assume the authority of the pradhan and discharge the functions of the office.' (ibid.: 24)

While many consider female office-holding as a meaningful outcome in its own right (Gibson, 2012), the reservation system is often criticised for tokenism and surrogate representation, a consequence of women abiding to gendered institutions. Women participating in PRI meetings are described as '*biwi-beti*': token female members or subservient women manipulated by male relatives (Rajaraman and Gupta, 2008; Kishwar, 2010). The *biwi-beti* image of female local politicians is further exacerbated by regular displays of modesty and submission. While some women, such as in Tamil Nadu and Karnataka, actively participated in meetings and offered suggestions to the discussion, other women, such as in Orissa, were more hesitant to publicly express themselves (Jayal, 2006). Many women practice the *purdah*, the custom of covering the face with a veil in public space. For women, the experience of appearing and speaking in a public space is felt particularly differently based on their caste and tribe background. There are numerous reported cases of women of lower castes being publicly humiliated, discriminated against, and denied power. During PRI meetings, women of lower castes will also end up sitting lower than upper caste women. For instance, as Jayal (2006) illustrates, in Haryana, a scheduled caste *pradhan* was found sitting on the floor while other members of the PRI, of higher caste, were sitting at a higher level. Discrimination, whilst often worse for lower caste female members, is a reality for all women. Male members often attempt to dominate, suggestions and remarks by women are ignored, and male officials often adopt negative attitude towards them.

Female leaders are also undermined by the misuse of non-confidence motions by their vice-chairman. Additionally, there are cases of violence, sometimes sexual, or intimidation and coercion against female leaders; these latter examples of political and social intimidation are often worse for female members of scheduled castes or tribes (ibid.). Further, women are often less educated than their male counterparts which results in a certain cynicism about PRIs for bringing to power unqualified *pradhans*, resulting in flawed policies (Bryld, 2001; Deininger, et al., 2011).

Overall, there is ample evidence that the performance and political behaviour of female PRI members are marked by codes of conduct determined by their traditional role and function in their community. However, as I will now review, there is evidence that women can turn gendered institutions to their advantage, and it is worth considering if adhering to these norms could in fact be the most effective political strategy for female leaders.

4. GENDERED INSTITUTIONS AS POLITICAL TOOL

Gendered institutions can be oppressive for women, but they can also form the basis for political performance. Women are not as helpless as sometimes portrayed (Rosaldo, 1974). Numerous scholars have discussed how women are strategic and rational social beings whose acceptance of gender norms is not without political and/or social benefits (Agarwal, 1992-1997b; Kandiyoti, 1988; Kantor, 2003; Rao, 2012; Smith, 2003). In particular, women who perform politically can benefit from acting according to gender norm expectations to gain moral capital, a resource to achieve political support, as well as to secure the patriarchal bargain within their household and social networks.

4.1. Moral capital

In order to understand the complexities faced by female leaders exerting power, it is useful to examine the wider literature on politics and feminism, and more specifically to revisit notions of

power within a political institution. Influencing an institution's decision-making is directly linked to one's ability to exert power over others in a given socio-cultural and political context (Fiedler, 2005). French and Raven's (1959) pioneering work on the dynamics of social power, describes how power can be exerted in different forms. His 'five bases of power', are: coercive (ability to punish), reward (ability to provide incentive), expert (the power of having knowledge), legitimate (the innate power given by social context) and referent power (the power from being liked and respected).[15] Studies have found that, in mixed groups, men resist women's power because, culturally, they have more legitimate power than women (Carli, 2001). Competent and assertive women are not necessarily influential because they lack culturally defined authority (O'Barr, 1975; Carli, 1999).

One way for women to offset their lack of legitimate power is through gaining respect and authority by developing an image of virtue. Women indeed tend to be 'better liked' than men, they are seen as altruists who care for others, and consequently exert influence through social relations, or referent power (O'Barr, 1875; Carli, 1999). This strategy of acting according to social norms of morality refers to what Kane (2001) labels 'moral capital'. He defines it as the ability to establish a high moral reputation through which prestige, respect, trust, and authority are earned. Moral capital enables one to achieve his or her political goals by increasing referent power. In other words, moral capital is a resource to gain political power (Adams, 2011).

For women, abiding by gender institutions can be an important source of influence in given gendered contexts (Tichenor, 2005). As Eagly, et al. (1995) comment, social pressure and internalisation of cultural expectations act as powerful motivation to obey gender-roles. Displaying proper 'female-behaviour' and consciously following cultural rules of interaction might help women establish themselves as social and political actors for change (Collier, 1974). By complying with traditional societal values, women gain respect not only from men, but also

[15] It should be noted that some scholars count six determinants of power, with *knowledge* being the sixth. Many theories on power have been developed from French and Raven's concept of determinants of power although sometimes under different terminologies. For example, as Straus and Yodanis (1995) noted, economic reward has now been widely referred to as 'resource' while the 'culturally scripted legitimacy' of power is simply referred to as 'culture' or 'cultural context'.

from other women. They uphold the norms and culture that form the structural backbone of every society, by which they gain moral capital and substantiate their actions as leader.

In a patriarchal society, women might act according to norms of 'female submission' to gain moral capital and subsequent influence.[16] In their study of female national political figures in South Asia, Derichs, et al. (2006) state that moral capital is 'one of the core assets of women on their way to power' (ibid: 245). Female politicians choose to 'frame themselves in traditional gender roles through symbolic and rhetorical expressions' to achieve respect and authority (ibid: 268). They embrace gender expectations by not challenging the 'patriarchal, traditional status quo of the country's prevailing gender ideology and its role prescription' (ibid: 268). They 'adopt behavioural patterns consonant with society's expectation of how they should behave' (Chapman, 1975: 646).

Abiding to notions of femininity is key to gaining moral capital. The idea of femininity is deeply engrained in gendered institution, and therefore in the socio-cultural and economic background of communities. According to social gender role theories, people engage in activities consistent with their culturally defined gender roles (Eagly, et al., 1995). Deferring to these gendered allocations of labour can be a way for female leaders to act according to moral values of feminine behaviour embedded in gendered institutions. To remain influential, female leaders must also maintain a positive identity, determined by the social, cultural and political context of 'femininity' (Rojahn, et al., 1997). Acting 'feminine', by definition, inevitably requires women to avoid being perceived as 'masculine'. Women who embrace masculine leadership behaviours to gain more power usually end up violating conventions for appropriate feminine conduct and losing referent influence, reducing their overall leadership effectiveness (Eagly, et al., 1995). An interesting example reported by Agarwal (1997a) illustrates how social sanction and disapproval can arise when women deviate from socially acceptable feminine

[16] While some might refer to it as a bargaining strategy, I will stick to the term of 'moral capital' in order to create a clear distinction between women's strategy to earn power as a public figure, and their strategy to secure fall-back within their household and communities, which I shall expand on in the following section.

behaviour. She reports, from her own readings (Ram 1989 and Roy and Dewan 1988, in Agarwal 1997a), of how South Indian female fish traders, who adopt loud haggling and aggressive marketing, often end up being verbally or physically abused by their own community. Their behaviour is often deemed too 'masculine' – sometimes even sexually provocative – to be socially acceptable for their community, or their own daughters. Finally, in India, 'femininity' is mostly associated with being a wife. Traditional Hindu laws, deeply embedded in Indian culture, focus on women *in relation to men* (Wadley, 1977). In the ancient Laws of Manu, Nature, symbolised as a female, appears to be controlled by Culture, symbolised as masculine, leading to the implicit understanding that males control females (ibid.). These cultural and religious images have directly impacted modern norms of behaviour. Ideologies are essential in defining the role of women in relation to male relatives, which then influence the creation of societal rules and codes of conduct (Dube, 1997). Thus, events and behavioural patterns affecting the private domain of relationships directly influence relationships in the public domain (O'Barr, 1975). Inherited relational norms for married couples influence the way women behave with men at the public level of local governance. A respectful woman is, above all, a respectful wife.

Overall, women in politics benefit from respected gendered institutions.. Women gain moral capital by adhering to engrained notions of femininity, such as respecting socially built ideas of labour division; acting, speaking or dressing traditionally and moderately; or by maintaining their housewife image.

4.2. Bargaining with patriarchy: securing reciprocity networks

Women can also use gendered institutions to their advantage to secure their socio-economic position in their community and household. Here, it is key to understand that because gendered institutions define women's role in their community, in terms of acceptable behaviour, visibility, mobility, engagement, etc., they also determine women's reliance on their community and relatives. In patriarchal gendered institutions, brought about by the economic and

institutional environment (such as land entitlements, access to common resources, wage differences, labour division, patriarchal norms of social behaviour, network with natal kin, etc…), women's social bonds are critical to their own economic and social subsistence within the community (Kandiyoti 1988; Rao, 2012). Through often-informal networks, women can secure economic support (such as jobs, sharing labour, borrowing small amounts of food, financial help), social support (arranging marriages, help during illness), and political support (Agarwal, 1997a). Women depend on these informal sources of support networks to a great extent, and must remain well integrated within their community (through labour sharing, marriage alliances, social interactions, etc.) to ensure social and economic stability (ibid.). Cooperation and integration happens by following the established communal rules, such as respecting gendered institutions, and avoiding informal sanction (Smith 2003).

Political women have a clear incentive to compromise in particular with regard to their domestic role. In India for instance, men are important economic and social actors for their wives. Women are often dependent on men to mediate social interactions and avoid exclusion or sanction (Agarwal, 1997a; Kabeer, 1999, 2000, in Kantor, 2003). Traditionally, Indian women are described by their relationship to male relatives (wife, daughter, sister, etc.) and men can be key to their social recognition. Economically, women must often rely on their husbands to sustain the household, and even in cases where women support themselves, they might still rely on their sons when they can no longer work (Agarwal, 1997a). Within the household, men and women co-exist around this pact of reciprocity – or patriarchal bargain – where women defer to male authority and patriarchal norms in return for social and economic gains (Kandiyoti, 1988).

In cases where the patriarchal bargain risk overturning, such as when women engage in activities outside of their traditional domain, women might purposely acknowledge male authority as a strategy to re-gain respectability and restore the patriarchal bargain to further support their own interest (Rosaldo, 1974). In his work on gendered perception of agricultural labour, Rao (2012) describes how women often downplay their role as labourer to portray it as domestic labour, as an extension of household responsibilities in order to preserve social

boundaries. By the sort, social norms of seclusion and confinement to the household are not seen as being disrupted and cooperative and reciprocal transactions are maintained. Similarly, Rocca et al. (2009) found that women who engaged in self-help group were disrupting the established patriarchal bargain and many felt victim of domestic violence as a consequence. To protect themselves against violence, many women chose to conform to domestic and social expectation within their households to reaffirm their husband in his head of household role.

In short, gendered institutions create the framework defining the patriarchal bargain, but they also provide women with effective tools to counterbalance any gender norm breaching action and restore the reciprocal transaction system to their advantage.

5. PLAYING BY GENDERED INSTITUTIONS: ILLUSTRATION

In this section, I provide empirical evidence to illustrate how, in PRIs, female leaders can play by gendered institutions as a political strategy to secure both moral capital and patriarchal bargain. Political performance is here examined in terms of female leaders' gendered preferences in labour policies and 'feminine' behaviour. The topic is explored by empirically examining three questions: 1) Do female leaders abide by notions of labour division engrained in their socio-economic environment? 2) Do female leaders embrace notions of moral feminine values over time? And 3) Do women embrace notions of 'the good wife' over time.

To answer the first question, gendered preferences in labour policies are assessed within the contemporary context of MGNREGA.[17] The large-scale implementation of the scheme and the

[17] The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA), created in 2005, aims to transform the labour surplus in rural areas into labour assets to strengthen villages' economies. MGNREGA works as a decentralised system where PRIs act as decision-makers for development strategies (Khanna, 2010). Twice a year, villagers gather during *Gram Sabhas* (public forum) and, based on the propositions/demands made by villagers, the PRI produces an annual work list. This list, once checked and accepted by the Block Development Office, allows each PRI to receive the necessary funds for their chosen project. MGNREGA enables local governing systems to autonomously decide on public goods provision in their villages and gives them financial control over projects. The scheme's major goal is to promote sustainable livelihood in rural India by allowing villagers to invest labour in the creation of specific durable assets (all clearly defined in the scheme policy as possible MGNREGA work), boosting their agriculture-based economy. More importantly, priority is given to the development of productive

strictly defined range of allowed policy actions provide a unique framework to compare women's gender preferences across India. In line with the previously reviewed literature on gendered institutions engrained in socio-economic practices, particularly agricultural background (Bardhan, 1974; Dyson and Moore, 1983; Holvoet, 2005; Miller, 1981; Moore, 1973), the gendered preference of female PRI members is assessed against their role in the community, defined by agricultural practices.

To answer questions 2 and 3, 'feminine' behaviour is assessed in terms of reported attitude with regard to male relatives and expressed moral values. It is assumed that leadership develops through experience, and that, over time, women embrace the most effective strategies to exert influence on others (Hughes, 1993; Mumford, et al., 2000). As such, the topic is explored by examining the political performance of female leaders with varying years of experience, as experienced members may behave differently from new ones if they deem such behaviour benefits them.

The questions are examined using the data consisting of 67 female PRI members across India. The empirical analysis is also supplemented with qualitative data on PRIs in Himachal Pradesh.

5.1. Research methodology and limitations

5.1.1 Quantitative data

On April 25th and 26th of 2011, the Institute of Social Sciences in Delhi organised the annual 'Women's Political Empowerment Day Celebration' conference, providing a rare opportunity to gain perspectives on female leadership strategies in India. Over 500 female PRI members, from all across India, and therefore varying socio-economic backgrounds, attended the conference. For the occasion, a short one-page questionnaire was prepared, translated in Hindi, and given to

resources – such as improving soil moisture and water availability through rainwater harvesting and afforestation projects (MGNREGA website; Khanna, 2010; Kumar, et al., 2010). Similar to the reservation law in PRIs, MGNREGA also enforces a quota of 33 per cent female workers. In 2011, the national record of MGNREGA reported that almost 49 per cent of the beneficiaries of the 100 days of paid work were women (MGNREGA website).

female PRI members during the first day of the conference. In total, sixty-seven voluntarily completed questionnaires were returned to the research team by the end of the day.

The survey consisted of multiple-choice questions grouped into three sections. The first section focused on women's behaviour within the PRI with regard to their male relatives. Women were asked to specify how long they had been PRI members, and how much involvement their male relatives have in their PRI job in terms of how frequently they accompany them to meetings, and how regularly they discuss *panchayat* matters with them. Women were also asked to assess the significance ('significant', 'quite significant' or 'not significant') of various motivational aspects which influenced their decision to contest PRI elections. The second section examined their geographical background and agriculture practices. Women were asked to specify their region of origin as well as the type of irrigation practiced in their *panchayats* (water from rivers and streams diverted into canals, spate irrigation, pumped groundwater, rainfed, etc). The final section addressed the topic of MGNREGA. Women were asked about their opinion on allocating MGNREGA work according to gender. Women in favour of gendered labour allocation had to assess a job's degree of masculinity by assigning it to women, men, or both genders.

Despite the simplicity and relative success of the survey, it presents many limitations, which factored in the decision to use the data for illustrative purposes mainly. First of all, the survey was self-reported. This in itself present significant methodological flaws as 1) the results are subject to recall and social desirability biases; 2) authenticity cannot be ensured as women were sitting in close groups (mostly from the same region) and might have discussed/influenced responses; 3) although it was made clear that the questionnaire was to be completed by women only, the small number of husbands who had accompanied their wives, may have influenced their responses; and finally and possibly most importantly, 4) the sample is a representation of literate Hindi-speaking women only as many women were illiterate and/or did not speak Hindi (mainly women from the Southern regions of India). Secondly, the data presents no anthropological follow-up to further understand some of the responses, and while this would

have been impossible for all respondents (due to large geographical disparity), a follow-up study of some women (based on a stratified random sampling) would have been valuable. Time and financial limitations did not permit for an additional study.

Table 1. Geographical, experience, and irrigation characteristics of female leaders (N=67)

Geographical origin	
Northern India	42%
Indo-Gangetic plains	15%
Thar desert	15%
Central Highland & Deccan plateau	12%
East & West Coast plains	3%
Missing	*13%*
Experience	
Mean [SD] (months)	26 [43]
Newly-elected (<1year}	43%
Experienced ([1; 5] years)	40%
Re-elected (>5 years)	13%
Missing	*6%*
Irrigation	
Fetching	34%
Canal	16%
Rainfed	27%
Missing	*7%*

Due to the above limitations, the data was analysed using a simple statistical description. The characteristics of the respondents are presented in Table 1. For the analysis, women were grouped based on their experience and on their agricultural practices. It should be noted that some women did not complete the questionnaire entirely, but since many questions were treated independently from others, it was deemed acceptable to keep all questionnaires. As such, for each question the sample size varies according to the number of responses.

5.1.1.1. Experience

PRI members are elected for five years. In the sample, women's experience as PRI member varied from four months to more than sixteen years. The total number of women re-elected (more than five years of experience) represented less than 14 per cent of the total sample, indicating that most of the respondents were first-time PRI members. In order to assess the level

of experience of the latter group, a time threshold of one year was used. Indeed, since there should be at least two *Gram Sabhas* (public forum) per year, women with more than a year of experience had chaired at least two of those public hearings, likely increasing their experience on successful political behaviour. On the contrary, women with less than a year experience likely had little or no experience with public leadership. To simplify, the three groups were labelled 'newly elected' (women with less than a year experience; n=29), 'experienced' (women with one to five years experience; n=26), and 're-elected' (women with more than five year experience; n=9).

5.1.1.2. Agricultural background

Although the survey provided information about the origin of the women, in terms of broadly defined geographic areas, it did not provide further information regarding the socio-economic environments of their communities. Based on existing literature highlighting links between agriculture practices and social norms, in particular gender norms (Bardhan, 1974; Dyson and Moore, 1983; Holvoet, 2005; Miller, 1981; Moore, 1973), female leaders were divided into groups based on their role in providing water for agriculture. All irrigation types requiring the active labour of women to fetch water (from rivers, wells, or ponds) were grouped under 'fetching'. In cases where women's labour was not required, as panchayats relied on water being directly transported into the fields (canals and drainage lines diverting water from rivers or reservoirs, spate irrigation) women were grouped into 'canal'. All women reported that some part of their panchayats were rainfed, while some claimed to rely *only* on rain for their crops. The latter category, 'rainfed only' denotes panchayats where no irrigation system is used *at all*. Some women reported having all types of irrigation in their panchayat. Given that the importance of each was not weighted, this category was not examined.[18]

[18] Some farmers have mainly irrigation canals but might occasionally choose to supplement any water shortage by having women fetch water from rivers or other canals; similarly, some panchayats might rely mainly on women fetching water with the exception of few fields feeding from neighbouring canal systems.

5.1.2. Additional qualitative data: Himachal Pradesh

In addition to the empirical data used to illustrate the discussion, I also use qualitative data from another study carried in rural parts of Palampur in Himachal Pradesh. During four months fieldwork (between November 2010 and May 2011), female PRI members in six distinct panchayats (four under reservation) were interviewed. Focus groups were organised with female members and annual *Gram Sabhas* were attended in both reserved and unreserved PRIs. Some observation and anecdotes are used in this paper.

5.2. Results and discussion

5.2.1. Respecting gendered division of labour

I begin by examining whether female leader respect social boundaries of feminine knowledge and concern by abiding to notions of labour division engrained in agricultural practices. To my knowledge, no study has yet explored the causality factor (if any) between the agrarian environments, with engrained gendered labour division, and the political choices of female leaders in PRIs[19]. However, in another study (Girard, 2013), I discuss how women female leaders in PRIs abide to gendered norms of labour division by choosing to exert influence solely in domains congruent to their gender, in which they have socially engrained legitimacy. The data collected during the echoes theses findings. In Table 2, we find that a significantly greater number of women living in panchayats with a built irrigation system chose to allocate MGNREGA labour according to gender (36.36 per cent as opposed to only 8.70 per cent for fetching women). While the type of irrigation system was not controlled in this study (whether it was a large irrigation scheme or a small, farmer-managed canal system), canal irrigation systems typically carry certain notions of labour division, as discussed earlier. In Northern India for instance, the management and maintenance of irrigation canals is traditionally a masculine domain, while women focus exclusively on drainage lines in their own fields (Baker, 2005).

[19] Studies have analyzed the 'degree of empowerment' of women, or the cultural gendered practices, according to their region or agrarian practices, as discussed earlier.

Given that MGNREGA jobs specifically target irrigation system (amongst other jobs) and that more women from canal irrigated areas supported the idea that MGNREGA jobs should be assigned to workers based on their gender, these results imply that female leaders might choose to respect culturally defined notions of gendered labour.

Table 2. Women's opinion on gendering MGNREGA based on their role in irrigation and perceived masculinity of MGNREGA jobs.

Opinion on gendered labour division for MGNREGA	**Rainfed**	**Fetching**	**Canal**
Women in favour of gendering MGNREGA labour	27.78%	8.70%	36.36%
Degree of Masculinity of MGNREGA jobs* *(based on total number of women in favour of gendering MGNREGA, N=17)*			
Working on road construction	-0.12 [0.6]		
Cleaning, desilting, and clearing of detritus and bushes the irrigation system	0.29 [0.67]		
Digging new irrigation canals	0.12 [0.78]		
Constructing bunds and drainage systems against floods	-0.12 [0.6]		
Planting trees for moisture conservation and against erosion	0.47 [0.51]		

** The means and standard deviations were calculated weighing the answers 'masculine labour', 'male and female labour', and 'feminine labour' as 1, 0, and -1 respectively. Hence, a negative value denotes a stronger association with feminine labour while a positive value indicates a stronger association with masculine labour.*

This idea is further supported by the allocation of certain MGNREGA jobs to specific genders, also presented in Table 2. Results show that women in favour of gendering MGNREGA labour (just over 25 per cent of the total sample) estimated that maintaining irrigation canals and digging new ones were jobs ought to be performed by men (with a positive masculinity degree of 0.29 and 0.12 respectively), reflecting the idea that women might not wish to interfere in what is traditionally managed by men.

By obeying to gender roles inherent to their agrarian cultures, women might not only gain moral capital, but also choose to respect the boundaries of 'knowledge' defined by gendered stereotypes. They assign to men what is traditionally masculine and to women what is traditionally feminine, enhancing their influence by adhering to their culturally ascribed domain of expertise. As Carli (2001) highlights, women prefer to exert influence on traditionally

feminine domains because they are perceived as having legitimacy and expertise in this area. Imposing their own views and influencing other male leaders regarding traditionally feminine domains of knowledge is an easier task for women than exerting influence on culturally masculine domains of expertise (Eagly, et al., 1995). It follows that, by dividing work between men and women based on culturally inherited labour practices, female leaders might enhance their power within the PRI committee by respecting domains of knowledge and legitimacy (Girard, forthcoming). This suggests that women might play the gender card not only in their political behaviour but also in their views on rural development (ibid.).

5.2.2. Acting 'feminine'

For female PRI members, exerting power can also be seen as a masculine trait, which could lead to social sanction and tarnish their political power. Rather than pursuing a loud, confrontational approach, women can achieve the position of respected moral figure in the community by maintaining an air of quiet modesty. In Himachal Pradesh, many female PRI members chose to behave modestly during the public meetings and cover their faces. Respecting notions of femininity can also influence how female leaders choose to portray themselves in the public arena in terms of moral inspirations, or motivation to engage in the PRIs. For instance, in the sacred traditions of India, the domestic role of women is to be a 'bestower': they are expected to be altruistic and community-oriented individuals (Wadley, 1977). Their private role as the family custodian often transfers to their political role, and female leaders are expected to possess similar moral values, displaying 'motherly care' at the public level (Basu, 2003; Jayal, 2008; Alley, 2011). An anthropological study conducted by Alley (2011) stresses that women report engaging in PRIs for altruistic reasons, presenting their political role as an extension of their household role. Our findings, presented in Table 3, also echo Alley's study, as women of all levels of experience declared that their principal motivation for becoming a PRI member was the desire to bring change to their community (with motivational significance means of 0.89, 0.73, and 0.72 for newly-elected, experienced, and re-elected women, respectively). Given that

women can increase their referent power by relying more on interpersonal warmth, care and benevolence (Carli, 1999), abiding to expectations of moral reputation can in fact work in women's interests. Female PRI members might therefore emphasise their altruistic values to enhance their moral capital. Cleaver (1999) also highlighted that personal psychological motivations, and the need for recognition and respect, are often key aspects, independent of other material benefits. This psychology elevates women to 'high moral ground', allowing them to exert more power (Thomson 2002).

Table 3. Significance of socio-economic factors as determinants of women's engagement in PRIs, with respect to experience.

Motivational factors *How significant are the following statements (1=significant; 0= not significant)*.* *'I decided to become PRI member…'*	**Newly-elected**	**Experienced**	**Re-elected**
'Because I wanted to bring change to the community'	0.86 [0.30]	0.73 [0.36] $^{+}$	0.72 [0.28]
'Because I wanted to have more power in the community'	0.33 [0.46]	0.39 [0.42]	0.50 [0.38]
'Because I wanted to have authority over other PRI members'	0.19 [0.37]	0.50 [0.46] $^{+}$	0.56 [0.42]
'For the personal prestige'	0.22 [0.42]	0.46 [0.48] $^{+}$	0.44 [0.49]
'Because of the financial benefits I could get'	0.0 [0.0.]	0.17 [0.38] $^{+}$	0.22 [0.47]
'Because I have some extra time'	0.07 [0.22]	0.12 [0.26]	0.39 [0.51] $^{++}$
'Because I was pressured by my family'	0.05 [0.21]	0.10 [0.29]	0.0 [0.0] $^{++}$

** The answer 'quite significant' was weighted with a value of 0.5*

$^{+}$ *Denotes 10% significance in the difference between newly-elected and experienced women*

$^{++}$ *Denotes 10% significance in the difference between experienced and re-elected women.*

Interestingly, in our data, when motivation is analysed with respect to experience in the PRI, there are some significant variations across the three groups. Looking first at re-elected women, it appears that they express greater autonomy in decision-making. Although the means remain low, the 'free-time' factor was significantly higher (0.39) and the 'family-pressure' factor significantly lower (0.0) for re-elected women than for experienced (0.12 and 0.10 respectively) or newly-elected ones (0.07 and 0.05, respectively). Unlike women elected for the first time, re-

elected ones appear more detached from duty: they ran for election a second time not because they were pressured to do so but because they had free time which they were willing to invest in PRI matters. In addition, re-elected women assigned significantly greater weight to ideas of increased power (0.50 for having power in the community and 0.56 for authority over other PRI members). Although the questionnaire's responses were not public, it is striking to see that female leaders might express a stereotypically 'masculine' trait that could negatively affect their moral reputation. At this point it is important to recognise that being elected a second time can shift the balance of the power determinants. Re-elected women have most likely been chosen as *pradhan* for a second time irrespective of imposed female quotas. They wield more legitimate power since their presence has not been imposed by regulation. Their previous experience sitting at the head of the PRI will also have dramatically increased their expert power in the eyes of the community. Re-elected women might thus find that they can play down the gender card, by admitting (although privately) that their motivations defy gender conventions and moral expectations, and still remain influential within their panchayats.

Re-elected women are not the only ones to express some zeal for power. Once again, the factors were low on the significance scale, but 'having authority over the PRI', 'increasing their personal prestige', and 'hoping for financial gains' were significantly more important for experienced women than for newly-elected ones (respectively, 0.50, 0.46, and 0.17 for experience women as opposed to 0.19, 0.22, and 0.0 for newly-elected ones). While this could counteract the argument of morality, two aspects need to be considered: 1) women were not publically asked about their motivation (it is very unlikely that any woman, given the existing scepticism regarding their leadership, would have publically acknowledged any financial motivation!), and 2) morality is also, and possibly mainly, judged from public behaviour, and in this matter, experienced women differ greatly from newly-elected ones.

5.2.3. Playing the good wife

This latter point brings out a final, and perhaps most important way in which female leaders abide to notions of femininity, that is, by 'playing the good wife'. Studies in India have already highlighted that women in PRIs often choose to work in close collaboration with male relatives (Chattopadhyay and Duflo, 2004a). Our data corroborate the important role of male relatives, specifically with experienced women. Table 4 shows how experienced women work far more closely with their male relatives – with an index for 'presence' and 'discussion' of 0.65 and 0.81 as opposed to 0.27 and 0.51 for inexperienced women. These results indicate that, as they gain experience – and, as noted earlier, as they potentially start desiring more power in the community and PRI –, female leaders choose to embrace culturally-defined feminine norms with regard to their relatives. By playing the card of the 'wife respecting the domination of her husband', women become a referent embodiment of their culture at the political level, gaining moral capital. Women not only increase referent power by respecting the expectations of gender-roles, they also gain more credibility. *Displaying* gender role acceptance during social interactions is an important tool for increasing social power (Tichenor, 2005). Indeed, as Rao (2012) illustrates with his account of a female PRI member, Priti, who attends official work with her husband, 'rather than denying his support, Priti builds on it to gradually expand her own influence in the public sphere' (ibid.: 1046). Men present at their wives' side not only confirm their role as 'good wives', but also their trustworthiness. Female leaders gain influence when others see that someone else endorses their authority (Carli, 2001). A woman backed by her husband during public events is more likely to get support and recognition from other males.

However, gaining moral capital by playing the good wife needs not be a permanent strategy for female leaders. In fact, results in Table 4 show a slight decline, although not significant, in the involvement of men in the political world of re-elected female leaders. Given that re-elected women hold a more influential position due to their perceived increased expertise, which adds to their legitimacy within the community. 'Playing the good wife' to increase moral capital and, thus power, might only be a temporary strategy to counterbalance an initial lack of legitimacy –

the latter often worsened by the fact that women are 'imposed' on the political arena as part of the reservation law.

Table 4. Evaluation of male relatives' engagement in PRIs with respect to experience.

Presence of male relatives in PRI meetings	Newly-elected	Experienced	Re-elected
(How often does your husband (or other male relative) accompany you to PRI meetings?)	0.28 [0.23]	0.65 [0.38] $^{+}$	0.53 [0.41]
Discussion with Male relative on PRI matters			
(How often do you discuss PRI matters with your husband (or male relative)?)	0.51 [0.36]	0.81 [0.28] $^{+}$	0.75 [0.35]

The means and standard deviation values were calculated by weighing the answers as follow: 'always'=1; 'often'=0.75; 'sometimes'=0.5; 'rarely'=0.25; 'never'=0

$^{+}$ *Denotes 10% significance in the difference between newly-elected and experienced women*

5.2.4. Maintaining the patriarchal bargain

Abiding to gendered institutions goes beyond the public role of women, it also relates to their position in their household and close-community. Female leaders, as well as being political figures, are simultaneously members of several social groups (due to their caste, religion, economic activity, etc.), forming their network of direct or indirect reciprocal transactions (Agarwal, 1997a; Seinen and Schram 2001 in Smith, 2003). Unlike participation processes in Western institutions, PRI members cannot hold discretion in their political function and are instead subject to social judgments which go beyond their public role (Gibson, 2012). While it might be in women's interest to display good moral values to get public approval, and political power, they also have to deal with their own social capital and ensure reciprocity is maintained within each social circle. Women depend on their social capital for material and social security and these can greatly shape their strategies and behaviour within the political world of PRIs. Women in PRIs, who remain silent, practice the *purdah*, or avoid engaging in masculine domains, not only improve their moral capital, but they also ensure that norms of behaviour practiced within the society are not breached, thereby preserving their own interests. By abiding

to gender norms, female leaders de facto bargain for social and economic stability within their own social circles of reciprocal transaction.

Securing social and economic transactions are all the more so important as, entering PRIs does not necessarily improve the bargaining power of women within the household. Indeed, their economic status does not improve, as working in PRIs remains an unpaid job. The lack of resources outside the household might therefore determine the extent to which women choose to compromise and abide to patriarchal institutions (Kantor, 2003).

Further, having women enter into the political life of PRI can disturb the patriarchal bargain: women step outside the house and adopt an unorthodox role. The disruption of the reciprocal pact can have negative repercussions for women. Social norms and expectations are often slow to change, and an increase in the autonomy of women, by taking on PRI jobs, might be considered a challenge to patriarchal expectations of propriety and modesty (Rocca, et al., 2009). Working outside the household can be seen as shameful and a sign of disregard for male authority (Rao, 2012). The engagement of women in so-called 'empowering' institutions can also lead to an increase in domestic conflict and violence (Rocca, et al., 2009). Such violence can be greater for women who adopt autonomous behaviour in communities where gender inequities are deeply entrenched (ibid.). Consequently, female PRI members might choose to enhance their subservience, in order to redress the balance of the patriarchal bargain, disturbed by their new autonomous role. Other strategies to improve the status of women in their political role can also help restore the patriarchal bargain. For instance, as I discussed earlier, women often choose to portray themselves as the care-taker in their role as political leaders. This is consistent with moral expectations, but also blurs the boundary between the political and domestic domain. By portraying their PRI responsibilities as an extension of their domestic duties, women undervalue their political role in order to uphold social norms and expectations, thereby reinforcing male responsibility and reciprocity.

For female PRI members, appearing in public meetings with a male relative can also secure fall-back in the patriarchal bargain. By being seen in relation to their male relative, women observe

their subordination and economic dependence on them. The story of Shilpa[20], a female *pradhan* elected on a reserved seat in rural Himachal Pradesh, illustrates the reinforcement of female domestic roles in response to new political responsibility outside the home. During our fieldwork, we visited Shilpa prior to one of the annual public forums, *Gram Sabhas*. We were invited into her house and greeted by her husband. A female family member served tea and biscuits. Only once all the traditional hosting duties were performed, did we realise that this woman was in fact the *pradhan*. By emphasising her and her husband's role within the household before her own role as local politician (the reason we had come to interview her), Shilpa reinforced her husband's position as head of the household and reiterated the patriarchal bargain. Shilpa chaired the *Gram Sabhas* with her husband by her side. She not only played the role of the good wife, thereby raising her own moral capital through public approval, but also secured her domestic position and her husband's economic and social reciprocity. Finally, assuming a political role also implies a certain notion of exposure. Traditional modesty markers, such as veiling then become a 'symbolic means at [women's] disposal to signify that they continue being worthy of protection' (Kandiyoti, 1988: 283).

All women, irrespective of their age or experience, seek to secure reciprocity within the social and domestic network, especially as they exercise more and more autonomy. Referring back to Table 4, the importance of the patriarchal bargain provides an indication as to why the male engagement indices for re-elected women, although smaller than for experienced PRI members, remain significantly higher than for inexperienced members (respectively 0.53 and 0.27 for men's presence, and 0.75 and 0.51 for discussion with men). The need for masculine economic and social security remains strong for all women, perhaps more so as they gain additional legitimacy and autonomy within the PRIs and further disturb the patriarchal bargain.

[20] Her real name has here been substituted.

6. CONCLUSION AND FUTURE PROSPECTS

It is important to realise that women adhering to what may be perceived by outsiders as 'oppressive' rules is not necessarily indicative of poor political performance. As Kandiyoti (1988) wrote more than two decades ago:

> 'the forms of consciousness and struggle that emerge in times of rapid social change require sympathetic and open-minded examination, rather than hasty categorization.' (ibid.: 284)

The reservation law has precipitated women into the world of formal politics while the patriarchal context has remained unchanged and social norms still assert that they have no real legitimate power. In this context, it is reasonable for some political women to choose to 'improve and secure their own lives, rather than changing meanings or relationships in long-lasting and transformative ways' (Rao, 2012: 1046). Female leaders, by accepting rather than challenging gender norms, secure their membership in their community and household while gaining recognition as political leaders. By maintaining the patriarchal status quo, they increase their moral capital and subsequent power while securing the patriarchal bargain in their household.

However, this needs not be a permanent strategy. The current model of feminine morality, which shapes the political behaviour of women, is susceptible to change (Cleaver, 2000, O'Barr, 1975). Gendered institutions are not stable, nor permanent, but flexible and context dependent, slowly altered by new policies, such as parity laws (Rojahn, et al., 1997). In many ways, because female leaders' complacent political strategy ensures their acceptance in PRIs and their community, it facilitates their lasting membership in formal politics, which can chip away at gender institutions over time. Indeed, as a greater number of female leaders express interest in contesting the elections again (Jayal, 2006), more women will return to PRIs with greater expert and legitimate power and hence greater freedom in their political behaviour. Additionally, over time, the network of women who once were PRI members will increase and

likely provide future female leaders with social support that may encourage a wider range of political action. Finally, in the future, as more generations grow up seeing gendered-balance PRIs in their community, women will enter formal politics with increasing legitimacy, and moral capital might not be a necessary strategy to secure power anymore. In short, by abiding by current gendered norms, female leaders indirectly facilitate the creation of more gendered-equitable dynamics in future gendered institutions.

Ultimately, feminists concerned with the present status of women in India should trust in both the changing characteristics of gendered institutions, slowly altered by promising and long-sighted laws on parity, and women's adaptability. For now, and until gendered institutions changes, women who accept their traditional role might have chosen the best strategy to ensure political power and socio-economic security in the constraints of patriarchy.

REFERENCES

Acker, J. (1992). From Sex Roles to Gendered Institutions. *Contemporary Sociology*, 21(5), 565-569.

Adams, M. (2011). Is family a moral capital resource for female politicians? The case of ABC's Commander in Chief. *Media Culture Society*, 33(2), 223- 241.

Agarwal, B. (1992). The Gender and Environment Debate: Lessons from India. *Feminist Studies*, 18(1), 119-158.

Agarwal, B. (1997a). Gender, Environment, and Poverty Interlinks: Regional Variation and Temporal Shifts in Rural India, 1971-91. *World development*, 25(1), 23-52.

Agarwal, B. (1997b). 'Bargaining' and Gender relations: within and beyond the household. *Feminist Economics*, 3(1), 1-51

Alley, H. (2011). The Politics of Devotional Labor: Women in the Panchayat Raj. BA dissertation, Wesleyan University, Middletown.

Baker, J.M. (2005). *The Kuhls of Kangra: Community-Managed Irrigation in the Western Himalaya*. Seattle: University of Washington Press.

Bardhan, P.K. (1974). On life and death questions. *Economic and Political Weekly*, 9(32-34), 1239-1304.

Basu, A. (2003). Gender and Governance: Concepts and Contexts. In: UNDP (Ed). *Essays on Gender and Governance*.

Besley, T., Pande, R., Rahman, L. and Rao, V. (2004). The Politics of Public Good Provision: Evidence from Indian Local Governments. *Journal of the European Economic Association*, 2(2/3), 416-426.

Blair, H.W. (1985). Participation, Public Policy, Political Economy and Development in Rural Bangladesh, 1958-85. *World Development*, 13(12), 1231-1247.

Bryld, E. (2001). Increasing Participation in Democratic Institutions Through Decentralization: Empowering Women and Scheduled Castes and Tribes Through Panchayat Raj in Rural India. *Democratization*, 8(3), 149-172.

Campa, P., 2011. *Gender Quotas, Female Politicians and Public Expenditures: Quasi-Experimental Evidence*. Mimeo: Stockholm University.

Carli, L.L. (1999). Gender, Interpersonal Power, and Social Influence. *Journal of Social Issues*, 55(1), 81-99.

Carli, L.L. (2001). Gender and Social Influence. *Journal of Social Issues*, 57(4), 725-741.

Chapman, J.B. (1975). Comparison of Male and Female Leadership Styles. *The Academy of Management Journal*, 18(3), 645-650.

Chattopadhyay, R. & Duflo, E. (2004). Women as Policy-makers: evidence from a randomized policy experiment in India. *Econometrica*, 72(5), 1409-1443.

Cleaver, F. (1999). Paradoxes of Participation: Questioning Participatory Approaches to Development. *Journal of International Development*, 11, 597-612.

Cleaver, F. (2000). Moral Ecological Rationality, Institutions and the Management of Common Property Resources. *Development and Change*, 31, 361-383.

Clots-Figueras, I., 2011. Women in politics. Evidence from the Indian States. *Journal of Public Economics*, 95, 664-90.

Collier, J. C. (1974). Women in Politics. In: M.Z. Rosaldo and Lamphere, L. (Eds.), *Woman, Culture and Society* (pp. 89-96). Stanford: Stanford University Press.

Deininger, K., Jin, S. & Nagarajan, H.K. (2011). Does Female Reservation Affect Long-Term Political Outcomes? Evidence from Rural India. World Bank Policy Research Working Paper Series 5708.

Derichs, C., Fleschenberg, A. & Hüstebeck, M. (2006). Gendering Moral Capital. Morality as a Political Asset and Strategy for Top Female Politicians in Asia. *Critical Asian Studies*, 38(3), 245-270.

Drèze, J. & Sen, A.K. (1995). *India: Economic development and social opportunity*. Delhi, New York: Oxford University Press.

Dube, L. (1997). *Women and Kinship. Comparative Perspectives on Gender in South and South-East Asia.* New York: United Nation University Press.

Duflo, E. (2005). Why Political Reservation? *Journal of the European Economic Association*, 3(2-3), 668-78.

Dyson, T. & Moore, M. (1983). On Kinship Structure, Female Autonomy, and Demographic Behavior in India. *Population and Development Review*, 9(1), 35-60.

Eagly, A. H., Steven, J.K. & Makhijani, M. (1995). Gender and the Effectiveness of Leaders: A Meta-Analysis. *Psychological Bulletin*, 117(1), 125-145.

Faguet, J-P (2004). Does Decentralization increase government responsiveness to local needs?: Evidence from Bolivia. *Journal of Public Economics*, 88(3-4), 867-893.

Ferreira, F., and Gyourko, J., 2011. Does gender matter for political leadership? The case of U.S. mayors. Working Paper no. 17671. Cambridge, MA: National Bureau of Economic Research.

Fiedler, F. (2005). Contingency Theory of Leadership. In: J.B. Miner (ed.), *Organizational behavior: Essential theories of motivation and leadership.* New York. London: M.E. Sharpe.

French, R. P., Jr. & Raven, B. (1959). The bases of social power. In D. Cartwright (ed.), *Studies in social power* (pp. 150-167). Ann Arbor: University of Michigan Press.

Gibson, C. (2012). Making Redistributive Direct Democracy matter: development and women's participation in the Gram Sabhas of Kerala, India. *American Sociological Review*, 77, 409-434.

Girard, A. (2013). Gender and Public Choice in rural India. Can female leaders really influence local governance? *Journal of Gender Studies*. Retrieved from http://dx.doi.org/10.1080/09589236.2013.856753 (Accessed 14th November 2013).

Guha, R. (2008). *India After Gandhi: The History of the World's largest Democracy*. London: Pan Macmillan.

Heller, P., Harilal, K.N. and Chaudhuri, S. (2007). Building Local Democracy: Evaluating the Impact of Decentralization in Kerala, India. *World Development*, 35(4), 626-648.

Holvoet, N. (2005). The impact of Microfinance on decision-making agency: Evidence from South India. *Development and Change*, 36(1), 75-102.

Hughes, R.L. (1993). *Leadership: Enhancing the Lessons of Experience*. Burridge: Richard D. Irwin.

Jackson, C. (1999). Social Exclusion and Gender: Does One Size Fit All? *The European Journal of Development Research*, 11, 125-146.

Jain, D. (1996). Gender in Development. UNDP Monograph Series No 5. New York.

Jayal, N. G. (2006). Engendering local democracy: the impact of quotas for women in India's *panchayats*. *Democratization*, 13(1), 15-35

Jayal, N. G. 2008. Engendering Panchayats. In: McSweeney, B. G. (Ed.). *Another side of India: Gender, Culture and Development* (pp. 2-7). UNESCO. Paris.

Johnson, C. (2001). Local Democracy, Democratic Decentralisation and Rural Development: Theories, Challenges and Options for Policy. *Development Policy Review*, 19(4), 521-532.

Kandiyoti, D. (1988). Bargaining with patriarchy. *Gender and Society*, 2(3), 274-290.

Kane, J. (2001). *The politics of moral capital*. Cambridge: Cambridge University Press.

Kantor, P. (2003). Women's Empowerment Through Home-based Work: Evidence from India. *Development and Change*, 34(3), 425-445.

Khanna, P. (2010). How secure is National Rural Employment Guarantee as a Safety Net. *Global Labour University.* Retrieved from http://www.global-labour-university.org/fileadmin/GLU_conference_2010/papers/52._How_Secure_is_National_Rural_Employement_Guarantee_as_a_Safety_Net.pdf (Accessed 5th July 2011).

Kishwar, M (1985). Ghandi on Women. *Economic and Political Weekly*, 20 (40), 1691-1702.

Kishwar, M.P. (2010). Demeaning Women's Empowerment. *Outlook India*. Retrieved from http://www.outlookindia.com/article.aspx?264628 (Accessed 23th August 2011).

Kumar, A., Suna, B. & Pratap, S. (2010). Responding to People's Protests about Poverty: Making and Implementation of the National Rural Employment Guarantee Act (NREGA) in India. *Chronic Poverty.* Retrieved from http://www.chronicpoverty.org/uploads/publication_files/kumar_suna_pratap_nrega.pdf (Accessed 5th July 2011).

Menon-Sen, K. & Kumar, A.S. (2001). *Women in India: how free? how equal?* Delhi: United Nations.

MGNREGA website. Retrieved from http://nrega.nic.in/netnrega/home.aspx (Accessed 10th August 2011).

Miller, B. (1981). *The endangered sex: neglect of female children in rural India.* Ithaca: Cornell University Press.

Moore, M. (1973). Cross-Cultural Surveys of Peasant Family Structures: Some Comments. *American Anthropologist,* 75(3), 911-915.

Mumford, M. D., Marks, M.A., Connelly, M.S., Zaccaro, S.J. & Reiter-Palmon, R. (2000). Development of leadership skills: Experience and timing. *The Leadership Quaterly*, 11(1), 87-114.

O'Barr, J.F. (1975). Making the Invisible Visible: African Women in Politics and Policy. *African Studies Review*, 18(3), 19-27.

Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. New York: Cambridge University Press.

Pai, S. (1987). Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India. *Social Scientist*, 15(6), 16-32.

Pande, R. (2003). Can Mandated Political Representation Increase policy Influence for Disadvantaged Minorities? Theory and Evidence from India. *The American Economic Review*, 93(4), 1132-1151.

Patel, S. (2008). She's in Charge Now: An Examination of Women's Leadership in the Panchayati Raj Institutions in Karnataka, India. In: McSweeney, B. G. (Ed.). *Another side of India: Gender, Culture and Development* (pp. 8-29). UNESCO. Paris.

Raabe, K., Sekher, M. and Birner, R. (2009). The Effects of Political Reservations for Women on Local Governance and Rural Service Provision. Survey Evidence from Karnataka. IFPRI Discussion Paper 00878. International Food Policy Research Institute. New Delhi.

Rahman, L. and Rao, V. (2004). The Determinants of Gender Equity in India: Examining Dyson and Moore's Thesis with New Data. *Population and Development Review*, 30(2), 239-268.

Rajaraman, I. and Gupta, M. 2008. *Further Evidence on the policy impact of randomised political reservation*. New Delhi: National Institute of Public Finance and Policy.

Rao, N. 2012. Male 'Providers' and Female 'Housewives': a Gendered Co-Performance in Rural North India. *Change and Development*, 43(5), 1025-1048.

Ray, S. (1999). The Women's Reservation Bill of India: a political Movement towards Equality for Women. *Temple International and Comparative Law Journal*, 13, 53-72.

Rocca, C.H., Rathod, S., Falle, T., Pande, R.P., and Krishnan, S. (2009). Challenging assumptions about women's empowerment: social and economic resources and domestic violence among young married women in urban South india. *International Journal of Epidemiology*, 38, 577-585.

Rojahn, K., Fischer, A. & Willemsen, T.M. (1997). The Social Identities of Female Leaders in Different Cultural Contexts. *Feminism and Psychology*, 7(2), 183-207.

Rosaldo, M. Z. (1974). Woman, culture, and Society: A Theoretical Overview. In: M.Z. Rosaldo and Lamphere, L. (Eds), *Woman, Culture and Society* (pp. 17-42). Stanford: Stanford University Press.

Smith, L. (2003). Gender, Norms and Bargaining in Rural India. In: Gosh, R.N., Siddique, M.A.B. and Gabbay, R. *Essays on Development Issues. India and the Indian Ocean region* (pp. 35-68). Delhi: Atlantic Publishers & Dist.

Straus, M.A. & Yodanis, C.L. (1995). Marital Power. In D. Levinson (ed.), *Encyclopaedia of Marriage and the Family* (pp. 437-442). New York. London: Macmillan Library Reference.

Thompson, M.R. (2002). Female Leadership of Democratic Transitions in Asia. *Pacific Affairs*, 75(4), 535-555.

Tichenor, V. (2005). Maintaining Men's Dominance: Negotiating Identity and Power When She Earns More. *Sex Roles*, 53(3/4), 191- 205.

Van Dyke, V. (1966). The optimum scope of political science. In J.C. Charlesworth (Ed.). *A Design for Political Science: Scope, Objectives and Methods* (pp. 1-17). Philadelphia: American Academy of Political and Social Science.

Vissandjee, B., Apale, A., Wieringa, S., Abdool, S., & Dupéré, S. (2005). Empowerment Beyond Numbers: Substantiating Women's Political Participation. *Journal of International Women's Studies*, 7(2), 123-141.

Wadley, S.S. (1977). Women and the Hindu Tradition. *Signs*, 3(1), 113-125.

West, C. & Zimmerman, D.H. (1987). Doing Gender. *Gender and Society*, 1(2), 125-51.

PART III – PAPER II

GENDER AND PUBLIC CHOICE IN RURAL INDIA

Can female leaders really influence local governance?*

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ABSTRACT

With established quotas that formalise the presence of women in local governance in rural India, it remains unclear how women are shaping public decision-making in practice. This paper, based on a survey carried out in four female-led and two male-led local governance institutions in Himachal Pradesh, empirically analyses decision-making based on competing Public Choice models. Results indicate that Public Choice theories fail to accurately predict decision-making because they do not account for embedded norms of gendered labour division. Female leaders can be constrained in their policy-making by the gender-congruence of certain political tasks. This paper suggests that in the case of female-congruent political domains, such as health and education, a Citizen-Candidate model might best predict female-led decision-making processes while in the case of male-congruence, such as irrigation and land development, a Downsian model might prevail.

Keywords: women, public choice, rural development, irrigation, India.

1. INTRODUCTION

Nearly two decades have passed since the introduction of female quotas in Indian rural governance systems. Although Panchayati Raj Institutions (PRIs, village councils) existed before, and the attendance of female participants in communities' decision-making groups was not new either, women's roles as political figures in local governance was only institutionalised and lawfully enforced with the implementation of the 73rd Amendment Act (Buch 2000,Basu 2003). Under this law, 33 per cent of seats in the PRIs are to be reserved for women and, following a rotation system, every third PRI is to be headed by a female pradhan (chair). In 1992, subsequent to the enactment of the law, more than 700,000 women across the country came forward for the first time and officially took seat in the PRIs (Buch 2000). Since then, more than a million women in rural India have followed in their footsteps and, jointly with elected men, taken on the political responsibilities of allocating state-sponsored welfare program funds, rural development schemes, as well as arbitrating daily village social issues (Ban and Rao 2006).

The scale of the implementation of this act along with its relative novelty makes India an interesting case study for the examination of how gender impacts upon the drawing up of local policies in rural areas. In particular, the introduction in 2005 of the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) provides a relevant basis for the examination of policy outcomes between reserved and unreserved PRIs. This rural employment act, aimed at providing paid work while boosting the economic development in rural areas with the construction of productive assets, gives PRIs the critical role of deciding on the projects they wish to undertake in their jurisdiction (panchayat). The combination of the reservation law and MGNREGA means that since 2005 women and men are jointly in charge of making decisions regarding the realisation of durable assets in their panchayats (such as, road construction, renovation of water bodies, tree plantation, etc.).

The legal requirement to have women involved in decision-making processes in their panchayat has enticed the interest of many researchers (see for example Chattopadhyay and Duflo 2004, Ban and Rao 2006, Raabe *et al* 2006, Clots-Figueras 2011). Some studies have assessed the performance of female pradhans against male pradhans in their leadership roles (Mumtaz 2005, Jayal 2008) while others have focused on comprehending the effects of reservation on policies through the framework of Public Choice models (Campa 2011, Clots-Figueras 2011). Overall those studies have revealed conflicting results regarding whether female pradhans can be effective leaders and whether the presence of women in PRIs has any impact on rural policies.

This paper follows the path of previous research on the reservation law. It aspires to enrich the existing debate over the role, effectiveness and impact of female political leaders in rural India, with a specific focus on MGNREGA. However, contrary to prevailing literature, it does not intend to compare policies in reserved and unreserved PRIs, but rather to comprehend the processes of policy making *from within* PRIs and against the backdrop of gender norms. This paper integrates embedded gender roles – shaped by social interactions, culture, labour practices, and gender-based development policies – to a quantitative analysis of decision-making practises. It aims at questioning the applicability of existing 'non-gendered' models of Public Choice theories to local governance. Conflicting results on what Public Choice models best predict the policy-making processes in reserved PRIs possibly arise because negotiations in PRIs happen within a complex system of gender-based norms. I suggest that neither Downs' model of public choices (Downs 1957) nor the Citizen-candidate model (Osbornes and Slivinski 1996, Besley and Coate 1997) fully encompass the decision-making dynamics within the PRIs because they do not integrate these embedded aspects of social rules and culture. Within the public context of PRIs, candidates carry within themselves deeply entrenched gender-based expectations of performance and knowledge that shape their ability to exert influence in all domains.

This paper therefore hypothesises that Public Choice theories fail to predict the policy outcomes in PRIs because they do not encompass gender norms that restrict local leaders' domains of

influence to culturally inherited expertise expectations. While cultural norms of gender behaviour and labour division have been the main arguments behind the creation of the Indian reservation law in rural governance, ironically they might also form its limitation. Female pradhans might not be able to shape the decision-outcome in male-congruent domains, such as MGNREGA investments, which in turn might reduce their range of political action to female-congruent areas only.

This paper is organised in six main sections. Following the current introduction, existing literature will be discussed in order to establish the present research within its theoretical context. The next section sets the background of the study by presenting its setting and methodology; this leads the reader to the results and their discussion.

2. CONTEXT AND THEORY

2.1. Politic of presence: understanding gender quota policies

The opening of governing positions for women followed a new school of thought on decentralisation, where a shift from the 'politics of idea' to the 'politics of presence' was encouraged (Phillips 1994). Ensuring that the poorer and more marginalised members of communities were present at the table of governing institutions was seen as the most effective way of giving them an 'audible' voice and making sure their needs and concerns would be heard (Bardhan and Mookherjee 2000). In India, with the enforcement of such policies in PRIs, socially and economically disadvantaged groups such as women were viewed as being given the tools to successfully engage in the development plan of their own communities through elected female members (Besley *et al* 2004, Mumtaz 2005).

To give all PRI members the opportunity to weigh their opinions against each other, the reservation law directly addressed the 'critical mass' issue – a theory on the effect of gender ratio that arose from studies on mixed groups (Kanter 1977). According to small group theorists, small assemblies perform differently depending on their gender composition (Johnson

and Schulman 1989). In small units, women and men are more likely to strictly conform to the 'expectations' of their gender if they are in minority (*ibid.*). A member in minority – with regard to his or her ascribed gender or social category – is more likely to feel isolated and consequently act in ways that might portray him or her as being passive and inactive (Kanter 1977). But if the category is represented by a critical mass, categorised-members will have a greater influence on the decision-making during the negotiation system (Basu 2003).

In the Indian governance system, it was thus understood that if the number of women in the PRIs surpass this threshold, their demands and needs would more likely be met (Sharma 2004). The reservation law, by stating that at least 33 per cent of seats are to be occupied by women, has facilitated the creation of this 'critical mass', aimed at easing the successful engagement of PRI women in negotiations. Many states, such as Chattisgarh, Manipur, Uttarakhand, Bihar, Rajasthan, Madhya Pradesh and Himachal Pradesh, have further pushed the 'critical mass' concept by raising the quota to 50 per cent.

2.2 Gender and public choice models in PRIs

Engaging a critical mass of women in policy-making negotiations was understood to be essential because women were depicted as having different concerns and preferences to men. Women can be active political actors (Mosse 2001) and involving them in the PRIs subsequently meant that the policy outcomes would differ from that of previous women-less PRIs (Duflo 2005, Ban and Rao 2006). More importantly, because the fundamental power of decision is understood to ultimately lie in the hands of the chair, having women-led PRIs created the expectation that considerable policy changes would occur (Besley *et al* 2004, Chattopadhay and Duflo 2004). Policies in reserved and unreserved PRIs have subsequently been scrutinised using theoretical models of Public Choice to understand the underlying policy-making processes.

Gender-specific policies have often been highlighted as evidence of local governance systems complying with a Citizen-Candidate model (Osborne and Slivinsky 1996, Besley and Coate

1997). In this model, the candidate's own preferences determine the policy outcomes. In their respective studies on the link between reservation and rural policies, Basu (2003), Chattopadhyay and Duflo (2004), Duflo (2005), Jayal (2008), Patel (2008) and Clots-Figueras (2011) all state that the policy making is influenced by the gender of the chair. When the pradhan is a woman more money is invested in sanitation, drinking water and children. Ban and Rao (2006) also found that, although both men and women provide similar services, education was more targeted by women. Such divergences in policies with respect to the candidate's gender appear to indicate that the personal preferences and opinion of the leader predominate and shape the policy making (Besley and Coate 1997). In such cases, PRIs could then theoretically be successfully modelled by the Citizen-Candidate theorem.

Contrary to those studies, other recent scholars have argued that the gender of the pradhan is irrelevant to policy outcomes in the PRIs. A study of 80 PRIs and 966 households undertaken by Raabe *et al* (2009) shows weak support of a correlation between the gender of the pradhan and the policy outcomes. Other recent studies, such as Campa (2011) and Ferreira and Gyourko (2011), found no evidence that female pradhans invest in different assets, compared to their male counterparts. A lack of difference between reserved and unreserved PRIs has been taken as a proof of the existence of a Downs' (1957) median-voter system (Raabe *et al* 2009, Campa 2011). In the Downsian model of median-voters, the preferences of the candidates – male or female – is essentially considered irrelevant; and as long as there is political commitment, the opinion of the voters is what matters (Campa 2011). Downs (1965) suggests that individuals operating on the political level are self-interested and mostly desire power, income and prestige. They want to maintain their positions as elected representatives with all its inherent benefits, and therefore stride away from their own convictions towards decisions that they think the public prefers. Downs further argues that political actors choose short-term policies that will help them gain the support of the local electorate and maintain their status as leaders. A Downsian system in PRIs would mean that, theoretically, the reservation law would not lead to

differences in the policy outcomes because the decision-making is shaped by the electorate – the villagers – and not by the pradhan.

2.3. Women and tradition: constraints

While the debate continues over which Public Choice model best represents the decision-making processes within the PRIs, most scholars corroborate one aspect: that other socio-cultural factors can impede PRIs from functioning as theoretically predicted. For supporters of the Downsian model, if no change in policy outcomes is detected from reserved PRIs compared to unreserved ones, it is principally due to the fact that, despite having a female PRI chair, the participation of women in public meetings did not increase (Campa 2011). Others, adhering to the Citizen-Candidate model, have argued that if no difference in policy outcome is observed it is because women struggle to exert influence in the context of their patriarchal traditions and their social background (Buch 2000).

These comments from supporters of both models highlight the fact that gender norms and social background might hinder the models from accurately predicting the participatory effect of women in PRIs. For example, such impediments could be linked to education or age. As suggested by many studies, uneducated or younger women struggle to embrace their position as leaders when having to face educated or older men (Chattopadhyay and Duflo 2004, Ban and Rao 2006, Jayal 2008, Patel 2008). Another obstacle might be the perception that women lack political interest, based on the common description of female leaders being 'parachuted' without much volition into politics by the reservation law (Jayal 2008). The often demeaning implications of being imposed in PRIs by quotas, combined with the age and education differences with men, means that women are frequently described as simply having a 'token' role (Ban and Rao 2006, Jayal 2008). The reservation law pushes women with no prior-experience, or no real will for activism, into a system where they are treated as 'figureheads who are silenced [and] marginalised' (Basu 2003). Their lack of experience then means that women perform worse than men in the same situation (Ban and Rao 2006).

Another major hindrance to PRIs' policy-making processes complying with either voters' model is the strong patriarchal tradition in India. Mumtaz (2005) and Jayal (2008) argue that because of cultural-constraints women have performed with different levels of success across the country as well as across the different levels of governance. Sharma (2004) found that despite attending negotiation meetings, women often struggle to exert any influence because of existing power-relationships underpinning the decision-making processes. Female pradhans have to face the daily challenge of exerting power over male members, while also gaining the confidence of male members of public service organisations – with whom they have to collaborate on different schemes. Sharma's observations corroborate Cleaver's (2001) remark that women are judged firstly on the basis of their gender and therefore must deal with embedded knowledge and expertise expectations inherent to the social context of negotiation. They have to perform within the framework of norms and tradition (Tandon 2003 in PRIA 2003). This often means that women might be perceived as ineffective leaders because, due to cultural beliefs, women are traditionally subordinated to men and unable to exert influence in the public arena of decision-making (Buch 2000).

2.4. Women and traditions: expectations

The role of female members needs to be looked at from within the broader framework of the local social context, inherent gender norms and labour divisions (Buch 2000). How women are perceived within the context of tradition and culture might create substantial pressure on *how* women ought to behave, but it might also lead to expectations on *what* women ought to be interested in. Discourses depicting women as constituting essential agents of change are based on the commonly shared concept that women are more concerned about their family and their direct community. Their sole presence in governing bodies is key to a successful shift towards a more socio-economically equitable society and towards more sustainably managed local resources. More importantly, it is a basis for creating female-centric policies such as improving

education for women, increasing access to health systems, and providing options for financial independence (PRIA 2003,Alley 2011).

The paradigm that women's presence in local governance would favour the targeting of policies towards more marginalised sections of communities is based on two ideas: firstly that men and women essentially have different needs and preferences which can be expressed through the representative means of female politicians; secondly, women are 'self-less' actors who care for the good of the community as a whole (Evertzen 2001, in Singh 2006). Many scholars, organisations, and policy-makers have depicted women as more 'community-aware' (Basu 2003, Rehavi 2007, Jayal 2008, Patel 2008). Women are perceived to get a sense of value for serving their family and villagers and their motivations for being politically engaged in PRIs lie entirely within the framework of 'devotion' (Alley 2011: 100) and 'self-sacrifice' for the community (*Ibid*: 110). In this context, women are often seen as running for PRI elections because they have been asked by the family or pressurised by the community, rarely of their own volition (Basu 2003). Similarly, female PRI members, because they are perceived as being attentive and committed to their villages, are viewed as running not for their own benefit but because they wish to bring change to the community (Alley 2011).

The assumption that women are more community-driven than men emanates to a certain extent from the concept that the interface between the public and the private sphere remains blurry (Gouws 1999). Women find themselves in a position where they are expected to be simultaneously public actors, as elected agents of the state, as well as private individuals, as wives, mothers, daughters, or neighbours (Jayal 2003, Sharma 2004, Alley 2011). They have to settle conflicts, marital disputes, and power distribution issues while also having to make decisions regarding the management of common goods, such as land and water development (Basu 2003). This places women in a locus where, as political actors, they cannot elude the culture and social norms that shape their private lives and define their 'social being' (Cleaver 2001: 39). As Singh (2006) explains, development programs therefore assume that, as public figures, women's actions and preferences will automatically be an extension of their private role

as a caretaker. Female leaders will, it might be argued, naturally make policies driven toward 'nurturing' the community and the environment. On that basis, women are the ones who will care the most for health, education and general welfare policies, which are then labelled as 'women-friendly' or 'female-congruent' (Karakowsky and Siegel 1999, Clots-Figueras 2011).

2.5. Gender norms

The presumption that the reservation law would facilitate the reaching of more socio-equitable and 'women-concerned' policies, corroborated ideas of gender-divisions in labour and inherent gender-based expectations of knowledge and preference (Ban and Rao 2006, Patel 2008). The myth of the 'self-less woman' is deeply embedded in ideas related to cultural norms of labour where men and women perform different activities (Buch 2000, Singh 2006). Traditional knowledge and responsibilities for the management of common resources are gendered because they are the reflection of the needs, roles and interests in specific natural resources (Singh 2000 in Singh 2006). Water is often seen as a priority for women as they are the ones supporting the community: they need water for their cattle, cultivation and house-hold chores (Patel 2008). However, in Indian societies, resource management, including that of water, is more often perceived as a masculine task for it lies within the sphere of public goods, outside of the domestic realm (Singh 2006). Men are also the ones managing water on the formal level, while women express their needs and preferences through informal channels (by talking to a male in the household or to an elderly woman with status and influence) (*ibid*.). By and large, private domains are associated with the feminine world while public domains are associated with the masculine one (Tambiah 2003).

The institutionalised integration of women through the reservation law was thus praised for promoting a type of governance that would address both male and female's interests over the access and control over resources such as water (Cleaver 2000, Evertzen 2001 in Singh 2006). However, modern PRIs exist within the same social framework and cultural norms of traditional labour divisions (Alley 2011). While reservation is seen as an opportunity to weaken such

prevailing gender traditions, these norms remain strongly embedded in local institutions (Buch 2000). Participants, who, as previously said, are categorised by their gender, must comply with the tradition of having masculine and feminine domains. A member's level of influence thus depends on the gender-congruence of a task (Karakowsky and Siegel 1999). In PRIs, this means that, although women in theory have equal power as men, they might not stand with the same level of influence in matters that traditionally remain masculine tasks, such as water resource management. This also means that for decisions on MGNREGA investments – which, being about agricultural development and water management, would naturally fall under male domains – female PRI members might face the constraints of culturally embedded gendered norms of labour.

Overall, one needs to understand that in rural India, women might struggle to balance the role of their familial status with the role of the state representative (Buch 2000). The reservation law directly challenges existing power relations, specifically when women are asked to make decisions on irrigation and land development (such as for MGNREGA developments) which are traditionally male-congruent activities. Considering the broader context of tradition and norms this might signify that women simply do not wish to interfere in affairs that are traditionally managed by men in the public sphere (Singh 2006).

3. METHODOLOGY

3.1. Context

A clearly male-congruent domain, relevant for this study, is the irrigation system in Northern India. In the mountainous and agrarian region of Himachal Pradesh, two types of irrigation are practiced: rainfed and surface water[21]. Water from springs and small rivers is diverted into canals, locally named kuhls, and into drainage lines to irrigate individual fields. In addition to

[21] Rainfed irrigation refers to farming practices that rely on rainfall for water while surface water irrigation denotes the use of rivers, streams, or ponds and reservoirs to meet agricultural water needs.

the kuhl systems, many reservoirs exist to capture the runoff during rain events, or sometimes store water from the kuhls. Some kuhls have existed for centuries and these irrigation practices carry deeply rooted practices of the gendered division in labour (Baker 2005). Under traditional gender norms of labour, men are responsible for the management of the kuhls – construction and renovation as well as water distribution – while women control the drainage lines within their fields.

In recent years, factors such as the shift in economic activity from land-based to non-agricultural jobs have led to the decline in participatory social practices and the subsequent abandonment or mismanagement of kuhls and traditional reservoirs (*ibid.*). In addition, increased climate variability has augmented the occurrence and intensity of large flood events (Dhameja 2004), often leading to the damage to the kuhls' fragile structure. In an attempt to mitigate the increased malfunction of irrigation systems, a number of kuhls in the Kangra Valley have been taken over by the state. However, due to financial restrictions within the Irrigation and Public Health department (IPH) and subsequent difficulties in restoring and maintaining all canals, the state increasingly devolves some of the irrigation management power into the hands of PRIs. The development and renovation of kuhls and reservoirs, as well as the development of flood mitigation strategies – such as the reforestation of hilly areas or the constructions of bunds[22] – have thus been the focus of many communities and PRIs. This type of work falls directly under the framework of possible projects to be undertaken by MGNREGA, and PRIs have therefore started using MGNREGA labour to tackle irrigation issues and soil degradation.

[22] Bunds refer to retaining walls designed to prevent water flowing out of reservoirs or riverbeds during heavy storm events.

3.2. Survey

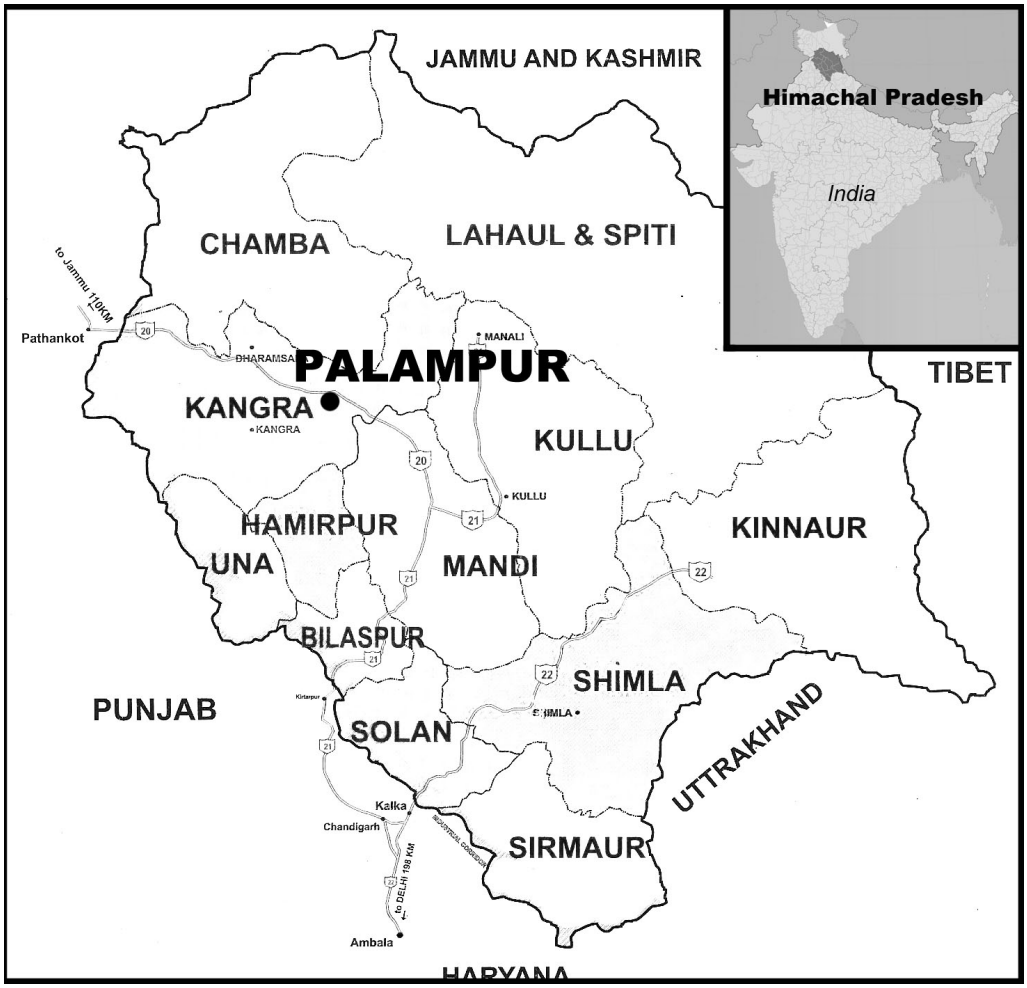

Figure 1. Study site: Palampur area in Himachal Pradesh.

A survey was undertaken in six PRIs on April 3rd of 2011, in rural areas surrounding Palampur (Figure 1) in the Kangra Valley, Himachal Pradesh. The survey was carried out on all male and female PRI representatives (41 respondents).[23] Targeted panchayats encompass revenue villages well connected by roads[24] and where surface irrigation from kuhls is used for agriculture. The majority of the PRI members were from Schedule Tribes (41 per cent), 27 per cent from the

[23] Before interviews were carried out, each respondent had to consent to the ethical agreement as given by the enumerators. The agreement, previously approved by the Central University Research Ethics Committee of the University of Oxford, gave respondents an overview of the research aims and purposes and informed them of their rights as participants. Each interviewee consented to have their opinion used for the research, so long as anonymity was preserved.

[24] Himachal Pradesh has the greatest road density amongst the mountainous states of India. Despite its hilly topography, in 2011, the state had an average road density of 6995 km/million inhabitant, while the national average was 3130km/million inhabitant (Government of India 2012).

General Caste, 22 per cent from Schedule Castes and 7 per cent from Other Background Castes, with a remaining 2 per cent of undisclosed caste. Virtually all members were Hindus. Respondents were newly elected PRI members who had taken office ten weeks beforehand, on January 23rd of 2011. In order to respect anonymity agreements requested by PRI members, the name of the panchayats are not disclosed in this study and, instead, are referred to by randomly assigned letters. Four of the panchayats, named A, B, C, and D, were under reservation, and therefore headed by women. The other two, panchayat E and panchayat F, were headed by male pradhans. Himachal Pradesh being one of the states where the reservation law was increased to 50 per cent, the sample consisted of an almost equal number of male and female PRI members. Overall, including the pradhans, 19 male members and 22 female members gave their informed consent to be interviewed. All surveys were undertaken on the same day, simultaneously in all six panchayats, during one of the two annually held public meetings, *Gram Sabbas*, when all members were present.

3.3. Interviews and MGNREGA data

Trained female enumerators, originating from local villages, individually carried out the interviews of all elected members in each PRIs. The questionnaire consisted of three sections. The first one comprised questions on the respondents' backgrounds (age, marital status, occupation, education, etc.). The second section was aimed at assessing the rationale behind member's motivations and estimating their degree of investment in the PRI. Respondents were asked to indicate their motivations, first as an open question, then by assigning a chosen degree of relevance (not relevant, quite relevant, relevant) to proposed sources of motivation. Members were then asked to indicate the degree of support they experienced from their family (not supportive, quite supportive, supportive) and last, how much time they spent on PRI duties. The final section targeted panchayat issues and MGNREGA investments. Members were asked to indicate from a closed list, what were the two most problematic issues in their jurisdiction. Subsequent to this question, respondents were solicited to choose from a closed list of possible

MGNREGA jobs (from water and soil conservation work to rural connectivity) two investments that, in their opinion, were to be prioritised in the panchayat.

Following the interviews, the *Gram Sabbas* meetings were held, in the presence of villagers, during which the MGNREGA annual list proposal was drawn. This list, after approval by the Block District, was made public and available to consult on the official MGNREGA website, in accordance with the transparency policy (MGNREGA website 2011). The final annual decision list for each panchayat was then consulted in order to draw a comparison between member's individual preferences and the final collective decision outcome.

Collected data from the surveys and from the publically available MGNREGA annual proposal were analysed using the simple descriptive analysis program SPAD 7.4. To analyse the significance of the various motivational factors, the categorical factors 'significant', 'quite significant' and 'not significant' were converted into continuous variables with values of 100, 50 and 0 per cent respectively. The variable was thus labelled 'motivational significance' (%).

Additionally, in order to provide qualitative information to the research, key stakeholders in rural development in HP were interviewed, using a semi-structure interview. Between November 2010 and April 2011, the Block District Officer, responsible for approving the MGNREGA annual list proposal, the Chief Director of the Forest Department in Kangra District, responsible for implementing the World Bank Integrated Watershed Development Project[25]; and the Executive Engineer of the Irrigation and Public Heath department (IPH), were interviewed.

4. RESULTS

The outcomes of the descriptive analysis are presented here. The small-size of sample allowed for a thorough understanding of the preferences of each PRI member. Weighing individual

[25] The Integrated Watershed Development Project is a World Bank sponsored program aimed at reducing rural poverty by improving agricultural productivity through the restoration and rehabilitation of eroded hills and degraded irrigation systems (World Bank 1999).

preference patterns enabled an understanding of the overall dynamics of influence in the decision-making processes within each PRIs. For clarity, results are organised in small sections in order to highlight found tendencies from the individual level (background, motivations, MGNREGA preferences, etc.) to the group-dynamic level. In order to differentiate regular members from the pradhans, this paper refers to the head of the PRIs as male or female pradhans, and to the other non-chair members, as male or female PRI members.[26]

4.1. Respondents' backgrounds

Table 1. Age, proportion of illiterates, education level, and time spent on PRI duties with respect to the respondents' role in the PRIs (male of female pradhan or PRI member).

	Age (years)	Proportion of illiterate (% of total sample)	Average level of education (grades)	Time spent on PRI duties (hours/week)
Male Pradhans	43.5 [12.5]	0.0	13.5 [1.5]	26.5 [18.5]
Female Pradhans	31.3 [2.5]	0.0	10.7 [0.9]	25.0 [20.0]
Male PRI members	36.4 {[11.2]	0.0	10.5 [2.6]	16.2 [11.2]
Female PRI members	40.6 [11.2]	31.6	5.8 [4.8]	15.6 [9.3]

For each role and gender within the PRI, the age, proportion of illiteracy, education level for literate members, and overall time spent on PRI duties are presented in Table 1. Overall, the age difference between female and male members was not statistically significant[27] but female pradhans were significantly younger than male pradhans and significantly younger than female members. Regarding education, results indicate that on average, male members were significantly more educated than female members. While no male member was illiterate, almost 32 per cent of female members were illiterate. Literate women had also studied for significantly lesser durations than their male counterparts. Pradhans of both genders were comparatively more educated than the PRI members with an average of two to three more years of study than the other members of their gender. However, female pradhans remained significantly less

[26] In this study the vice-chair, or *upa pradhan,* was considered as ordinary PRI member.
[27] The statistical difference is calculated to the 10 per cent significance.

educated than male pradhans. Regarding their commitments to PRIs, both male and female pradhans reported spending a similar amount of time on PRI duties with an average of under 26 hours per week. Female and male members also reported working an equal number of hours, averaging 15 hours per week. Finally, all members reported attending all meetings, twice a month.

4.2. Motivations

For 60 per cent of male members and over 47 per cent of female members the main reason for running for PRI elections was because 'they had been asked by villagers'. When asked about more personal motivations, both men and women reported that their greatest motivation was 'personal prestige' with men giving it more than 84 per cent significance and women 75 per cent. 'Bringing change' to the panchayat was the second most significant motivation for men (74 per cent) while women assigned it an average significance (53 per cent). When asked about family support, 50 per cent of female members stated that their family was not supportive of them becoming politically involved in the panchayat. The other half of female members recognised that their family was quite supportive. For male members, almost 65 per cent estimated that their relatives were not supportive while the rest stated that they were quite supportive.

4.3. Concerns and Preferences for MGNREGA investments

Results regarding the concerns in the panchayats and the preferred MGNREGA investments of all male and female members (including pradhans) are presented in Table 2. The following table, Table 3 presents the same MGNREGA preferences but within each individual PRI. In this table, the total number of votes cast for each MGNREGA possible work (each respondent could only choose two priorities) is indicated according to the roles within the PRI (male or female pradhan, male or female member). In addition to the distribution of members' preferential votes, the table presents the final decision outcome with, for each work, the percentage of MGNREGA

fund to be invested for the annual proposal of 2011-2012. The analysis of the results presented below is summarised in the following section.

Table 2. Vote distribution for 'top two issues in panchayat' and 'top two preferred MGNREGA investments' with respect to gender.

Issues in panchayats	Percentage of members ranking the issue as one of top two most problematic (%)		Percentage of members ranking the issue as one of top two problems to be tackled by MGNREGA (%)	
	Women (N=22)	Men (N=19)	Women (N=22)	Men (N=19)
Inadequate rural connections	41%	42%	32%	32%
Inadequate maintenance of irrigation systems (kuhls)	72%	78%	77%	84%
Lack of irrigation systems (kuhls)	36%	47%	32%	37%
Inadequate maintenance of water storages	9%	10%	9%	11%
Lack of water storages	5%	5%	14%	11%
Insufficient flood protection	**14%**	**0%**	14%	21%
Increased deforestation	5%	0%	**0%**	**9%**
Crop damages by wild animals	5%	5%	0%	0%
Inadequate school facilities (sanitation)	5%	5%	0%	0%

Numbers in bold indicate a 10 per cent statistical significance in the difference between men and women.

4.3.1. Gender and preferences

From the first column in Table 2, which shows the issues ranked as 'top two problems in the panchayat', statistically significant similarities between women and men's concerns are observed. For both groups the 'inadequate maintenance of the irrigation system (kuhls)' is the major issue with more than 70 per cent of women and more than 77 per cent of men having chosen it as one of the two main problems in the jurisdiction. Road construction appears to concern a similar number of men and women (above 40 per cent for women and 41 per cent for men). A smaller number of women highlighted the lack of irrigation facilities as a problem (above 35 per cent) compared to men (almost 48 per cent) although the difference was not statistically significant. Despite only women highlighting the increase of deforestation as an issue, the difference with men was not statistically significant either. The only significant difference was in the opinion on flood protection: 12 per cent of women thought floods were a major issue compared to 0 per cent of men. All remaining issues, including the inadequacy of school infrastructures, were identified as priorities by a low number of male and female members, but similar between the two genders.

The second column in Table 2, which identifies the top two priority investments to be undertaken by MGNREGA, illustrates similar results to the previous table. Women and men do not significantly differ in their perspective on rural development under MGNREGA. For both genders the 'renovation of existing kuhls' comes as the main work to be undertaken, with 78 per cent of women and more than 82 per cent of men choosing it in the top two. A similar percentage of men and women chose the development of roads in the top two (just above 30 per cent for both genders). 'Building new kuhls' and 'planting trees' were chosen by a slightly greater percentage of men than women (35 and 9 per cent of men as opposed to 31 and 0 per cent of women, respectively) but the difference was not statistically significant. Although no men had reported floods and deforestation as issues, a significantly greater percentage of men would choose to use MGNREGA to develop flood control infrastructures (21 per cent, as opposed to 14 per cent of women). For the renovation of traditional ponds and the construction of new reservoirs, the percentage of men and women reporting them as top two MGNREGA priorities are similar and are relatively low compared to kuhl work or road development.

4.3.2. Preference dynamics in small-groups

Table 3 illustrates the voting distribution for the preferred two MGNREGA investments within each PRI, as well as the final MGNREGA investment allocation. The table is divided into two sections, with the top-four panchayats being female-led and the bottom-two male-led. In female-headed PRIs, members appear to be divided regarding the necessary MGNREGA investments to be undertaken. Although in all PRIs the 'renovation of existing kuhls' received the most votes, the rest of votes are distributed heterogeneously on other tasks and present no clear pattern of gendered preference. In addition, the investment distribution drawn in the annual proposal indicates that some projects were given priority without having anyone's preference. For example, in panchayats A and B, the annual proposals plan a respective investment of 27.9 and 37.3 per cent of the total MGNREGA expenditure on road development while no members had given this task a priority (however the preference of panchayat A's

female pradhan is unknown). In the other female-headed PRIs, similar observations can be made where road construction received significant investment despite few members identifying it as their top two priorities.

Areas that were given priority by the greatest number of people are also not necessarily the ones where the greatest percentage of MGNREGA funds is allocated. For instance, despite 'kuhl renovation' being voted as a priority by the majority or members, it received only 11.2 per cent of funds in panchayat B, while in panchayat C its allocated funds (27.3 per cent) are lower than for road construction and the building of new reservoirs (both 36.4 per cent). In panchayat A, projects for kuhl renovation and kuhl construction are also being allocated fewer funds than road construction (17.4, 17.4 and 27.9 per cent respectively). Panchayat D is the only female-headed PRI where 'kuhl renovation' is the task with the greatest planned MGNREGA investments (62.5 per cent).

Finally, results from Table 3 do not appear to indicate that in all reserved PRIs the fundamental power of decision lies within the hands of the pradhan (Besley *et al* 2004). Although in panchayat D, almost the totality of MGNREGA funds have been allocated to 'road development' and 'renovation of kuhls' projects, which were both prioritised by the female pradhan, this trend is not visible in the other reserved PRIs. In panchayat C, for example, although the pradhan chose to prioritise flood protection work, the investment made in this area was null. The greater proportion of MGNREGA funding was allocated to 'road development' and 'building new reservoirs', which were not given preference by the female pradhan.

As opposed to reserved PRIs, the opinion trends in male-lead PRIs (panchayats E and F) appear more homogeneous. All women share the same views as the male pradhan while only two different views were expressed by men. In those two unreserved PRIs, the groups were clearly in agreement about which investments should be prioritised first. This is especially visible with the vote distribution in panchayat F where all members, including the pradhan chose 'road development' and 'renovation of existing kuhls'. Those preferences are also relatively more matched with the annual MGNREGA allocations proposal than in reserved PRIs. In both male-

led PRIs the proposed fund allocations match members' preferences. Most funds were assigned to 'road construction' and 'kuhl renovation', totalising 93.8 per cent of MGNREGA investments in panchayat E and 67.8 per cent in panchayat F.

Table 3. Vote distribution for 'top two preferred MGNREGA investments' with respect to the respondents' role and panchayat.

Panchayats		Member's casted votes and final planned investments for proposed MGNREGA projects (% of total MGNREGA investments)						
		Road development	Renovation of existing kuhls	Building new kuhls	Renovation of traditional ponds	Building new reservoirs	Flood control and protection work	Tree plantation
Panchayat A (N=6)	Men (n=2)	0	1	1	1	0	0	1
	Women (n= 3)	0	3	2	0	0	1	0
	Female Pradhan*	--	--	--	--	--	--	--
	MGNREGA Investments (tot= 2,008,000 Rs)	27.9%	17.4%	17.4%	2.4%	13.9%	7.0%	13.9%
Pamchayat B (N=6)	Men (n=3)	0	1	2	1	0	2	0
	Women (n=2)	0	2	1	1	0	0	0
	Female Pradhan	0	1	0	0	0	1	0
	MGNREGA Investments (tot= 1,875,000 Rs)	37.3%	11.2%	11.2%	2.9%	11.2%	14.9%	11.2%
Panchayat C (N=8)	Men (n=3)	0	3	1	0	1	1	0
	Women (n=4)	2	1	3	0	2	0	0
	Female Pradhan	0	1	0	0	0	1	0
	MGNREGA Investments (tot= 2,238,000 Rs)	36.4%	27.3%	0.0%	0.0%	36.4%	0.0%	0.0%
Panchayat D (N=7)	Men (n=3)	0	3	2	0	0	1	0
	Women (n=3)	1	2	1	1	1	0	0
	Female Pradhan	1	1	0	0	0	0	0
	MGNREGA Investments (tot= 2,291,000 Rs)	31.3%	62.5%	0.0%	0.0%	6.2%	0.0%	0.0%
Panchayat E (N=6)	Men (n=3)	1	3	1	1	0	0	0
	Women (n=2)	2	2	0	0	0	0	0
	Male Pradhan	1	1	0	0	0	0	0
	MGNREGA Investments (tot= 2,376,000 Rs)	31.3%	62.5%	0.0%	0.0%	6.2%	0.0%	0.0%
Panchayat F (N=8)	Men (n=3)	3	3	0	0	0	0	0
	Women (n=4)	4	4	0	0	0	0	0
	Male Pradhan	1	1	0	0	0	0	0
	MGNREGA Investments (tot= 4,755,000 Rs)	42.4%	25.4%	20.3%	0.0%	3.4%	8.5%	0.0%

* The vote of the female pradhan in panchayat A was not recorded as her interview was not deemed valid.

5. DISCUSSION

5.1. Women in small groups: demystifying the 'token' image

The fact that in this study women tend to be significantly younger, less educated, and more illiterate than man could give ground to concerns expressed in other studies over women's ability to effectively engage in the political life of panchayats (Jayal 2008). However, the motivations and work habits of women in PRIs in this survey appear to indicate that they are not less interested in PRI matters than male members. The equal attendance to PRI meetings of women and men and the similar amount of time both genders spend on PRI duties attest to a certain degree in favour of their political involvement. Buch (2000) also found that a large proportion of women regularly attend PRI meetings and carry a substantial amount of work linked to panchayat activities. PRIA (2003) found that female pradhans heavily engage in their duties, spending as much as two weeks per month attending meetings, functions, going to the Block Office, settling local disputes and visiting their constituencies. Despite their sometimes-younger age and their lesser education, women might be as dedicated in PRI matters as men. Thus, the education trend might be more an inevitable consequence of local demography rather than a determined tokenism strategy from men to ensure that only easily controllable, young, and uneducated women sit at the PRI (Ban and Rao 2006). Despite HP being considered a leading state in terms of education achievements (HP planning 2010) – with the Kangra district achieving particularly high levels of literacy (Census of India 2011a) –literacy remains higher for men than for women (91.42 per cent and 79.64 per cent respectively) (Census of India 2011b). Women generally tend to be less educated than men in rural India and education is not a prerequisite for engaging politically in the panchayat (Ban and Rao 2006, Patel 2008). In fact, Ban and Rao (2006) found that, although female PRI members were less educated than their male counterparts, they tended to be at the top end of the general female population with regard to knowledge, and above average on education.

Parallel to this, the survey also appears to demystify the idea that women do not run for a seat in PRIs of their own volition but conform to family pressure or demand from the community (Basu 2003, Sharma 2004). In this survey, the majority of *both* women and men reported having become PRI members following the request of the villagers. In fact, a greater percentage of men stated that the community pressure was the main reason for them to become members, essentially opposing the idea that only women are being forced by other villagers to run. Ban and Rao (2006) also contested this idea by showing that both men and women were equally likely to have been asked to engage in the PRI by political elite (previous presidents, members of local political parties or important members in the community). The observation that more women than men have family support is recurrent in literature on gender and panchayat, and is often subject to discussion over tokenism (Buch 2000, Raman 2002, Ban and Rao 2006). Buch (2000) implies that the strong familial link and involvement of relatives in PRIs might be due to the family seeing an opportunity to benefit as a whole and hence encouraging the contest of women. Ban and Rao (2006) on the other hand suggest that this is more likely due to local culture, where women feel more comfortable entering into the political arena with the full support of their spouse. Considering that, in this study, neither women nor men reported that family pressure was a significant reason for them to run, it might be argued that women, of their own volition, choose to seek the support of their relatives. Women may thus not be 'tokens', but individuals who appear to be willing to enter the PRI for similar reasons as men, in response to their own ambitions and to the community's demand regardless of the support of their relatives.

These results, depicting women in PRIs being as dedicated and self-motivated as men, would give ground to a certain extent to a Candidate-Citizen model of public choice where each individual is politically committed and empowered to exert influence, if desired. Difference or similarities in the policy making in reserved and unreserved PRIs would then be the direct results of PRI members' preferences.

5.2. Socially built gender-based expectations within the Panchayats

Women might be independent, self-motivated and keen political figures but in the PRIs they do not act individually; instead they perform in small groups, interacting with other male and female PRI members. Decisions are made in assemblies ranging from five to eight members, with a majority of either men or women. In theory, since the most influential member of the group is the pradhan (Chattopadhyay and Duflo 2004), members could be expected to align their opinion with the pradhan, regardless of the gender composition of the group. In this survey, this theory appears to be true in male-lead PRIs, where all members follow the opinion of the pradhan; however, female-led PRIs show a distinct heterogeneity in preference distribution. Women and men do not act as a uniform group and have varying opinions pertaining to what MGNREGA investments should be done first. Female pradhans had held office for a relatively short period of time before the study, and considering the culturally engrained lack of legitimacy of female leaders – as opposed to male leaders – their novelty in the PRIs might be a key factor in explaining the heterogeneity in opinions in female-led PRIs. It is also possible that female-leaders might create an environment more open to expressing diverging opinions than their male-leader counterparts. Pratto and Stallworth (1997) found that in small groups, men and women fundamentally differ in their socio-psychological orientations: men tend to favour group hierarchy, while women prefer group equality. They tend to encourage every participant, giving them the feeling that they stand on an equal level of power and hence influence. By favouring mutual empowerment, women create a more harmonious environment in which everyone can participate and express their own opinion (Kolb and Coolidge 2001). However, by doing so, women also step away from the common perception of leadership, where power is viewed as the 'exertion of control over others' (Kolb and Coolidge 2001: 263) which might lead them to being perceived as powerless, passive or inactive (Emerson 1962 in Kolb and Coolidge 2001). The trade-off of ensuring that male and female members feel comfortable expressing diverging preferences might then be the resulting apparent lack of leadership skills of female pradhans. In male-led PRIs on the other hand, a hierarchic

environment might more likely have been established which makes members (male and female) more inclined to aligning with the opinion of the pradhan, who might then be perceived as dominant and influential.

Reserved PRIs may also show lesser uniformity in opinions between members and pradhans because the topic of the research concerns MGNREGA, which, with its focus on irrigation and land development, is traditionally a male domain. In small governance groups like PRIs, gender is 'made public' and legitimised as characterising the person involved in the decision-making (Maznevski 1994: 534). Members are thus inclined to act and behave in more stereotypical ways when their gender is identified (Eagly 1987). They therefore enter the tradition-built framework of gender roles where certain responsibilities are male or female-congruent and the level of influence of members depends on the gender-congruence of a given task (Karakowsky and Siegel 1999). In the majority of cases, PRI work is unpaid which might explain why communities and members themselves view it as being an extension of male and female's traditional labour division (Alley 2011). The issues tackled in MGNREGA can be labelled male-congruent and other members might not perceive female-leaders as being competent and having rightful opinions on this topic. Within the small group of PRI members, men and women might therefore not align with the MGNREGA preference of a female-leader because gender roles portray her as lacking expertise in this area. For male-led PRIs then the opposite might happen and, when discussing male-congruent topics, all members might align with the opinion of the chair because his gender may legitimises his expertise.

In reserved PRIs, the final decision on MGNREGA investments, shown in the annual proposals, does not necessarily match the opinion of the pradhan. While this could provide a strong argument in support of the tokenism model, where the real influence lies within male members, a quick look at the annual proposal in female-led PRIs indicates that male members' opinion is not necessarily followed either. There is no visible domination of male influence in female-led PRIs, which implies that other factors may shape the outcome of the decision-making process. One such factor might be the added presence of outside viewers and participants. Indeed, while

the preferences were stated individually, the final proposal is always drawn during the *Gram Sabhas*, and thus during an open meeting attended by a large proportion of male and female villagers. Cooke (2001), in his work on decision-making processes in groups, highlights that social psychological analyses often show how preferences of individual people might differ from the final outcome decided as a group. While individuals might have diverging opinions from the rest of the group, they might not be willing to publicly express it – such as during *Gram Sabhas*. In fact, under what is called the Abilene paradox, participatory processes might bring a group to decide on what they suppose everyone else expects them to say rather than on what they really support (*ibid.*). The fact that the Block District Office must approve the annual proposal might influence pradhans into choosing investments that they hypothesise will be supported by higher levels of governance. However, communication with the Block District Officer indicates a different preference than seen in the proposals, whereby 'irrigation ought to be at the top of the list and road at the bottom' (personal communication, Block District Officer in Lambagaon, December 2010). Other governmental institutions, such as IPH and the Forest Department, also expressed lower preferences for road development (personal communications, Director of Forest Department in Dharamsala November 2010, Executive Engineer IPH in Palampur April 2011).

The major influencing factors may then come from the community, where the desire to maintain reputation remains important, particularly in small villages (Ostrom 1990, 1996). Although road connectivity is relatively dense in the Palampur area, panchayats might publically prioritise roads construction because it often is the easiest MGNREGA task to design and implement in terms of planning capacity and accessing technical expertise (Mukherjee and Ghosh 2005). Building roads might thus better reflect on their reputation (*ibid.*). Men and women are also shaped by relationships within the community and individual freewill exists within the boundaries of social norms and gender expectations. During open meetings of PRIs, members, and more specifically pradhans, might therefore arrive at final decisions that they think are expected of them. This strategy to draw certain policies over others in order to be socially

accepted echoes to certain extents Buchanan and Wagner's (1977) work on the Keynesian macroeconomic models and Public Choices. Unlike Keynes (1936) who believes that politicians always act in the interest of the public rather that their own, Buchanan and Wagner argue that politicians want above all to stay at the summit of their political career and might thus invest in larger projects which improve their chances of re-election. This, arguably, would link towards a model of Downsian public choice, where the electorate determines policy outcomes (Downs 1965). Considering that road work is paid irrespective of the status of completion of the job – unlike other work types which are paid upon effectuated tasks (Khanna 2010) – this might explain why road development is heavily invested in despite not being prioritised at the individual level. Pradhans might feel pressurised to invest in this more lucrative type of work in order to satisfy their electorate – comprised of MGNREGA workers. Unless it is a female-congruent domain, the pradhan might be unlikely to impose her opinion on the rest of the community. She might then make her decisions based on what she expects 'the community wants' in order to maintain her reputation and social acceptance.

5.3. Building the myth of the 'self-less' women

The fact that women are perceived as less competent and influential than men in MGNREGA decision-making is not the mere reflection of a difference in thinking linked to gender, where women might have 'wrong' preferences. In fact, looking at the results from this small survey, women and men as a whole appear to be a homogeneous group when it comes to their MGNREGA preferences. There is no significant distinction between issues that most concern female members and those that alarm male members. Aside from the small divergences, such as the fact that slightly more men thought that there were not enough irrigation canals while only women were concerned by the lack of flood protection or deforestation, overall the inadequacy of the irrigation canal system (kuhls) appears to be the most problematic issue for the great majority of members. The similarities in concerns are even further echoed by the vote distribution for MGNREGA preferred investment where men *and* women stated that

MGNREGA money should be invested in the renovation of kuhls. While this choice was made from a closed list of possible MGNREGA work, it shows that, when asked individually, men and women appear to have similar concerns and priorities regarding land and water management. Inclinations for the provision of public goods appears to be gender neutral and more likely related to social, economic and institutional factors, such as caste, religion, ethnicity, involvement within the community or political linkages (Sharma 2004, Singh 2006, Raabe *et al* 2009).

Women might have the same preferences as men, but are expected to know less than them in male-congruent matters and thus not perform in this domain (Karakowsky *et al* 2004). Cultural beliefs presume women to have other areas of expertise. As first explained in the theoretical context of this paper, some scholars explicitly depict women as political figures entirely devoted to their community (PRIA 2003, Rehavi 2007). As opposed to men, who are depicted as wanting to seek benefits from their position and are prone to corruption, they are portrayed as wanting to run for PRI elections only because they care for the rest of the villagers (Vyasulu and Vyasulu 1999, PRIA 2003). Women are viewed as being 'selfless': their concerns lie entirely in the well-being of other villagers and they will thus invest more in education and health. This survey however found no difference in the motivation of women and men. Men *and* women acknowledged that the elevated status gained by being a member was the most significant motivation. In fact, 'bringing change to the *panchayat*' was more important to men than to women. Furthermore, issues related to school were brought up by an equal number of men and women, contradicting the idea that only women are community-concerned.

Differences found in policy provision based on gender might not be a consequence of women being more 'selfless' and 'community-caring' than men, but rather a result of culturally embedded gender roles. Women might be *expected* to feel concerned by health, education and domestic water. They might therefore only stand with sufficient power of influence in those specific female-congruent tasks. While female pradhans might be as willing as men to improve irrigation system provision, they may face the risk of not being as successful as male pradhans

in these domains – as irrigation and land management are traditionally not-congruent to their gender. This does not make them less effective leaders. This situation may in fact also be applicable to male leaders engaged in female-congruent tasks. Raabe *et al* (2009) found that male pradhans were perceived as performing worse than women in issues related to education and health. However, as Tambiah (2003) notes, tradition is not the sole factor limiting the influence of men and women to certain domains of influence, as the state often reinforces such gender-roles. The state plays along with the assumption that women are better placed than men to manage certain resources and make related policies. This indirectly reinforces the idea that, in all other areas, women will have less legitimacy than men. By incorporating the concept of the 'selfless' women and anticipating that they will perform best in managing health and welfare domains (such as drinking water), development programs in essence might implicitly reduce women's action to those areas only.

6. CONCLUSION

Neither models of Public Choices are fully applicable to PRIs in rural India because they do not account for embedded gender norms. Pradhans can be capable and dedicated leaders who draw decisions from personal preference but their influence-leverage remains restricted by notions of local reputation and to areas congruent to their gender. In non-gender congruent fields, such as MGNREGA investments related to land and water development, female leaders might choose to draw policies based on what they expect the electorate would prefer. When dealing with non-gender congruent domains, the PRIs might therefore operate in a Downsian policy-making process. On the other hand when making policies related to issues congruent to the pradhan's gender, the Citizen-Candidate theory might instead better represent the functioning of PRIs.

What determines the gender-congruence of a task might be strongly determined by culturally inherited gender norms and expectations but they are also shaped by modern development discourses. Organisations and policy-makers who depict women as 'self-less' and 'community-

driven' might exacerbate gendered expectations that pressurise female leaders to primarily act in health, education, and wealth distribution domains.

Women's presence in PRIs might help create a more democratic and equal environment for negotiation, but their effect at the policy-making level cannot be limited to women-friendly matters. Women are as capable as men of understanding larger and more communal issues (Lehman Scholzman *et al* 1995, Pratto and Stallworthß 1997). As political leaders, whose leadership cannot be regarded and restricted to certain areas only, women should be able to transcend gendered labour divisions and gender roles and exert more influence in domains such as irrigation and MGNREGA investments.

Karakowsky and Siegel (1999) state that the only possible way to counteract the effects of gender-congruence is to ensure that women form a majority. The current increase in the number of state adopting the 50 per cent reservation policy is encouraging but may be insufficient. Most importantly, the source of gender-role expectations should be tackled. Policy-makers and development organisations should highlight women's capability to make decisions not only on women-friendly issues but also on all other domains of governance in Panchayati Raj Institutions.

REFERENCES

Alley, H., 2011. The politics of devotional labor: women in the panchayat raj. BA dissertation, Wesleyan University, Middletown.

Baker, J.M., 2005. *The Kuhls of Kangra: community-managed irrigation in the western Himalaya*. Seattle: University of Washington Press.

Ban, R. and Rao, V., 2006. Tokenism or agency? The impact of women's reservations on panchayats in South India. *Economic Development and Cultural Change*, 56, 510–530.

Bardhan, P. and Mookherjee, D., 2000. Capture and governance at local and national levels. *American Economic Review*, 90, 135-139.

Basu, A., 2003. Gender and governance: concepts and contexts. *In*: UNDP, ed. *Essays on gender and governance.* Delhi: UNDP, 20-58.

Besley, T. and Coate, S., 1997. An economic model of representative democracy. *The Quarterly Journal of Economics*, 112(1), 85-114.

Besley, T., Pande, R., Lahman, L. and Rao, V., 2004. The politics of public good provision: evidence from Indian local governments. *Journal of the European Economics Association*, 2(2–3), 416–426.

Buch, N., 2000. Women's experience in new panchayats: the emerging leadership of rural women. Centre for Women's Development Study Occasional Paper no. 35.

Buchanan, J.M. and Wagner, R.E., 1977. *Democracy in deficit: the political legacy of Lord Keynes*. New York: Academic Press.

Campa, P., 2011. *Gender quotas, female politicians and public expenditures: quasi-experimental evidence*. Mimeo: Stockholm University.

Census of India, 2011a. *Districts of Himachal Pradesh* [online]. http://www.census2011.co.in/census/state/districtlist/himachal+pradesh.html [Accessed 5th August 2013].

Census of India, 2011b. *Kangra district: census 2011 data* [online]. http://www.census2011.co.in/census/district/230-kangra.html [Accessed 5th August 2013].

Chattopadhyay, R. and Duflo, E., 2004. Women as policy-makers: evidence from a randomized policy experiment in India. *Econometrica*, 72(5), 1409-43.

Cleaver, F., 2000. Moral ecological rationality, institutions and the management of common property resources. *Development and Change*, 31, 361-383.

Cleaver, F., 2001. Institutions, agency and the limitations of participatory approaches to development. *In*: B. Cooke and U. Kothari, eds. *Participation: the new tyranny?* London. New York: Zed Books, 36-55.

Clots-Figueras, I., 2011. Women in politics. Evidence from the Indian States. *Journal of Public Economics*, 95, 664-90.

Cooke, B., 2001. The social psychological limits of participation?. *In*: B. Cookeand U. Kothari, eds. *Participation: the new tyranny?* London. New York: Zed Books, 102-121.

Dhameja, A., 2004. Droughts and floods: a case for 'dying wisdom'. *In*: P. Sahni, A. Dhameja, and U. Medury, eds *Disaster mitigation: experiences and reflections*. Delhi: Prentice-Hall of India Pvt. Ltd, 76-91.

Downs, A., 1957. *An economic theory of democracy.* New York: Harper Collins.

Downs, A., 1965. A theory of bureaucracy. *The American Economic Review*, 55, 439–446.

Duflo, E., 2005. Why political reservation? *Journal of the European Economic Association*, 3(2-3), 668-678.

Eagly, A. H., 1987. *Sex differences in social behavior: A social-role interpretation*. Hillsdale: Erlbaum.

Ferreira, F., and Gyourko, J., 2011. Does gender matter for political leadership? The case of U.S. mayors.

Working Paper no. 17671. Cambridge, MA: National Bureau of Economic Research.

Gouws, A., 1999. Beyond equality and difference: the politics of women's citizenship. *Agenda*, 40, 54-8.

Government of India, 2012. *Basic road statistics of India, 2008-09, 2009-10 & 2010-11.* New Delhi: Ministry of Road Transport and Highways, Transport research wing.

HP Planning 2010. *Education in Himachal Pradesh* [online]. http://hpplanning.nic.in/Education%20in%20Himachal%20Pradesh.pdf [Accessed on 5th August 2013].

Jayal, N. G., 2008. Engendering panchayats. *In*: B.G. McSweeney, ed. *Another side of India: gender, culture and development*. Paris: UNESCO, 2-7.

Johnson, R.A. and Schulman, G.I., 1989. Gender-role composition and role entrapment in decision-making groups. *Gender and Society*, 3 (3), 355-372.

Kanter, R.M., 1977. Some effects of proportions on group life: skewed sex ratios and responses to token women. *American Journal of Sociology*, 82(5), 965-90.

Karakowsky, L. and Siegel, J.P., 1999. The effects of proportional representation and gender orientation of the task on emergent leadership behavior in mixed-gender work groups. *Journal of Applied Psychology*, 84(4), 620-631.

Keynes, J.M., 1936. *The general theory of employment, interest, and money*. New York: Harcourt.

Khanna, P., 2010. *How secure is National Rural Employment Guarantee as a safety net* [online]. Global Labour University. Available from: http://www.global-labour-university.org/fileadmin/GLU_conference_2010/papers/52._How_Secure_is_National_Rural_Employement_Guarantee_as_a_Safety_Net.pdf [Accessed on 5th July 2011].

Kolb, D.M. and Coolidge, G.G., 2001. Her place at the table: a consideration of gender issues in negotiation. *In*: I. Asherman and S. Asherman, eds. *Negotiation sourcebook. Second edition.* Human Resource Development, 259-276.

Lehman Schlozman, K., *et al.,* 1995. Gender and citizen participation: is there a different voice?. *American Journal of Political Science*, 39(2), 267-93.

Maznevski, M.L., 1994. Understanding our differences: performance in decision-making groups with diverse members. *Human Relations*, 47(5), 531-52.

MGNREGA website. http://nrega.nic.in/netnrega/home.aspx [Accessed on 10th August 2011].

Mukherjee, S. and Ghosh, S., 2005. What determines the success and failure of '100 days work' at the panchayat level? A study of Birbhum district in West Bengal. Occasional paper 16, Institute of Development Studies Kolkata.

Mumtaz, K., 2005. Women's representation, effectiveness and leadership in south Asia. *In*: *Fifth South Asia regional ministerial conference, celebrating Beijing plus ten*, 3-5 May, Islamabad.

Mosse, D., 2001. 'People's knowledge', participation and patronage: operations and representations in rural development. *In*: B. Cooke and U. Kothari, eds. *Participation: The New Tyranny?* London. New York: Zed Books, 16-35.

Osborne, M.J. and Slivinsky, A., 1996. A model of political competition with citizen-candidates. *Quarterly Journal of Economics*, 111(1), 65–96.

Ostrom, E., 1990. *Governing the Commons: the evolution of institutions for collective action*. Cambridge: Cambridge University Press.

Ostrom, E., 1996. Crossing the great divide: coproduction, synergy and development. *World Development,* 24, 1073–1087.

Patel, S., 2008. She's in charge now: an examination of women's leadership in the panchayati raj institutions in Karnataka, India. *In*: B. G. McSweeney, ed. *Another side of India: gender, culture and development*. Paris: UNESCO, 8-29.

Phillips, A., 1994. Dealing with difference: a politics of ideas or a politics of presence? *Constellations*, 1(1), 88-91.

Pratto, F. and Stallworth, L.M., 1997. The gender gap: differences in political attitudes and social dominance orientation. *British Journal of Social Psychology*, 36, 49-68.

PRIA, 2003. *Women leaders in panchayats*. New Delhi: PRIA.

Raabe, K., Sekher, M. and Birner, R., 2009. The effects of political reservations for women on local governance and rural service provision. Survey evidence from Karnataka. International Food Policy Research Institute Discussion Paper 00878.

Raman, V., 2002. The implementation of quotas for women: the Indian experience. *In*: *regional workshop on the implementation of quotas: Asian experience*. International Institute for Democracy and Electoral Assistance, 24 December, Jakarta.

Rehavi, M. M., 2007. *Sex and politics: do female legislators affect state spending?* Philadelphia: University of Pennsylvania.

Sanan, D. *et al.*, 2011. *Survey of recent sanitation achievement in Himachal Pradesh – A study by Institute of Development Studies* [online]. http://www.indiawaterportal.org/articles/survey-recent-sanitation-achievement-himachal-pradesh-study-institute-development-studies [Accessed 28th July 2013].

Sharma, K., 2004. From representation to presence. The paradox of power and powerlessness. *In*: D. Bandyopadhyay, A. Mukkherjee, Rajiv Gandhi Foundation and Task Force on Panchayati Raj, eds. *New Issues in panchayati raj*. New Delhi: Concept Publishing Company, 48-66.

Singh, N., 2006. Women women's s participation in local water governance: understanding institutional contradictions. *Gender Technology and Development*, 10, 61- 76.

Tambiah, Y., 2003. The impact of gender inequality on governance. *In*: Human Development Resource Centre, ed. *Essays on gender and governance.* Delhi: UNDP, 60-95.

Vyasulu, P. and Vyasulu, V., 1999. Women in panchayati raj: grass roots democracy in Malgudi. *Economic and Political Weekly*, 34(52), 3677–3686.

World Bank (1999) *Watershed Project to Benefit Millions in the Shivalik Hills of India* [online]. http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:20012852~menuPK:64282137~pagePK:41367~piPK:279616~theSitePK:40941,00.html [Accessed on 05/08/13].

PART IV – PAPER III

STEPPING INTO FORMAL POLITICS

Women's Engagement in Formal Political Processes in Irrigation in Rural India*

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ABSTRACT

Women's participation in formal political processes governing water resources in northern India is assessed in this paper. Gender quotas, combined with decentralization of irrigation management to local governance bodies and reliance on the Mahatma Gandhi National Rural Employment Act (MGNREGA) for labour provision, have institutionalized women as formal decision-makers and the labour force in irrigation. This paper quantitatively analyses how these affirmative policies in resource management affect the engagement of women's agency in formal political processes. The topic is explored through a survey of 592 women in rural areas of Palampur, Himachal Pradesh and by assessing women's attendance at public meetings and their contribution to public discussions. Results reiterate existing literature on factors from the private and individual domains being determinant in shaping women's participation in formal political processes. Most importantly, we find that India's gender inclusive policies are creating real opportunities for women to legitimately engage in formal political processes governing resource management.

Keywords: women; political participation; MGNREGA; irrigation; India; south Asia.

1. INTRODUCTION

Women often use informal means to influence political actions and inform themselves about political issues in their community: they talk to wives of political representatives, share their opinion with more outspoken women, or simply remain silent during meetings to communicate disagreements (Cleaver, 2001; Jackson, 2012). These informal political channels have often led to an erroneous perception of women as apolitical. Indeed, in the widely accepted idea of democratization, politics happen through *formal* systems of participation. Attending public meetings and engaging in public speeches are seen as clear indications of political interest and engagement. However, women often lack the tools and political resources to engage in formal participatory processes (Jackson, 2012; Lowndes, 2004; Sapiro, 1981; Togeby, 1994). In northern India, patriarchal norms in governance and natural resource management traditionally exclude women from engaging in formal decision-making and the labour force in their community, considered exclusively the domain of men (Alesina et al., 2011; Pai, 1987). In particular, kuhls, irrigation canals that transport water from the Himalaya to the lower fertile lands, are traditionally governed by males. Men make formal decisions regarding irrigation and kuhl maintenance while women work on their land and households (Baker, 2005). In recent years however, rural policies, such as decentralization, poverty reduction schemes, and gender parity laws, have altered agriculture and irrigation management practices in northern India. Specifically, institutional interventions aimed at democratizing kuhl systems are challenging gender norms, integrating women into the realm of formal canal management as both policy-makers and labourers.

The 2005 Mahatma Gandhi National Rural Employment Act (MGNREGA) in particular has led to changes in irrigation management in northern India. MNREGA, in line with theories emphasizing the link between agricultural growth and poverty reduction (Ashley & Maxwell, 2001), provides poor households an opportunity to work for a hundred days on projects to improve soil and water quality. MGNREGA has a gender quota dictating that 33 per cent of beneficiaries must be female, triggering female engagement in traditionally male labour. Whilst

women were always a critical part of rural labour, their involvement in agriculture is often portrayed as extension of their domestic duties (Rao, 2012). In plough cultures, such as in northern India, gender norms often restrict the engagement of women in non-domestic labour (Alesina et al., 2013; Boserup, 1970). Women usually engage in self-employment in their farms and few are actually paid – those paid receiving a significantly lower wage than men (Abraham, 2009; Srivastava & Srivastava, 2009) Thus, the conceptual distinction between women who provide for the household and those who sell agrarian goods is often blurry (Dixon, 1982; 1983). By contrast, the introduction of the scheme brings women into the world of formalized and equalitarian labour force participation, with equal wages between men and women, official registration and contracts, opening of bank accounts, and benefits such as payment for the non-provision of requested work or free access to crèches. MGNREGA provides a rare opportunity to assess the impact of formal paid employment on formal political participation because it creates a clear distinction between women who are *formally* economically active and those who are not.

Furthermore, MGNREGA is decentralized and empowers the Panchayat Raj Institutes (PRIs, local governance institutions), in conjunction with villagers, to decide which assets to develop during an annual public meeting (*Gram Sabhas*, GS). Because PRIs abide by the 1992 Reservation Law, whereby women must occupy 33 to 50 per cent of seats and 33 per cent of PRIs are reserved for a female chair (locally pradhan), MGNREGA institutionalizes both female politicians and villagers as formal decision-makers in natural resource management.

Finally, MGNREGA is now linked with kuhl management. While some kuhls have remained under traditional farmer-management, others were acquired by the state in the 1980s and their management transferred to the Department of Public Health and Irrigation (IPH). In state-owned kuhls, this signalled the disappearance of a farmer led management labour force. However, in line with recent discourse on decentralization and participatory approaches (Deither & Effenberger, 2012; Irz et al., 2001; Meinzen-Dick et al, 2002), IPH is now increasingly empowering PRIs from state-managed kuhls to maintain and develop the irrigation system and

encouraging them to replace the lost farming labour force with MGNREGA workers (Executive Engineer for IPH, personal communication).

These interweaving factors create new irrigation management systems in northern India where the presence of women in the traditionally masculine domain of formal decision-making and labour participation is institutionalized. This in turn raises the following question: does institutionalizing the role of women as decision-makers (in PRIs) and the labour force (in MGNREGA) in irrigation management alter how rural women actually engage in formal political processes? 'Formal political processes' refers to engagement in politics through formal channels, such as attending GSs or contributing to public discussions during GSs. In this paper, I hypothesize that institutionalizing women as formal irrigation policy-makers and the management labour force in northern India erodes existing gender norms and facilitates the engagement of women's agency in formal political processes. To test this hypothesis, this study, based on a survey of six hundred female users of canal water for irrigation, in the valley of Kangra in Himachal Pradesh (HP), examines women's attendance at GSs and oral participation during meetings. Half the women received water from a traditionally male managed and maintained canal while the other half received it from a state-owned canal, with management responsibility decentralized to gendered-balance PRIs and maintenance increasingly relying on MGNREGA labour force. To account for the diverse factors shaping women's role in irrigation in northern India, this research tests variables from the public, private, and individual domains. The public domain refers to the formal and informal aspects of the political and labour institution in irrigation management. While policies bring change to the public realm, not all women behave alike under similar circumstances and the private domain can support or constrain women's engagement in formal politics (Agrawal & Gibson, 1999; Mohanty, 2012; Prokopy, 2004). The private domain therefore reflects socializing factors – factors determining an individual's knowledge, social interaction, values which define their social role and function – such as livelihood, family background, social status, and education which can influence how women engage in formal politics (Carroll, 1989; Chhibber, 2002). Finally, the individual

domain relates to personal or ideological factors, such as the inclination to cross gender norm boundaries or perception of political objectives and outcomes as relevant, which can shape how women identify their role in formal politics (Andersen, 1975; Klein, 1984 in Banaszak & Leighley, 1991).

The three domains and their relevance to the formal political participation of women are examined in an in-depth review of existing literature in the following section. The rest of the paper is organized as follows: Section 3 sets the study within the context of northern India; Section 4 describes the methodology chosen to test the research hypothesis; Section 5 presents and discusses the results; and finally Section 6 delivers concluding remarks.

2. WOMEN AND FORMAL POLITICAL PARTICIPATION

There is a large pool of literature on women's engagement in formal political processes from socio-anthropological studies in developed countries. While these may not precisely characterize developing countries, due to cultural and geographical differences, gender asymmetry in the non-domestic realm of communities is a universal observation (Rosaldo, 2009), and women excluded from formal political processes in their community is a reality in most parts of the world (Jackson, 2012). The reasons for this asymmetry are increasingly being explained by the socio-political domain rather than the typical biological arguments (women by nature will stay at home to raise and nurture children) (Rosaldo, 2009). In the West in the 20th C., the quickly changing socio-political contexts such as the new voting rights to women and the rapid feminisation of labour (a consequence of losses in male labour during wars) have provided unique analytical platforms for studies on the causes of changing patterns of female engagement in formal political processes. This literature, together with studies from the developing world, specifically India, enhance understanding on how, in rural India, similar changes in the public domain, combined with socializing factors from the private domain and

predispositions to politics from the individual domain, shape women's engagement in formal political processes.

2.1. Changes in the Public Domain

2.1.1. Formalization of political processes and political representation

In both developed and developing countries traditional assumptions once asserted that women are unaffected by political changes, since they belong to the private sphere. However, many have challenged these ideas, contending that political matters affect women in society (Carroll, 1989; Jenning, 1979), yet there is clear evidence that women struggle to integrate with the formal political system (Togeby, 1994; Jackson, 2012). Governance is presumed to be men's responsibility and women are not expected to feel the need to attend public meetings and confront traditional customs (Prokopy, 2004). Women are associated with social capital, rooted in informal connections and notions of trust and mutuality, through which they informally influence politics (Lowndes, 2004). Regarding oral participation at public meetings, women often choose informal ways to interact, such as expressing disagreement through silence or relying on male relatives or older women to speak on their behalf (Cleaver, 2001; Jackson, 2012). It is generally assumed that women reject forced participation in formal politics, and the more formal a political process is, the less likely women will be active in it (Lowndes, 2004).

Some scholars have suggested that enforcing democratic voting systems is a prerequisite for an active and continuous engagement in formal politics (Franklin, 2004; Lijphart, 1997). However, Dube (2013), in a study in North India, found that the vast majority of the women in his survey had engaged in electoral processes, despite very little evidence of subsequent political engagement. Others have suggested that one effective way of making political processes less intimidating to women is to impose female representation in governance systems (Chattopadhyay & Duflo, 2004; Deininger et al., 2011). Female politicians can bridge the gap between women's informal political methods and the formal political world. Additionally, female representatives serve as role models for other women and give them confidence to

engage in the masculine domain of politics (Oswald, 2008). Some women take pride in the political careers of other women, leading to more favorable views of formal politics and increased levels of female participation (High-Pippert & Comer, 1998). In India, however, the introduction of a female quota has resulted in contradictory outcomes on female participation. While Chattopadhyay and Duflo (2004) and Deininger et al. (2011) found that more women attended GSs when the PRI was chaired by a woman, Campa (2011) suggested that having female representatives is insufficient to increase women's political participation. Jackson (2012) also condemns this 'add women and stir' method as being insufficient in fighting hegemonic masculinities and effectively empowering women with political authority and formal oratory capacity.

2.1.2. Employment

The effect of formal paid employment on women's political participation has been poorly researched in developing countries because, in rural areas, there are still strong social taboos on women's mobility, participation in labour force, and gendered labour segregation which restrict women to unpaid work in their own fields or household (Dixon, 1982; Srivastava & Srivastava, 2009). Even in agriculturally distressed regions (facing issues of market crisis, outmigration of male labour, etc.), which in recent years have witnessed increased engagement of critical female labour in agrarian activities, women are usually informal, poorly paid labourers or self-employed (Abraham, 2009). Their role in agriculture is increasingly seen as an extension of their domestic role (Rao, 2012). Most studies on the effect of formal paid labour on political participation assess the impact of wide-scale inclusion of women in the labour force during WWII and following post-war reforms in Europe and the United States (Thomson & Eichler, 1985). In the context of rural India and MGNREGA – where millions of women are entering the formal paid labour force – this literature offers some interesting perspectives.

These studies offer compelling evidence that women who engage in formal paid work outside their home relate differently to political issues and the formal political world (Andersen &

Cook, 1985; Stockemer & Byrne, 2012) and increase their political engagement relative to women who do not engage in formal paid work (Andersen, 1975; Joekes, 1987; Lowndes, 2004; Matland, 1998; Oakes & Almquist, 1993; Sapiro, 1981). The transition of women from their traditional role as mothers and wives to having formal economic status weakens gender norms and leads to important behavioral changes in the female electorate (Andersen, 1975; Welsh, 1977 in Thomson & Eichler, 1985). Employment outside the house brings women into a new, wider environment, with organizational structure allowing formal political activities. This increases women's feelings of independence and political competence and enhances their sense of political motivation and responsibility (Andersen, 1975; Matland, 1998; Mill & Mill 1869 in Iversen & Rosenbluth, 2008). Their political consciousness arises from gaining a higher position in the occupational hierarchy, but can also be rooted in the political struggle within the workplace (Siltanes & Stanworth, 1984). Entering the masculine realm of formal employment often results in women re-evaluating gender norms and embracing non-traditional and equalitarian attitudes towards them (Banaszak, 2006; Banaszak & Leighley, 1991). Women who can compete with men in the labour market become better aware of their social rights and citizenship status (Lister, 2012). Economic independence can also act as an important trigger that increases women's involvement in formal politics (ibid.)

In developing countries, certain attributes, such as caste, class, race, or ethnicity, might weigh differently on the relationship between women's formal labour force participation and formal political engagement (Charusheela, 2003 in Barker, 2005; Mitter, 1986 in Moghadam, 1992; Stockemer & Byrne, 2012). However, many believe that women joining the formal labour force will always increase political integration independent of a nation's level of development (Oakes & Almquist, 1993). The reasons for this, however, may lie more in the increased awareness of social rights rather than economic independence, as women who earn money often hand their wage to male kin. Women engaged in formal paid work, which provide greater regularity in payment, visibility and social security than informal employment, have greater mobility and autonomy, enabling greater involvement in community politics (Kabeer et al., 2011). The ease

with which formally employed women enter politics might result from either their household adopting a more gender-equal stance as a result of their employment outside the house (Drèze & Sen, 1989), or women gaining status in the community (Moghadam, 1992). In India, the effect of MNREGA employment on women's engagement in formal politics is still unclear: while Holmes et al (2010) indicated that women engaged in MGNREGA did not attend public meetings, Panka and Tankha (2010), on the contrary, found that their attendance and oral participation increased.

2.2. Socializing factors of the private domain

2.2.1. Livelihood and class

The relationship between formal political participation and livelihood is often examined by assessing the household as a whole. In general, people are more likely to engage in resource-management participatory processes when they have invested time and money in the resource to be managed because their household's livelihood depends on it (Agrawal & Gupta, 2005; Dichter, 1992; Lise, 2000). Increased formal participation is also frequently associated with wealth because better-off households tend to draw the greatest benefit from the resources managed and, thus, are incentivized to influence decision-making processes (Agrawal & Gupta, 2005; Crook, 2003; Crook & Manor, 1998 in Von Braun & Grote, 2002; Kumar, 2002; Ostrom, 2005). For example, households with greater land size, or whose members engage in supplementary income generating activities, are more likely to participate (Agrawal & Gupta, 2005). However, in northern India, wealth can have the opposite effect on women's participation, with women from wealthy families practicing *purdah* to embrace moral status by remaining concealed from men and confined to the household (Mandelbaum, 1986). Similarly, women from poorer household are more likely to interact with the outside since they often work outside their home and sell products on the market (Singh, 2010).

2.2.2. Household

Household characteristics can determine women's mobility and visibility in the non-domestic world, which in turn can affect their likelihood to attend formal political processes. For example, women who have children may choose to engage in paid employment to ensure the well being of their children (Bhattacharya et al., 2009). More directly, socio-anthropological studies have long shown that women's political views are shaped by household gender norms (Carroll, 1989; Lee, 1976; Vella, 1994). Motherhood, for example, often determines women's political attitudes (Carroll, 1989; Togeby, 1994). Women are more likely to embrace traditional, conservative feminine attitudes and less likely to engage in formal politics when they have many children (Oakes & Almquist, 1993; Sapiro, 1983; Togeby, 1994). In households where strong gender norms are practiced, women often relay their concerns and political preferences to male relatives or entrust them to make political decisions on their behalf (Thomson & Eichler, 1985; Togeby, 1994).

Similar patterns are found in South Asia where stronger gender norms can arise from motherhood (Mandelbaum, 1986). Conservative gender norms can also be explained by male dominance in the household (Malhotra & DeGraff, 1997; Prokopy, 2004). In northern India, women who often depend on men to mediate social interaction and undertake economic transactions outside the house might be less likely to engage in the non-domestic realm if enough men are in their household (Wadley, 1995). Likewise, although the lack of male kin can leave women socio-economically vulnerable, widows are more likely to engage in formal political processes if no man can attend on their behalf (Agarwal, 1997). The logistics of participation also play a significant role as women with important family duties and household burdens often have no time to attend public meetings (Prokopy, 2004; South & Spitze, 1994 in Chhibber, 2002).

2.2.3. Social Status

The 'capture of power by local elites', a widely documented phenomenon (e.g., Adhikari et al., 2004; Agrawal & Gupta, 2005; Blair, 1985; Kumar, 2002; Ribot et al., 2006; Saito-Jenson et al., 2010), is prevalent in resource management participatory processes where community upper classes dominate political procedures. Women are often classified according to their male relatives (Togeby, 1994), whom they depend on to mediate social interactions (Agarwal, 1997; Kabeer, 1999, 2000, in Kantor, 2003). Thus, women who derive social status from their relatives' occupation as well as from their 'political family' – members of their family involved in local governance – are more likely to participate in formal political processes (Chhibber, 2002; McDonagh, 1982). However, social status stemming from caste or class can have a different effect on women's political engagement (Chhibber, 2002). Women from the upper caste might have to abide by stricter behavioral cultural norms, such as respecting *purdah*, which can result in upper caste women eschewing public life, such as employment outside the house or attendance at formal meetings (Bhattacharya et al., 2009; Prokopy, 2005). On the contrary, lower caste women do not practice *purdah* to the same extent and their engagement in public spaces is often deemed socially acceptable (Agarwal, 1997).

Age can also be relevant in defining social status and determining female participation in formal politics. Older women generally face less restriction on mobility (Larsen & Kaur, 2013). They also often speak on behalf of other younger women during public meetings (Cleaver, 2001).

2.2.4. Education

Education is another significant factor in determining women's level of political involvement. In their gender neutral analysis of participatory processes in Nepal, Agrawal and Gupta (2005) found that the more educated the household was, the less likely people were to participate. They believe that higher levels of education increase the opportunities available for non-farm employment and migration, resulting in reduced interest in the politics of resource management.

However, when gender is considered, the effect of education on formal political participation is less clear. For some, it is one of the strongest predictors of engagement in political processes (Bennett & Bennett, 1992 in High-Pippert & Comer, 1998; Hall, 1999 in Lowndes, 2004; Prokopy, 2004; Sapiro, 1983 in Lovenduski, 1998). Shvedova (2005) suggests that educated women are more politically engaged because education helps them articulate their opinion and gain confidence to speak out in front of others. Blair (1985) argues that the most educated women tend to be more politically engaged because they come from economically elite households that dominate formal decision-making processes. Educated women also face fewer mobility restrictions (Larsen & Kaur, 2013). By contrast, True et al. (2012) maintain that women can be politically active regardless of education, and, in fact, educated women often more strongly abide by conservative, patriarchal norms.

2.3. Individual level

2.3.1. Feminist stances

When assessing the relationship between factors of the public or private domain and women's formal political participation, one must be aware that any positive correlation could stem from women embracing feminist attitudes at the individual level. Because rules and norms that define formal politics as a male domain can hinder women's political participation (Shvedova, 2005; Verba et al., 1978), women inclined to adopt feminist stances will be more likely to participate in formal political processes. For example, Klein (1984 in Banaszak & Leighley, 1991) stresses that, when assessing how formally employed women engage in political processes, the underlying reason for them getting paid jobs outside their homes and engaging in formal politics might be their predisposition to embrace feminist stances. Thus, greater political participation might be a result of their defiance of gender norms rather than their employment.

Women might also be more inclined to engage in formal activities from the public domain if they have bargaining power within their households. For instance, women who greatly depend on men to sustain the household might choose to abide by restrictive male authority and

patriarchal norms (such as practicing the *purdah*) in return for social and economic gains (Kanditoyi, 1988).

2.3.2. Political efficacy

Being knowledgeable and interested in political processes in which they can participate makes women feel politically efficacious, which bestows a sense of political obligation (Shvedova, 2005; Verba & Nie, 1972; Verba et al., 1997). Political education and interest also reinforce women's notion that formal participation can be impactful (Shvedova, 2005).

However, women's understanding of the formal political context and their role as participants is often poor and women's low political efficacy accounts for most of the gender gaps in formal political participation (Shvedova, 2005). In general, women restrict their interest and information acquisition to issues relating to their traditional domestic role (Iyengar, 1990 in Shvedova, 2005; Verba et al., 1997). The common exclusion of women from formal politics often means that women are not knowledgeable about new policy-making processes and governance tools and are not always concerned with political outcomes. Dube (2013) found that in northeast India, the great majority of women were aware of the role and functions of the PRIs but very few were actually informed – or sought information – about the daily political outcomes. The resulting low sense of political efficacy diminishes interest in formal decision-making processes.

Overall, it is clear that a myriad of political, economic, socio-cultural, moral and intellectual factors shape the way women will choose or are able to engage in the non-domestic world of formal political processes, each affecting physical and oral participation differently. For instance, factors that increase women's mobility to attend public meetings may not influence their willingness to voice their opinion in public, as informal means of communication might still be preferred. In fact, the question of women's engagement in formal political processes cannot be fully answered if informal political channels are not fully understood themselves. For this, women's socio-cultural role and practices must first be understood (Singh, 2010).

3. STUDY SETTING

3.1. Geography and socio-economic activities in patriarchal kuhl systems

The research took place in rural areas in the vicinity of Palampur, a town in the Kangra Valley, in Himachal Pradesh (HP), northern India. The valley, characterized by gentle forested slopes and riverine terraces, is bordered by high mountain ranges in the North (the Dhaula Dhars) and low-lying hills in the South (the Sivalik). These three distinct geographical features are locally referred to as Dhar, Palam and Changar (see Table 1). The Dhar denotes the high altitude terrains, characterized by steep slopes and poor, erodible soil. The land in the Palam has more gentle slopes and fertile soil. Finally, the Changar refers to the lowest-lying hilly terrain. Because of the mountainous landscape, family plots are restricted in size and agriculture remains mainly a subsistence activity. It is, nevertheless, the main occupation for farmers in all three areas, although pastoralism is also practiced in upper stretches of the valley, typically inhabited by Schedule Tribes (STs). Some farmers benefiting from government-aided programs[28] have recently started converting a portion of their land to grow cash crops in addition to the usual subsistence crops (rice and wheat).

Table 1: Geographic division in study site

Area	Description						
	Elevation Range	Slope gradient	Rainfall range	Percentage of total land under cultivation	Reliance on irrigation	Population density	Main land-based activities
Dhar	1250-1500m	Steep to high	2000-3500mm	Less than 30%	Moderate	Low	Irrigated agriculture, Shepherd
Palam	1200-1250m	Mild to Plain	1500-2500mm	More than 60%	High	High	Irrigated agriculture
Changar	900-1200m	High	1000-1500mm	Less than 40%	Low	Moderate	Rainfed agriculture

[28] Schemes, such as the Command Area Development program, provide farmers with free seasonal seeds as well as the possibility to purchase cash crop seeds at 25 per cent of the market price. Self-help groups are also formed whereby farmers provide loans to each other for purchasing seeds or communal agricultural machineries.

The combination of geography and climate endow the region with numerous streams and rivers, essential for irrigating agricultural land. These perennial water sources have been developed by farmers into one of the most extensive gravity-flow irrigation networks in the Himalaya. The kuhls account for 95 per cent of the net irrigated area (Rawaj-i-Abpashi, 1918 in Baker, 2005). Water is not equally distributed in all three areas. The irrigation network starts with sparsely distributed main canals in the Dhars, which separate into a multitude of smaller kuhls along the slope. Each stream supplies water to as many as 50 different channels, creating an extensive irrigation network in the Palam. Few kuhls reach all the way to the Changar, so farmers in those areas rely mainly on rainfall.

There exists an implicit hierarchy where farmers at the inlet of the kuhl have the important task of preserving the initial flow, but the whole system is traditionally community-managed by all beneficiaries. The *kohli*, a male member of the community, organizes the repairs, maintenance and distribution, while male farmers provide labour. Water is distributed in turn to every field, usually irrigating small, adjacent fields simultaneously. Fields in the Dhar receive water first in the season as their cooler climate means their fields are sowed earlier. During irrigation, fields are carefully watched to prevent other users from diverting the flow into their own fields (Baker, 2005). Twice a year, prior to sowing the crops, the kohli rings the bell for all men to gather and rehabilitate the kuhls, which can last from a few days to a few weeks. Any household refusing to participate has to contribute 150Rs[29] instead. Households also 'pay' the kohli for his service: in the Palampur area farmers either give him six kilograms of their crops or 150Rs. Similar to many irrigation societies, and particularly plough-societies, kuhl management has deeply rooted gender norms (Alesina et al., 2011; Pai, 1987). Men are responsible for the maintenance and restoration of the kuhls outside of their fields and outside the village (Baker, 2005). Women's contribution to irrigation management is typically restricted to maintenance of the drainage lines within their private fields (ibid.).

[29] 150Rs are equivalent to 2.8 USD.

The increase in male outmigration and their engagement in non-agricultural employment make women the main labour force in their fields, although men remain responsible for selling cash crops on the market. Women can also work in other fields, as part of a labour-exchange system with other female farmers during high season. They take care of the cattle, taking them to grass, or increasingly, cutting grass for animals kept inside. Some women also engage in additional income generating activities, such as selling dairy products or making handicrafts[30].

Overall, although women are not part of the formal management and maintenance system of the kuhls, they are beneficiaries but given the patriarchal structure traditionally resort to informal ways of influencing the kuhl management (such as sending their husband to the kohli, or talking to the kohli's wife).

3.2. Socio-ecological changes

Given the importance of agriculture in northern India, especially with the partial conversion to cash crops that require more irrigation[31], the kuhls are an essential aspect of rural development. However, a few decades ago, climatic and socio-economic changes began eroding the traditional kuhl management system in northern India. Climate variability, with more sporadic and heavy rainfall events followed by longer droughts resulted in kuhl structures being damaged by flash floods and the drying out of many perennial streams. Additionally, social factors such as the increasing number of men transferring from farm-based jobs to non-agricultural employment or the outmigration of men to cities, reduced the labour force needed for the maintenance and repair of canals (Baker, 2005).

In accordance with the national goal of boosting rural economic development by providing external assistance in the management of common resources, India focused its rural policies and spending on irrigation (Meinzen-Dick et al., 2001, 2002). In HP, numerous kuhls were taken

[30] Although some women reported that handicraft was not sufficient enough for them to make money as they often were not taught enough to make intrinsic products, or simply felt they had to give their crafts as presents for their family members.

[31] While paddy and wheat require watering once every two months, cash crops need to be irrigated twice a month.

over by the state and their management transferred to IPH, spawning numerous management issues. IPH functions as a demand-based system and farmers faced great difficulty reporting problems relating to the kuhls or making specific requests regarding water distribution. Expanding and maintaining the irrigation network also created a significant financial burden for IPH (Meinzen-Dick et al., 2002). With the government keeping water fees low (ibid.), and prioritizing drinking water over irrigation (Executive Engineer of IPH in Palampur, Personal communication), IPH soon became financially incapable of supporting the irrigation commons leading to kuhls deterioration (ibid.).

In recent years, to remediate the lack of funds, IPH has worked alongside local PRIs to meet kuhl maintenance requirements, mainly through the use of MGNREGA labour. Kuhl Committees (KC), formed of elected members from many kuhls (including from traditionally managed farmers' kuhls), were formed to facilitate communication and demands for funding between IPH and the PRIs. KCs' role is also to incentivize local PRIs, specifically from state-owned kuhls where lack of funds and labour are major issues, to invest MGNREGA labour in the irrigation system. In the research site around Palampur, while a number of kuhls remain under farmer ownership and kohli control, the rest are now increasingly dependent on PRIs targeting MGNREGA investments for irrigation. For women this has significant repercussions: as a result of the gender quotas and participatory processes in PRIs and MGNREGA, women are now formally responsible for decision-making and providing labour for irrigation systems.

4. METHODOLOGY

4.1. Sampling strategy

The survey for the study was developed based on information collected during field study in the Kangra Valley in autumn 2010 (see Figure 1). To assess women's formal political participation, two kuhls of similar flow distribution were targeted: the community-managed Kandul Kuhl (referred to as farmers' kuhl) and the state-managed Kushmal kuhl (state-kuhl). The kuhls'

characteristics are presented in Table 2. Kushmal kuhl became state controlled in 1980, but its maintenance has now been partly transferred back to the PRIs, with the aim of utilizing MGNREGA labour. Both kuhls begin in the Dhar and terminate in the Palam. Kushmal kuhl distributes water to the villages of *Bandhiara, Kusmal and Bhogotla,* situated upstream and encompassed in the panchayat (local jurisdiction) of *Bhogotla,* and to the downstream villages *Bagora, Jamwal Kar, Latwala* and *Near*, part of the panchayat *Bagora*. Both panchayats are headed by female pradhans. Kandul kuhl distributes water to four panchayats: *Spaidu* (encompassing the village *Gorat* and the upper parts of *Spaidu*) and *Nanahar* (covering the lower parts of *Spaidu*, the village *Nanahar* and the upper parts of *Kandwari*) are both upstream of the kuhl and female-led. Downstream, the kuhl distributes water to the male-led panchayats *Naitha* (which includes the lower part of *Kandwari*, the villages *Rajehr*, *Ramchherhr*, *Sornu*, *Naitha* and *Gadiyara*) and *Padhiyarkhad* (encompassing *Sarsawa*, *Padhiyardhad* and *Oder*). For the study 300 households benefiting from the state kuhl and 300 from the farmers' kuhl (totaling 600 respondents) were surveyed using a random sampling strategy. In each household, one adult woman over 18 years old was randomly interviewed.

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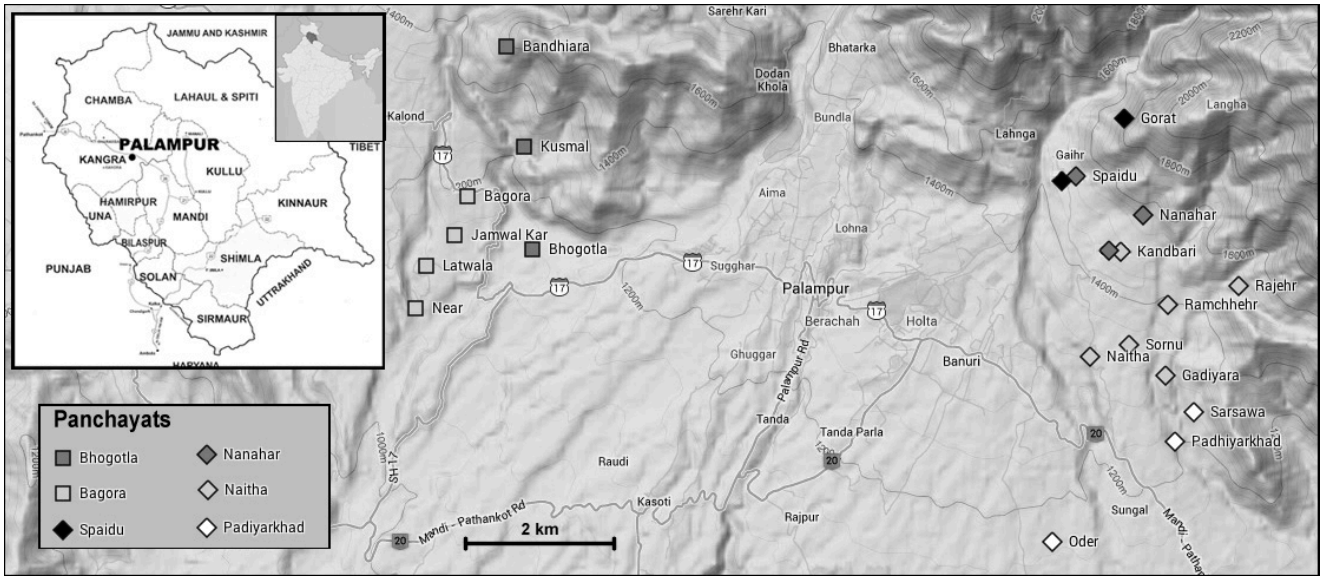

Figure 1: Field study map (with villages and corresponding panchayats) in Palampur area.

Table 2: Characteristics of state and farmers kuhls targeted in the study.

Kuhl	Ownership	management	Main labour	Length	Source	Panchayats benefiting from the water	Number of household using the kuhl	Number of household surveyed
Kandul	Farmers	local communities, kohli, kuhl committee	male farmers, MGNREGA	17km	Awa river	Spaidu, Nanahar, Naitha and Padhiyarkhad	450	300
Kushmal	State	IPH, kuhl committee	IPH engineers, MGNREGA	10km	Neugal river	Bagora and Bhogotla	300	300

4.2. Questionnaire

The questionnaire, written in Hindi, was first tested during a focus group with local women in Spring 2011. A team of six female enumerators originating from the targeted areas (three from each kuhl) was trained in Palampur for two days, followed by one day of pilot work. Enumerators spoke and read Hindi as well as the local dialect, Kangri. Interviews were performed in the local dialect between one female enumerator and one female respondent away from male relatives.

The survey was divided in five sections. The first section investigated the respondent's socio-economic background, including household characteristics, caste, class, education, as well as income generating activities. The second section focused on agricultural practices (land, crops, labour type, etc.) while the third section targeted irrigation practices, such as involvement with kuhl management and water availability and distribution. The fourth section touched on the respondent's engagement with MGNREGA as well as their personal preferences for the prioritization of MGNREGA investments. Finally, the fifth section targeted the female respondent's political involvement in terms of voting, motivations for participation, and level of participation in local governance meetings. The data obtained from the questionnaires was used to test whether affirmative policies to formally integrate women in the decision-making and labour force in irrigation leads to changes in the involvement of women in formal political processes in terms of attendance to GS, public meetings (physical participation), and public contribution to discussions (oral participation). The analysis of the results was then organized

around the clusters described in the literature review. The variables used in the logistic regressions are listed in Table 3 and discussed below.

4.2.1. Public Domain

To investigate whether the institutionalization of women's role in the politics of irrigation management affect women's physical and oral participation in GS, the following factors were considered: the formalization of the kuhl management (state kuhls), the gender of the pradhan, and women's formal relationship with political representatives (whether they had voted for the representative in the PRIs – and what factors were important for them when voting).

To assess the effect of the institutionalization of the economic role of women on their participation in formal politics, two correlations were examined: whether women personally engaged in MGNREGA had greater formal political engagement; and whether women whose household was registered with MGNREGA (but did not personally engage in the scheme) participated in formal politics. Additionally, the analysis assessed whether women who were involved in informal, unpaid labour (labour exchange with other households) were more likely to participate in the formal politics of resource management than those not exchanging labour.

4.2.2. Private Domain

The effects of livelihood and irrigation on women's formal participation was assessed by looking at factors such as their household's total expenditure (in Rs/cap/month), income generating activities as well as their agriculture and farming practices (position on the kuhl, whether they pay for water, total land, cash crops, water availability, time when irrigation is received, and number of cattle).

The effect of household composition on formal participation was tested using factors such as household size (in adult equivalence, calculated based on the OECD equivalence scale), the ratio of males to total number of adults in the household, and the ratio of children and young children (below schooling age) to total number of adults in the household.

The household's caste, respondent's marital status, and 'political family' (whether they were personally or informally affiliated to a political figure) were tested to evaluate whether women's social status derived from their household or husband determined their participation in formal politics. Variables specific to the respondents, such as age and time living in the village were also assessed against their formal political engagement.

Finally, the respondents' literacy and highest educational level attained (in years) were assessed in order to evaluate the impact of education on women's formal political participation.

4.2.3. Individual Level

To assess women's feminist stance and whether it shapes their engagement in formal politics, the following factors were tested: women's involvement in traditionally-male activities (supervision of irrigation, contribution to the maintenance of the canals), whether they consider themselves capable of managing the irrigation systems, their political and economic dependence on their male relatives (whether their male relatives influence their political preferences and whether their male relatives use the greatest share of MGNREGA's 100 days of paid work), and their opinion of traditional norms of labour (opinion about gendering MGNREGA labour).

Finally, to test how women's formal participation is affected by their sense of political efficacy, the following variables were evaluated: women's concern about irrigation, such as their opinion about the amount of water they receive and the kuhl performance, their understanding of who is responsible for irrigation's political processes, who they would communicate complaints to, and whether they are satisfied with kuhl management. Their understanding of MGNREGA's role as a development and management tool in agriculture, in terms of what assets they consider a priority, was also assessed against formal political participation.

All the variables from the public, private, and individual clusters were used in different logistic regression analyses, a modeling approach to determine group memberships, using the data-analysis software SPAD 7.0. Two models were developed to describe both women's attendance to GSs (whether they had attended at least once), and their oral contribution during GSs

(whether they spoke out during meetings). From the initial sample size of 600 surveys, questionnaires that were not fully completed and lacked key information were rejected reducing the sample size to 592 questionnaires.

4.3. Qualitative data

In addition to the survey, qualitative information was also collected. During the period of November-December 2010 and March-April 2011, various interviews were conducted. Male and female farmers were chosen, using a random stratified sampling method, to represent different locations, kuhl management types, and farming activities. Semi-structured interviews were conducted with farmers benefiting from the water from state kuhls or farmers' kuhls comprising of farmers whose fields were positioned upstream or at the tail of the kuhl and who benefited or did not from state-sponsored agriculture (cash crops) conversion programs, such as CAD. Additionally, interviews were carried out with the kohli and Kuhl Committee president of farmers' kuhls (Kundal kuhl), the female pradhan in *Nanahar* (on Kundal kuhl); the IPH Executive Engineer in Palampur; and the Block District Officer responsible for MGNREGA in the Palampur area. A focus group was also organized with all female PRI members from another state-managed kuhl in the area. Finally, an annual GS meeting was attended in *Nanahar* and *Naitha* (on the farmers' kuhl).

Table 3: List of variables tested in logistic regressions

		Variables	Description
PUBLIC	Political Setting	State kuhl system	Respondent using kuhl managed by the state (dummy 1 if state-own kuhl)
		Female pradhan	Gender of the pradhan in the respondent's panchayat (dummy 1 if female pradhan)
		Voted for PRI elections	Did the respondent vote for PRI elections? (dummy 1 if respondent voted)
		Voted for pradhan	Did the respondent vote for the current pradhan during panchayat elections? (dummy 1 if voted for current pradhan)
		Voted for vice-pradhan	Did the respondent's vote for the current vice-pradhan during panchayat election? (dummy 1 if voted for current vice-pradhan)
		Voted for PRI members	Did the respondent vote for any of the current PRI members during panchayat elections? (dummy 1 if voted for current PRI member)
		Candidate's gender	Was the gender of the candidate determinant for the respondent when casting her vote? (dummy 1 if gender determinant)
		Candidate's religion	Was the religion of the candidate determinant for the respondent when casting her vote? (dummy 1 if religion determinant)
		Candidate's caste	Was the caste of the candidate determinant for the respondent when casting her vote? (dummy 1 if caste determinant)
		Candidate's social class	Was the social class of the candidate determinant for the respondent when casting her vote? (dummy 1 if social class determinant)
		Candidate's wealth	Was the wealth of the candidate determinant for the respondent when casting her vote? (dummy 1 if wealth determinant)
		Social connection	Was having social connections with the candidate determinant for the respondent when casting her vote? (dummy 1 if social connection determinant)
	Labour Force	MGNREGA	Respondent is working for MGNREGA (dummy 1)
		MGREGA Household	Respondent's household is registered with MGNREGA (dummy 1)
		MGNREGA Other HH member	Someone else in the household works for MGNREGA - the respondent is not personally involved with MGNREGA (dummy 1)
		Labour exchange	Works as agriculture labour for other household (dummy 1 if work as labour)
PRIVATE	Livelihood and Irrigation	Total expenditure (in	Total household expenditure (in Rs/capita/month)
		Land based IGA	Main income generating activity of the head of the household (dummy 1 if land-based)
		Other IGA	Respondent engaged in other Income Generating Activity (dummy 1 if other IGA)
		Total land (ha)	Total areas under cultivation (owned and rented land) in hectares
		Cash crops	Household cultivating cash crops (dummy 1 if cash crop)
		Marketed agriculture	Household sells crops on the market (dummy 1 if sell crops)
		Cattle ratio	Ratio of number of cattle animals to number of members in the household (adult equivalent)
		Upstream on kuhl	Position on the kuhl (dummy 1 if upstream of kuhl)
		Multiple irrigation inlets into	Households with more than 1 drainage line in their fields (dummy 1 if more than 1 drainage line)
		Other source of irrigation	Irrigation other than kuhl system (dummy 1 if other source of irrigation)
		Payment for water	Household pays in goods or money for the kuhl water (dummy 1 if pays for water)
		Irrigation at night	Time of the day when household's fields are irrigation (dummy 1 if night irrigation)
	Household background	Household size	Number of members in the household in adult equivalent (OECD eq. scale)
		Male ratio	Ratio of male to total number of adults in the household
		Children ratio	Ratio of total number of children to total number of adults in the household
		Young children ratio	Ratio of unschooled children to total adults in the household
	Social Status	Political family	Respondent's affiliation with political figures (PRI members, kohli, IPH…) (dummy 1 if respondent linked to political figure)
		Not married	Marital status (dummy 1 if not married)
		Age (years)	Age of respondent in years
		More than 10 yrs in village	Time living in the village (dummy 1 if more than 10 years)
		GC	Respondent's caste (Dummy 1 if General Caste)
		SC	Respondent's caste (Dummy 1 if Other Scheduled Caste)
		ST	Respondent's caste (Dummy 1 if Scheduled Tribe)
		OBC	Respondent's caste (Dummy 1 if Other Backward Class)
	Education	Illiterate	Respondent's literacy status (dummy 1 if illiterate)
		Education (years)	Education level of respondent (years)
INDIVIDUAL	Feminist stances	Women supervising irrigation	Person supervising irrigation (dummy 1 if respondent or female relative supervise)
		Women's capacity in irrigation	Does respondent consider that women are capable of dealing with irrigation systems? (dummy 1 if women capable)
		Women work on kuhls	Respondent's engagement in work on the kuhls outside her fields (dummy 1 if respondent is engaged in kuhl work)
		Vote influenced by ML	Were the opinion of male relatives important for the respondent in casting her vote? (dummy 1 if opinion of male significant)
		Greatest MGNREGA share to	Male relative is involved in MGNREGA with respondent and uses a greater proportion of the household MGNREGA hours (dummy 1)
		Shared account MGNREGA	Respondent has a shared bank account with her husband (dummy 1)
		Gendered MGNREGA	Opinion of respondent on allocating MGNREGA jobs according to gender labour norms (dummy 1 if in favour of gendered MGNREGA)
	Political Efficacy	Pradhan responsible for kuhls	Respondent's undertanding of responsibility for kuhl management (dummy 1 if pradhan responsible)
		Kuhl complaints to pradhan	Person the respondent would complain to regarding kuhl maintenance (dummy 1 if complaints to pradhan)
		Lack of irrigation water	Respondent's concerns over water availability (dummy 1 if respondent considers there is not enough water for crops)
		Inadequate kuhl management	Respondent's opinion on kuhl management (dummy 1 if respondents consider better kuhl management is needed)
		Not concerned by kuhls	Respondent's level of involvement in demanding better management of kuhls (dummy 1 if respondent not concerned)
		Villagers responsible for kuhls	Respondent's opinion over responsibilities for kuhls (dummy 1 if respondents considers that all villagers are responsible)
		Kuhl maintenance main problem	Respondent's opinion on top two main issues in panchayat (dummy 1 if one of two main issues is kuhl maintenance)
		Lack of kuhl main problem	Respondent's opinion on top two main issues in panchayat (dummy 1 if one of two main issues is lack of kuhl)
		Kuhl main problem	Respondent's opinion on top two main issues in panchayat (dummy 1 if two main issues are lack of kuhl and inadequate maintenance of kuhls)
		Kuhls main MGNREGA job	Respondent's opinion on top two MGNREGA's priority jobs (dummy 1 if main priorities are kuhl construction and kuhl renovation)

5. RESULTS

5.1. Respondents' characteristics

The respondents' characteristics and geographical position on either kuhl (upstream or downstream) are presented in Table 4. The data indicates a clear socio-economic and political heterogeneity associated with the respondents' position on either kuhl. First of all, caste is clearly geographically distributed. Upstream of the kulhs, in the Dhar, Scheduled Tribes (STs) dominate the landscape (75 and nearly 84 per cent of respondents in Kandul and Kushmal, respectively). Downstream, in the Palam, caste distribution is also heterogeneous, but to a lesser degree: more than half of the respondents are from General Castes (GC) in Kandul, while Other Backward Castes (OBC) form the majority of respondents (61 per cent) in Kushmal. Almost no OBC uses water from Kandul kuhl. There are also geographic disparities in literacy and education: in upstream Kandul, more than half of respondents are illiterate, with an average education level of three years, while in downstream Kushmal only 19 per cent are illiterate and average education reaches six years. While the proportion of respondents whose income is land-based is similar in all areas (above 50 per cent), land holding is more prevalent in Kandul than in Kushmal, with downstream respondents owning more land than upstream ones in both kuhls. Household expenditures follow a similar pattern: respondents in Kandul kuhl are wealthier than in Kushmal and the expenditure in downstream areas exceeds that of the Dhar. This is also reflected in the fact that fewer women are involved with MGNREGA in Kandul than in Kushmal, with less MGNREGA workers downstream than upstream. Finally, in terms of political engagement, upper areas have a higher rate of female attendance to GSs than downstream. Oral participation is the highest in upstream Kandul.

Table 4: Respondent's characteristics according to geographical location.

	Variables	Kandul *(farmers' kuhl)*		Kushmal *(state kuhl)*	
		Upstream	**Downstream**	**Upstream**	**Downstream**
Respondents	Sample Size	145	153	99	195
	Household size (adult eq.)	5.4 [0.15]	5.2 [0.18]	4.8 [0.18]	4.7 [0.14]
	Age (years)	40.8 [1.0]	40.6 [1.03]	38.3 [1.11]	42.1 [0.81]
	Caste distribution	SC - 6.9% ST - 75.2% GC - 16.6% OBC - 1.4%	SC- 21.6% ST - 24.2% GC - 53.6% OBC - 0.7%	SC - 0.0% ST - 83.8% GC - 14.1% OBC - 2.0%	SC- 8.3% ST - 8.8% GC - 22.2% OBC - 60.6%
	% Illiterate	51.0%	36.6%	39.4%	19.0%
	Education level (years)	3.6 [0.35]	5.4 [0.39]	5.0 [0.47]	6.6 [0.30]
Livelihood	Land holding (ha)	0.29 [0.02]	0.42 [0.04]	0.25 [0.02]	0.28 [0.02]
	% of household with land-based main income generating activity	59.3%	53.6%	50.5%	51.8%
	Total Expenditure (Rs/cap/month)	1,209.3 [41.97]	1,292.7 [67.58]	910.9 [35.74]	1,125.7 [45.78]
Socio-Political	% MGNREGA	46.9%	42.5%	63.6%	50.3%
	% of women attending GSs (Physical participation)	64.8%	42.5%	63.6%	59.0%
	% of women contributing to discussion during GSs (Oral participation)	60.0%	28.8%	38.4%	35.4%

(Numbers in brackets are the standard errors of the calculated means.)

5.2. Logistic regressions

The results from the logistic regression models on political attendance and oral participation are presented in Table 5. Both models are statistically significant ($p<0.01$) with a McFadden's pseudo R^2 value of 0.235 and 0.207 for the attendance and the oral participation models respectively. Only significant and stable predictors are included in the table, although all variables from Table 3 were tested. This is because, whilst non-significant variables increase the model fit (R^2), their inclusion can create noise that reduces the precision (increases standard error) of the estimates of valid variables, decreasing the predictive power model (Harrell, 2001; Hosmer et al., 2013). However all tested variables, including non-significant ones, will be

discussed. Seven variables are significant and consistent in both models (in bold in the table). The analysis and discussion are organized around the five clusters previously presented.

Table 5. Logistic regression models for physical and oral participation.

			Physical participation		Oral participation	
		Variable	**Odds ratio (St.Err.)**	**P-value**	**Odds ratio (St.Err.)**	**P-value**
PUBLIC	**Political setting**	**State Kuhl system**	**1.76 (0.33)***	**0.09**	**0.48 (0.32)****	**0.02**
		Voted PRI elections	**6.13 (1.12)***	**0.10**	**8.07 (1.12)***	**0.06**
		Support for pradhan	1.68 (0.23)**	0.03	1.12 (0.22)	0.62
		Support for vice pradhan	0.44 (0.28)***	<0.01	0.87 (0.27)	0.62
	Labour force	**MGNREGA**	**5.26 (0.24)*****	**<0.01**	**3.77 (0.22)*****	**<0.01**
PRIVATE	**Livelihood and Irrigation**	IGA	1.66 (0.21)***	0.01	1.38 (0.20)	0.12
		Cash crops	1.72 (0.29)*	0.06	1.55 (0.27)	0.11
		Marketed agriculture	0.68 (0.45)	0.40	0.37 (0.50)**	0.05
		Upstream on kuhl	**3.09 (0.27)*****	**<0.01**	**3.06 (0.27)*****	**<0.01**
		Payment for water	**2.11 (0.30)*****	**0.01**	**1.82 (0.30)****	**0.05**
		Irrigation at night	0.78 (0.30)	0.40	0.38 (0.32)***	<0.01
	Household background	Children ratio	1.56 (0.22)**	0.04	1.33 (0.21)	0.17
	Social Status	Political family	2.05 (0.41)*	0.08	1.31 (0.38)	0.47
		Age (years)	**1.04 (0.01)*****	**<0.01**	**1.02 (0.01)****	**0.05**
		More than 10yrs in village	**2.30 (0.32)*****	**0.01**	**3.16 (0.34)*****	**<0.01**
		OBC	1.64 (0.28)*	0.07	1.15 (0.27)	0.61
	Education	Education (years)	1.00 (0.03)	0.91	1.08 (0.03)**	0.02
INDIVIDUAL	**Feminist stance**	Vote influenced by male relative	0.70 (0.23)	0.12	1.12 (0.23)	0.61
		Greatest MGNREGA share to Male relative	**0.25 (0.39)*****	**<0.01**	**0.45 (0.39)****	**0.04**
	Political efficacy	Villagers responsible for kuhls	0.76 (0.44)	0.53	0.49 (0.46)	0.12
		Kuhls main MGNREGA job	1.41 (0.23)	0.14	1.98 (0.23)***	<0.01
		Intercept		*<0.01*		*<0.01*

N: 592

Physical Participation:
McFadden's pseudo R2: 0.234
Likelihood ratio: 188.170 (df.21.00)

Oral Participation:
McFadden's pseudo R2: 0.192
Likelihood ratio: 151.565 (df.21.00)

For the coefficients above, *, ** and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

5.2.1. Political setting

Both models show that the institutionalization of women as the decision-makers (through decentralization to PRIs) and the labour force (through MGNREGA) of irrigation systems impact women's engagement in formal political processes. Results indicate that women were 1.8 times more likely to physically participate if they were from the state-kuhl, where irrigation management processes are decentralized to formal government bodies (PRIs). However, the oral participation model indicates that, despite being more likely to attend GSs, women from the state kuhl were half as likely to orally participate. Lowndes (2004) argues that the increased formalization of political processes can hinder women's political confidence. While the increased likelihood of physical participation in state kuhls appears to refute her argument, the decreased likelihood of public speech in the same kuhl may indicate that Lowndes' finding is relevant to oral participation.

Results also indicate that voting in the PRI elections is positively correlated with women's physical participation. Women who had previously taken part in formal political processes by voting in the PRI elections were more than 6 times as likely to attend GSs. This, in some ways, contradicts Dube (2013)'s findings that although women participated in elections in great levels, they did not always present interest in formal political matters (although participation in GSs was not analyzed in their study). One might contend that attending GSs is not necessarily a sign of concern over formal political matters, yet results from the oral participation model appear to strengthen the correlation between voting and increased engagement in formal politics. Indeed, women who reported having voted in the PRI election were more than 8 times as likely to orally participate. This closely echoes Franklin (2004) and Lijphart (1997)'s findings that voting is an initial political action, which, once acquired as habit, leads to continuous investment in formal political interests and processes. Voting is a relatively easy form of participation in formal politics and may, therefore, act as a bridge for women to first engage in the formal political life of their community.

Voting also creates a membership which stimulates collective interest in politics (Putman, 2000, in McClurg, 2003). Women who vote in PRI elections learn about political figures and develop a sense of loyalty to the regime personified by their chosen candidate (Finkel, 1987; McClurg, 2003). This is reflected in our results as women who had voted for the elected pradhan during the elections were more than 1.7 times as likely to physically participate, while those who cast their vote for the vice-pradhan were 2.3 times less likely. The vote preference regarding other PRI members was not significant in predicting physical or oral participation. This may reflect how the identity of the pradhan, as the ultimate decision-maker (Besley et al., 2004; Chattopadhay & Duflo, 2004), matters more than that of other PRI members. The panchayat voting system in India requires people to vote for one candidate, with those winning the most votes becoming PRI members. Subsequently, in closed assembly, the PRI members elect a pradhan who, in turn, nominates a vice-pradhan. With this indirect voting system, one might vote for a candidate hoping that he/she will become pradhan, only to see them become vice-pradhan. Women who supported a candidate who became vice-pradhan might not feel the same incentive to formally participate as women who voted for the person who actually became pradhan, possibly echoing Lowndes (2004)'s findings that women are more likely to participate if they can integrate the political figures with their social capital.

Finally, the gender of the pradhan was not a significant predictor of women's engagement in formal political processes. These findings are consistent with Campa (2011) as well as with Panka and Tankha (2010), who looked specifically at the political engagement of women working through MGNREGA, yet did not find higher participation in female-led PRIs. Discussions with women during the fieldwork may provide some ground for interpretation. Women revealed that they preferred talking with women rather than men. For example, if their male relatives could not relay their demands, women from the farmers' kuhl often chose to talk to the kohli's wife. Similarly, one female pradhan from the state-kuhl reported the regular visit of women, often in groups, coming to talk to her in her own house. Therefore, having female

PRI representatives might not lead to any changes in the formal political participation of women as this informal system may still prevail.

5.2.2. Labour force

Engagement with the MGNREGA scheme was found to be positively correlated and consistent in both physical and oral participation models and accounted for most of women's formal political behavior. Women who reported working in MGNREGA were 5.3 times more likely to physically participate and 3.8 times more likely to orally participate. These findings conflict with Holmes et al. (2010)'s statements that women engaged in MGNREGA did not attend GSs and, therefore, played a limited role in work selection but confirm Panka and Tankha (2010)'s opposite findings. They also agree with the traditional western literature which states that as women's formal economic status in their society increases, so does their formal political engagement (e.g., Andersen, 1975; Kabeer et al., 2011; Oakes & Almquist, 1993; Sapiro, 1981).

Interestingly, replacing the variable 'MGNREGA' with 'MGNREGA household' (the household is registered under MGNREGA but the respondent does not work) in both models gives opposite results (see Table 6 in Appendix). The models, with Pseudo R^2 of 0.170 and 0.149 for physical and oral participation respectively, indicate that even if their household is registered, respondents who are not personally involved with the scheme were 3.3 times less likely to physically and orally participate (10 per cent significance level).

These results resonate with Panka and Tankha (2010)'s argument that women who work in MGNREGA are more politically engaged as a direct consequence of employment. The fact that women are also more likely to speak out might be a reflection of their demand for jobs. Panka and Tankha found that, despite being more active in GSs, women only participated to ask about job availability and related issues, and rarely contributed to the work selection decisions. During fieldwork, many women mentioned MGNREGA for its financial purposes only. The new cash-economy increases the value women ascribe to paid employment. Their engagement in MGNREGA comes from economic motivation rather than rural policy development concerns,

yet it introduces women to a new world of formalities, with rights and entitlements. They gain political awareness through engagement with politicized economic activity (Andersen, 1975). The fact that women's engagement in informal labour exchange with other female farmers was not significant in predicting their engagement in formal politics further highlights the uniqueness of MGNREGA for being a formally paid scheme and exposing women to the political world of formal paid labour, associated with regularity, visibility and social benefits (Kabeer et al., 2011). It should also be noted that decisions regarding MGNREGA are made during GSs, and women desiring to voice their input must act publically during those formal meetings, unlike other demands, which they may address informally.

5.2.3. Livelihood and agricultural practices

In both models, variables linked to the wealth of the respondent's household were not significant in explaining women's formal participation in political processes. Per capita income was not found to be a significant predictor, implying that, unlike Mandlebaum (1986)'s findings, wealthier women were not deterred from engaging in formal politics because of the practice of *purdah*. Unlike Agrawal and Gupta (2005)'s findings, neither the total expenditure, total land, nor additional income generating activities, were correlated with greater formal political engagement for women.

However, reliance on irrigation water for livelihood appears to be a significant factor in predicting women's engagement in formal political processes, supporting previous literature on reliance on common resource management and increased political participation (e.g., Agarwal & Gupta, 2005). Women from panchayats upstream of the kuhls were three times more likely to physically and orally participate. In the Dhar, the need for irrigation management and repair are higher than downstream in the Palam since the irrigation system has not yet branched out into a web of drainage lines and the small, sparsely distributed canals are more prone to flash floods. Thus, the livelihood of farmers depends on the adequate management and repair of the kuhls. There is also the social belief that inhabitants of the Dhar have great responsibility in

maintaining the inlet of the kuhl, although women are not officially responsible. The importance of irrigation-dependent livelihood on women's participation is also reflected in the fact that women whose main activity is agriculture and those who reported growing cash crops were 1.7 as more likely to physically participate although they were not more likely to participate orally. Unlike MGNREGA, demands made to PRIs regarding agricultural matters do not require formal public process. Therefore women may attend to be informed but prefer to address PRI members informally. The oral participation model also indicates that those whose crops were sold on the market (marketed agriculture) were just as likely to physically participate but 2.7 times less likely to orally participate. Discussions with women indicate that they are never the ones going to the market to sell crops, a role taken by their male relative, or, for widows, by contractors. Women clearly depend on men for their economic security and this low bargaining power might result in women having to abide by traditional patriarchal norms, such as not speaking in public. It is also possible that lack of interaction with the public world reduces women's confidence to speak out.

Women whose households paid for irrigation water were 2.1 and 1.8 times as likely to physically and orally participate, respectively. These findings highlight the co-existence of formal and informal management practices. Despite being from the state-managed kuhl, many women reported paying for water. Farmers reported that the old kohli in the state-kuhl was now employed by IPH, but that traditional payments for water security were still practiced[32]. Nonetheless, these results resonate with existing literature on participatory common pool resource management, whereby individuals are more likely to participate if they have contributed to the management of the natural resource (Dichter, 1992; Kolavalli & Kerr, 2002a, 2002b; Prokopy, 2005)

In the oral participation model, women whose fields receive water at night were 2.6 times less likely to speak out during the GS. During irrigation, women rely on male relatives to supervise

[32] The situation is also blurry in farmers' kuhls, as kohlis can now ask IPH for funds through the KC. In some farmers' kuhls, the lack of labour force for the annual kuhl maintenance work is such that the KC sometimes liberates funds to hire two or three people to help the kohli organize maintenance (KC president, personal communication, 2011).

the fields and receiving water at night implies that watch must be kept at night. While our discussion with farmers and kohlis did not explicitly say this, it is possible that a hierarchy system exists where farmers receiving water at night belong to a specific socio-economic background with socializing factors shaping women's behavior and role in the public domain of formal politics. In an attempt to explain the link between those two variables and understand who is more likely to receive irrigation at night and how this might impact their formal political engagement, the variable 'night irrigation' was tested in a logistic regression model (see Table 7 in Appendix). The resulting model, which is significant (R^2 0.357; likelihood ratio 197.721 (df.18)), appears to indicate that ST women are more likely to receive irrigation at night, which based on literature stating that low castes abide to more lenient gender restrictions (Agarwal, 1997), could indirectly (and only partially) explain the found correlation between 'night irrigation' and oral participation. However, since not all variables could not be confidently interpreted, I suggest that further research is needed to explicate the possible link between night irrigation and oral participation.

5.2.4. Household

In the models, only one household composition variable was found significant in predicting the participation of women in formal politics. For every unit increase in the total children to adult ratio, the likelihood of women physically and orally participating rose by a factor of 1.6 and 3.8 respectively. These findings disagree with general literature declaring that motherhood decreases women's likelihood to be politically active (Mandelbaum, 1986; Prokopy, 2004; Togeby, 1994). While further research is needed to understand this positive correlation, field observations and discussions with women during the pilot study suggest a possible interpretation: GSs are often used to discuss, apply for, and distribute welfare schemes (school, health system, etc.) in addition to making decisions on irrigation issues. I suggest that women with many children feel the need to be informed about such schemes and therefore attend GSs.

The ratio of males to total adults in the household was not significant in the logistic regressions, suggesting that, contrary to Malhotra and DeGraff (1997) and Prokopy (2004)'s argument, more men in the household does not hinder women's likelihood to engage in formal political processes. This also indicates that, contrary to studies reviewed in Agarwal (1997), the status of widowhood is not correlated with increased engagement in formal politics.

5.2.5. Social status

Social status appears to be an important factor in determining women's formal participation in GSs. Although being unmarried was not found to be a significant predictor (implying that the lack of social status derived from the husband did not affect women's engagement in formal politics), results indicate that women who were personally affiliated with a political figure, such as a PRI member, IPH official, KC member, or kohli (political network) were more than twice as likely to attend GSs. However, the variable was not significant in predicting oral participation. These findings corroborate studies that highlight how informal social networks, or 'political family' can shape political membership and social status, incentivizing women to participate in formal political processes (Chhibber, 2002; McDonagh, 1982).

Further, older women were more likely to physically and orally participate. The time that women spent in the village appears to matter even more: women who had lived in the village for more than ten years were more than twice as likely to physically participate and more than three times as likely to orally participate. These findings confirm that women of such social status might also act as spokeswomen for women younger or new to the village (Cleaver, 2001). Women who have spent many years in the village might feel respected enough to publically share their views.

The results of this study, unlike those of many other studies (e.g., Blair, 1985; Crook, 2003), found that coming from a high caste household did not influence the likelihood of women's participation to formal politics. On the contrary, women from Other Backward Castes were more likely to attend GSs by a factor of 1.64, although there was no impact on their likelihood

to speak out. These findings echo Prokopy (2005)'s observations that lower caste women face lower gender norm constraints and, thus, engage in the formal political sphere more easily. In fact, observations during GSs indicate that, although women sat together as a group, next to the male group, no woman covered their faces in the presence of other men (unlike some of the female PRI members) indicating that they all, regardless of caste, abide to more lenient norms of gender seclusion.

5.2.6. Education

Unlike much of the literature on the subject (e.g., Blair, 1985; Shvedova, 2005), in this study, literacy was not significant in explaining women's physical or oral participation; this supports True et al. (2012)'s statement that political engagement is uncorrelated with literacy (in fact, many successful political figures are illiterate). It must be pointed out that education has significantly improved in Himachal Pradesh, particularly in the Kangra Valley[33], and is perhaps no longer an accurate indicator of elitism – which is often regarding as a determinant in women's formal political engagement (Blair, 1985) – particularly for younger generations. In fact, during fieldwork, many women appeared surprised when asked about their children's education status, with many simply shrugging their shoulders, raising an eyebrow, and uttering 'of course'! While not all respondents were literate in our sample (45.6 per cent were not), I suggest that the near universality of schooling facilitates the engagement of all women in formal politics, with illiterate women having the option of going to GSs accompanied by younger, educated ones.

Nevertheless, increased education appears to be positively correlated with oral participation. Although it did not determine whether women attended GSs, for those who did, their likelihood to be verbally active increased by a factor of 1.08 for every unit increase of education (in years).

[33] Once referred to as the 'backward North State', Himachal Pradesh (HP) has led an important 'schooling revolution' (Drèze & Sen, 1995) and is now considered a leading state in terms of its education (Drèze & Sen, 2003). Within HP, the level of literacy in Kangra is amongst the three highest of the state and in the rural population of the valley, women's literacy is now significantly higher than the national level (79.64 and 65.46 per cent respectively) (Census of India, 2011).

This echoes Shedova (2005)'s statement that education makes women more confident in expressing their opinions in front of others during public events.

5.2.7. Feminist Stances

Most feminist stance variables are insignificant predictors in both models. The fact that women were already challenging gender norms (by engaging in the kuhl maintenance work or by personally believing that they would be as effective as men at kuhl management) was not correlated with greater formal participation. Discussion with male farmers indicates that men themselves often considered women as capable as men at carrying out maintenance work in the kuhls (stating that 'women from the mountains are stronger than any other women'). However, this did not necessarily result in the engagement of women in labour force (other than with MGNREGA). Thus, personal stances might not be sufficient to breach gender norms and engage in formal management and labour in the kuhl systems.

However, beyond moral beliefs, a greater level of financial dependence of women on their male relatives appears to influence participation in formal politics. Women whose household was registered with MGNREGA and who reported that their male relatives had been the ones using the greatest share of the 100 days of paid labour were four times less likely to physically participate and over two times less likely to orally participate. Further descriptive analysis of the variable indicates that 60 per cent of women who reported that MGNREGA's 100 days were mostly used by their husband had a shared account with him, as opposed to only 7 per cent for women who worked most of the labour days. These findings imply that feminist stances are irrelevant in determining women's formal political engagement, unless they reflect on cash distribution within the household. A skewed distribution of MGNREGA labour days in favor of the men in the household combined with women's resulting financial dependency reduces women's political engagement.

These findings are in line with the well-established notion of patriarchal bargain (Kandiyoti, 1988) whereby women who greatly depend on male kin for financial security often choose to

abide by male authority and patriarchal norms to secure financial gains. However, it is difficult to establish the order of events, as women's conservative attitude might be the reason, in the first place, why they take on less MGNREGA days of paid work than their husband. This 'chicken and egg' problem constitutes a universal concern relevant to multiple studies and remains difficult to solve.

5.2.8. Political efficacy

The results show that few variables linked to women's understanding of the irrigation system and management tools predict women's participation in formal politics. Women who were concerned with the lack of water were no more likely to participate than those who weren't. Similarly, women who expressed concerns over the overall management system of the kuhls were no more involved in formal political processes than those who didn't. This deviates from the assumption that women concerned with the outcome of the political process will more likely engage in it (Shvedova, 2005). Recognition of the pradhan's responsibility in irrigation management did not influence women's physical or oral participation.

However, women who reported that MGNREGA should prioritize the development and rehabilitation of kuhls were almost twice as likely to orally participate during GSs. During fieldwork, many farmers who critically needed water for their crops expressed strong support for investing MGNREGA labour in kuhl maintenance. In fact, some farmers had made direct demands to the PRIs for personal requests, such as building a small pond in their own fields to store the sometimes inconsistently flowing kuhl water for later usage[34]. These results reinforce previous findings asserting that women are more likely to be formally politically active if their livelihood depends on the kuhls. It also highlights that having a clear understanding of MGNREGA's development potential might also be associated with awareness of MGNREGA's underlying participatory processes whereby specific demands are made publically during the

[34] Traditionally, ponds were an important part of the kuhl landscape as farmers stored the extremely cold water (from snow melt or glacier melt) into small reservoirs to allow water to warm up before irrigating their crops.

GSs. This awareness of the value of attending GSs and speaking out about direct MGNREGA investments to secure irrigation flow might, therefore, provide a clear incentive for women to engage in formal political processes.

6. CONCLUSION

This study indicates that the institutionalization of the role of women as decision-makers in irrigation management (in state-kuhls) appears to increase women's likelihood to attend formal meetings where decisions regarding the kuhls are made. However, the formalization of decision-making procedure appears to hinder women's likelihood to publically speak out, as they might still prefer to choose informal ways of communication. Women who previously engaged in formal politics by voting in PRI elections were also more likely to continue participating in formal political processes, both in terms of attendance and public speech. Women whose support for a candidate was rewarded (the candidate became pradhan) were also more likely to attend formal public meetings. The study also shows that the institutionalization of the role of women in labour force (MGNREGA) is highly correlated with increased engagement in formal political processes, both physically and orally. I see two potential complementing reasons for this. First, MGNREGA provides women with the unique opportunity to engage in the formal world of paid employment – with visibility, rights, benefits, and duties – which can increase their political awareness. Second, MGNREGA's underlying dependence on formal political processes – where decisions regarding investments are made publically during GSs – requires women to attend public meetings not only to gain information but also to publically express their demands.

Factors pertaining to the private domain can also bring women into engaging in formal politics. Women affiliated to a 'political family' were correlated with greater attendance to GSs. Reliance on the governed resource (in this case water from irrigation canals) increased women's formal political engagement. Women originating from water-stressed areas (the Dhar) or those

whose livelihood is based on agriculture were more likely to be present and active during GSs. Further, this study shows that women with more children, women who had lived longer in the village, and Other Backward Caste women were more likely to engage in formal political processes.

Women who were more prone to feminist attitudes were no more likely to engage in formal politics. However, those with lower bargaining power within their household, due to having their husband use the greatest share of MGNREGA's 100 days of paid work, resulting in financial dependence (shared account) were less likely to participate in formal political meetings. Women with some degree of political efficacy were more politically active: being aware of MNREGA's potential in irrigation management increased women's likelihood to attend public meetings and formally speak out.

Overall, this study reiterates and/or partially refutes many existing findings regarding the effect of socializing factors from the private domain (livelihood, social status, education, etc.…) on women's engagement in formal politics. It also nuances previous correlations by looking at more personal aspects from the individual domain (feminist stances, political efficacy). However, it is the findings from the public domain that imparts novel knowledge on the engagement of women in formal political processes. India's transformative policies, with the decentralization of resource management to formal government bodies, MGNREGA, and the creation of gender quotas, are clearly altering gender dynamics in formal political processes in rural India. Although their effects on policy outcomes are still being widely debated (e.g. Campa, 2011; Chattopadhyay & Duflo, 2004), they clearly provide women with legitimate incentives to embrace their participatory role in formal decision-making processes. With current trends towards the increased feminisation of formal labour force, such as MGNREGA,[35] and the increasing power and responsibilities given to gender-balanced local government bodies, more women might claim their seat and speak at the table of formal political processes in rural India.

[35] The national rate of female engagement in MGNREGA significantly surpasses the required 33 per cent as in 2013 already more than 55 per cent of beneficiaries were women. Some states, such as Kerala, have reached unprecedented records: in 2013, more than 94 per cent of workers were female (nrega.nic.in).

REFERENCES

Abraham, V. (2009). Employment Growth in Rural India: Distress-driven? *Economic and political weekly 44*(16), 97-104.

Adhikari, B., Di Falco, S. and Lovett, J.C. (2004). Household characteristics and forest dependency: Evidence from common property forest management in Nepal. *Ecological Economics 48*(2), 245-57.

Agarwal, B. (1997). Gender, Environment, and Poverty Interlinks: Regional Variation and Temporal Shifts in Rural India, 1971-91. *World development 25*(1), 23-52.

Agrawal, A. and Gibson, C.C. (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development 27*(4), 629-49.

Agrawal, A. and Gupta, K. (2005). Decentralization and Participation: The Governance of Common Pool Resources in Nepal's Terai. *World Development 33*(7), 1101-14.

Alesina, A., Giuliano, P. and Nunn, N. (2011). On the Origins of Gender Roles: Women and the Plough. IZA Discussion Papers 5735. Institute for the Study of Labor.

Andersen, K. (1975). Women and Political Participation, 1952-1972. *American Journal of Political Science 19*(3), 439-53.

Andersen, K. and Cook, E.A. (1985). Women, Work, and Political Attitudes. *American Journal of Political Science 29*(3), 606-25.

Ashley, C. and Maxwell, S. (2001). Rethinking Rural Development. *Development Policy Review 19*(4), 395-425.

Baker, M. (2005) *The Kuhls Of Kangra: Community-Managed Irrigation in the Western Himalaya.* Seattle: University of Washington Press.

Banaszak, L. A. (2006). The Gendering State and Citizens' Attitudes toward Women's Roles: State Policy, Employment, and Religion in Germany. *Politics and Gender 2*, 29-55.

Banaszak, L.A. and Leighley, J.E. (1991). How employment affects women's gender attitudes. The Workplace as a locus of contextual effects. *Political Geography Quarterly 10*(2), 174-85.

Barker, D. K. (2005). Beyond Women and Economics: Rereading 'Women's Work'. *Signs 30*(4), 2189-209.

Bhattacharya, M., Bedi, A.S. and Chhachhi, A. (2009). Marital violence and women's employment and property status: evidence from North Indian villages. IZA Discussion Papers 4361. Institute for the Study of Labor.

Blair, H.W. (1985) 'Participation, Public Policy, Political Economy and Development in Rural Bangladesh, 1958-85'. *World Development* 13(12): 1231-47.

Boserup, E. (1970). *Women's Role in Economic Development*. London: George Allen and Unwin.

Campa, P. (2011). Gender Quotas, Female Politicians and Public Expenditures: Quasi-Experimental Evidence. Working Paper No. 157. Econpublica.

Carroll, S. J. (1989). Gender Politics and the Socializing Impact of the Women's Movement. In R. Sigel (Ed.), *Political Learning in Adulthood* (pp. 306-39). Chicago. London: The University of Chicago Press.

Census of India. (2011). *Office of the Registrar General and Census Commissioner, India.* [data file]. Retrieved from: http://www.censusindia.gov.in/Tables_Published/Basic_Data_Sheet.aspx

Chattopadhyay, R. and Duflo, E. (2004). Women as Policy-makers: evidence from a randomized policy experiment in India. *Econometrica 72*(5), 1409-43.

Chhibber, P. (2002). Why are Some Women Politically Active? The Household, Public Space, and Political Participation in India. *International Journal of Comparative Sociology 43*: 409-29.

Cleaver, F. (2001). Institutions, Agency and the Limitations of Participatory Approaches to Development. In B. Cooke and U. Kothari (Eds.), *Participation: The New Tyranny?* London (pp. 36-55). New York: Zed Books.

Crook, R.C. (2003). Decentralisation and Poverty reduction in Africa: The politics of local-central relations. *Public Administration and Development 23*(1), 77-88.

Deininger,K., Jin, S. and Nagarajan, H. (2011). Does Female Reservation Affect Long-Term Political Outcomes? Evidence from Rural India. Working Paper 5708. World Bank Policy Research.

Dethier, J.-J and Effenberger, A. (2012). Agriculture and development: A brief review of the literature. *Economic Systems 36*: 175-205.

Dichter, T.W. (1992). Demystifying Popular Participation (Institutional Mechanisms for Popular Participation). Paper presented at the *Workshop of Participatory Development*, Washington, DC, 26-27 February.

Dixon, R.B. (1982). Women in Agriculture: Counting the Labor Force in Developing Countries. *Population and Development Review 8*(3): 539-66.

Dixon, R.B. (1983). Land, Labor, and the Sex Composition of the Agricultural labor Force: An International Comparison. *Development and Change 14*: 347-72.

Drèze J. and Sen, A. K. (1989) *Hunger and Public Action*. Oxford: Oxford University Press.

Drèze, J. and Sen, A. K. (1995). *India: Economic development and social opportunity*. Delhi. New York: Oxford University Press.

Drèze, J. and Sen, A. K. (2003). Basic Education as a Political Issue. In B.G. Tilak (Ed.), *Education, Society and Development: National and International Perspectives* (pp. 3-48). New Delhi: APH.

Dube, D.K. (2013). Political Consciousness among rural women in Indian Himalaya: a study of Kumaon Hills. *Reserach on Humanities and Social Sciences 3*(1), 147-56.

Finkel, S.E. (1987). The Effects of Participation on Political Efficacy and Political Support: Evidence from a West German Panel. *The Journal of Politics 49*(2), 441-64.

Franklin, M.N. (2004). *Voter Turnout and the Dynamics of Electoral Competition in Established Democracies since 1945*. Cambridge: Cambridge University Press.

Harrell, F.E. Jr. (2001). *Regression Modeling Strategies. With Applications to Linear Models, Logistic Regression, and Survival Analysis.* Hoboken: Springer.

High-Pippert, A. and J. Comer (1998) 'Female Empowerment: The Influence of Women Representing Women'. *Women and Politics* 19(4): 53-66.

Holmes, R. Sadana, N. and Rath, S. (2010) *Gendered risks, poverty and vulnerability in India. Case study of the India Mahatma Gandhi National Rural Employment Act (Madhya Pradesh)*. London: Overseas Development Institute.

Hosmer, D.W, Jr., Lemeshow, S. and Sturdivant, R.X. (2013). *Applied Logistic Regression. Third Edition.* Hoboken: Wiley.

Irz, X., Lin, L., Thirtle, C. and Wiggins, S. (2001). Agriculture Productivity Growth and Poverty Alleviation. *Development Policy Review 19*(4), 449-66.

Iversen, T. and Rosenbluth, F. (2008). Work and Power: The Connection Between Female Labor Force Participation and Female Political Representation. *Annual Review of Political Science 11*, 479-95.

Jackson, C. (2012). Speech, Gender and Power: Beyond Testimony. *Development and Change 43*(5), 999-1023.

Jennings, M.K. (1979). Another look at the life cycle and political participation: Results from an eight-nation study. *Western Political Quarterly 36*, 364-85.

Joekes, S. (1987). *Women in the World Economy.* New York: Oxford University Press.

Kabeer, N., Mahmud, S. and Tasneem, S. (2011). Does Paid Work Provide a Pathway to Women's Empowerment? Empirical Findings from Bangladesh. Working Paper No, 05. BRAC Development Institute.

Kandiyoti, D. (1988). Bargaining with patriarchy. *Gender and Society 2*(3), 274-90.

Kantor, P. (2003). Women's Empowerment Through Home-based Work: Evidence from India. *Development and Change 34*(3), 425-45.

Kolavalli, S.L. and Kerr, J. (2002a). Scaling up Participatory Watershed Development in India. *Development and Change 33*(2), 213-35.

Kolavalli, S.L. and Kerr, J. (2002b). Mainstreaming Participatory Watershed Development. *Economics and Political Weekly 37*(3), 225-42.

Kumar, S. (2002). Does 'Participation' in Common Pool Resource Management Help the Poor? A Social Cost-Benefit Analysis of Joint Forest Management in Jharkland, India. *World Development 30*(5), 763-82.

Larsen, M. and Kaur, R. (2013). Sign of Change? Sex Ration Imbalance and Shifting Social Practices in Northern India. *Economic and Political Weekly 48*(35), 45-52.

Lee, M.M. (1976). Why Few Women Hold Public Office: Democracy and Sexual Roles. *Political Science Quarterly 91*(2), 297-314.

Lijphart, A. (1997). Unequal Participation: Democracy's Unresolved Dilemma. *American Political Science Review 91*(2), 1 – 14.

Lise, W. (2000). Factors influencing people's participation in forest management in India. *Ecological Economics 34*, 379-92.

Lister, R. (2012). Citizenship and Gender. In E. Amenta, K. Nash and A. Scott (Eds.), *The Wiley-Blackwell Companion to Political Sociology* (pp. 372-82). Malden: John Wiley & Sons Ltd.

Lovenduski, J. (1998). Gendering Research in Political Science. *Annual Review of Political Science 1*, 333-56.

Lowndes, V. (2004). Getting On or Getting By? Women, Social Capital and Political Participation. *British Journal of Politics and International Relations 6*, 45-64.

Malhotra, A. and DeGraff, D.S. (1997). Entry Versus Success in the Labor Force: Young Women's Employment in Sri Lanka. *World Development 25*(3), 379-94.

Mandelbaum, D.G. (1986). Sex Roles and Gender Relations in North India. *Economic and Political Weekly 21*(46), 1999-2004.

Matland. R.E. (1998). Women's Representation in National Legislatures: Developed and Developing Countries. *Legislative Studies Quarterly 23*(1), 109-25.

McClurg, S.D. (2003). Social Networks and Political Participation: The Role of Social Interaction in Explaining Political Participation. *Political Research Quarterly 56*, 449-64.

McDonagh, E.L. (1982). To Work or Not to Work: The Differential Impact of Achieved and Derived Status upon the Political Participation of Women, 1956-1976. *American Journal of Political Science 26*(2), 280-97.

Meinzen-Dick, R.S., Knox, A. and Di Gregorio, M. (Eds.) (2001). Collective action, property rights, and devolution of natural resource management: Exchange of knowledge and implications for policy. Proceeding from the *Workshop Zentralstelle für Ernährung und Landwirtschaft* (pp. 40-72). Feldafing, Germany.

Meinzen-Dick, R., Raju, K.V. and Gulati, A. (2002). What Affects Organization and Collective Action for Managing Resources? Evidence from Canal Irrigation Systems in India. *World Development 30*(4), 649-66.

Moghadam, V.M. (1992). Development and Women's Emancipation: Is There a Connection?. *Development and Change 23*(3), 215-55.

Mohanty, R. (2012). Gendered Subjects, gendered citizens. Women, citizenship rights and the state in the South. Working paper. ACCEDE.

Oakes, A. and Almquist, E. (1993). Women in national legislatures. A cross-national test of macrostructural gender theories. *Population Research and Policy Review 12*, 71-81.

Ostrom, E. (2005). *Understanding institutional diversity.* New York: Cambridge University Press.

Oswald, D.L. (2008). Gender Stereotypes and Women's Reports of Liking and Ability in Traditionally Masculine and Feminine Occupations. *Psychology of Women Quarterly 32,* 196-203.

Pai, S. (1987). Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India. *Social Scientist 15*(6), 16-32.

Pankaj, A. and Tankha, R. (2010). Empowerment Effects on the NREGS on Women Workers: A Study in Four States. *Economic and Political Weekly 45*(30), 45-55.

Prokopy, L.S. (2004). Women's participation in rural water supply projects in India: is it moving beyond tokenism and does it matter? *Water Policy 6*, 103-16.

Prokopy, L.S. (2005). The Relationship between Participation and Project Outcomes: Evidence from Rural Water Supply Projects in India. *World Development 33*(11), 1801-19.

Rao, N. (2012). Male 'Providers' and Female 'Housewives': a Gendered Co-Performance in Rural North India. *Change and Development 43*(5), 1025-48.

Ribot, J.C., Agrawal, A. and Larson, A.M. (2006). Recentralizing While Decentralizing: How National Governments Reappropriate Forest Resources. *World Development 34*(11), 1864-86.

Rosaldo, M.Z. (2009). The Use and Abuse of Anthropology: Reflections on Feminism and Cross-Cultural Understandings. In E. Lewin (Ed.), *Feminist Anthropology. A Reader* (pp. 107-28). Hobosen: John Willey & Sons.

Saito-Jenson, M., Nathan, I. and T. Treue (2010). Beyond elite capture? Community-based natural resource management and power in Mohammed Nagar village, Andhra Pradesh, India. *Environmental Conservation 37*(3), 327-35.

Sapiro, V. (1981). Research Frontier Essay: When Are Interests Interesting? The Problem of Political Representation of Women. *The American Political Science Review 75* (3), 701-16.

Shvedova, N. (2005). Obstacles to Women's Participation in Parliament. In J. Ballington and A. Karam (Eds.), *Women in Parliament: Beyond Numbers. A Revised Edition* (pp. 33-50). International Institute for Democracy and Electoral Assistance.

Siltanes, J. and Stanworth, M. (1984). The Politics of Private Woman and Public Man. *Theory and Society 13*, 91-118.

Singh, S. (2010). Women's autonomy in rural India: Need for cultural and context. *International Social Work 53*(2), 169-86.

Srivastava, N. and Srivastava, R. (2010). Women, Work, and Employment Outcomes in Rural India. *Economic and Political Weekly 45*(28), 49-63.

Stockemer, D. and Byrne, M. (2012). Women's Representation around the World: The Importance of Women's Participation in the Workforce. *Parliamentary Affairs 65*(4), 802-21.

Thomson, A. and Eichler, M. (1985). The Impact of Labor Force Attachment on Political Participation: A Reconsideration. *International Political Science Review 6*(3), 367-81.

Togeby, L. (1994). Political Implications of Increasing Numbers of Women in the Labor Force. *Comparative Political Studies 27*(2), 211-40.

True, J., Niner, S., Parashar, S. and George, N. (2012) Women's political participation in Asia and the Pacific. *Women's Political Participation Report Asia-Pacific*.

Vella, F. (1994). Gender Roles and Human Capital Investment: The Relationship between Traditional Attitudes and Female Labour Market Performance'. *Economica 61*(242), 191-211.

Verba, S. and Nie, N. (1972). *Participation in America.* New York: Harper and Row.

Verba, S., Nie, N. and Kim, J. (1978). *Participation and Political Equality: A Seven-Nation Comparison.* New York: Cambridge University Press.

Verba, S., Burns, N. and Schlozman, K.L. (1997). Knowing and Caring about Politics: Gender and Political Engagement. *The Journal of Politics 59*(4), 1051-72.

Von Braun, J. and Grote, G. (2002). Does decentralization serve the poor? In E. Ahmad and V. Tanzi (Eds.), *Managing Fiscal Decentralization* (pp. 68-90). London and New York: Routledge.

Wadley, S. (1995). No Longer a Wife: Widows in Rural North India. In L. Harlan and P.B. Courtright (Eds), *From the Margins of Hindu Marriage: Essays on Gender, Religion, and Culture* (pp. 92-118). New York: Oxford University Press.

APPENDIX

Table 6. Logistic regression models for physical and oral participation replacing variable 'MGNREGA' with 'MGNREGA Other household member' (where the household is registered with MGNREGA but the respondent is not involved).

			Physical participation		Oral participation	
		Variable	**Odds ratio (St.Err.)**	**P-value**	**Odds ratio (St.Err.)**	**P-value**
PUBLIC	**Political setting**	**State Kuhl system**	1.89 (0.32)**	0.04	0.56 (0.31)*	0.06
		Voted PRI elections	10.45 (1.15)**	0.04	10.79 (1.14)**	0.04
		Support for pradhan	1.62 (0.22)**	0.03	1.08 (0.26)	0.52
		Support for vice pradhan	0.5 (0.27)***	<0.01	0.92 (0.26)	0.76
	Labour force	**MGNREGA Other household member**	0.3 (0.66)*	0.07	0.30 (0.71)*	0.09
PRIVATE	**Livelihood and Irrigation**	**Land based IGA**	2.19 (0.2)***	<0.01	1.75 (0.22)***	<0.01
		Cash crops	1.47 (0.27)	0.16	1.40 (0.26)	0.21
		Marketed agriculture	0.65 (0.44)	0.33	0.35 (0.49)**	0.03
		Upstream on kuhl	3.07 (0.26)***	<0.01	3.09 (0.26)***	<0.01
		Payment for water	2.02 (0.29)**	0.01	1.77 (0.29)*	0.05
		Irrigation at night	0.65 (0.29)	0.14	0.34 (0.31)***	<0.01
	Household background	**Children ratio**	1.71 (0.21)**	0.01	1.44 (0.2)*	0.07
	Social Status	Political family	2.03 (0.39)*	0.07	1.40 (0.36)	0.35
		Age (years)	1.03 (0.01)**	0.04	1.02 (0.01)	0.19
		More than 10yrs in village	2.23 (0.31)***	<0.01	3.07 (0.33)***	<0.01
		OBC	1.76 (0.26)**	0.03	1.24 (0.26)	0.42
	Education	Education (years)	0.96 (0.03)	0.19	1.04 (0.03)	0.22
INDIVIDUAL	**Feminist stance**	Vote influenced by male relative	0.95 (0.22)*	0.8	1.4 (0.22)	0.13
		Greatest MGNREGA share to Male relative	0.55 (0.38)	0.11	0.78 (0.4)	0.52
	Political efficacy	Villagers responsible for kuhls	0.84 (0.41)	0.66	0.55 (0.44)	0.17
		Kuhls main MGNREGA job	1.31 (0.23)	0.23	1.85 (0.22)***	<0.01
		Intercept		*<0.01*		*<0.01*

N: 592

Physical Participation:
McFadden's pseudo R2: 0.170
Likelihood ratio: 137.142 (df.21.00)

Oral Participation:
McFadden's pseudo R2: 0.149
Likelihood ratio: 117.956 (df.21.00)

For the coefficients above, *, ** and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 7. Logistic regression models for 'Night irrigation'

		Night Irrigation		
		Variable	**Odds ratio (St.Err.)**	**P-value**
PUBLIC	**Political setting**	State Kuhl system	0.18 (0.93)*	0.07
		Voted PRI elections	1.74 (0.81)	0.49
		Female pradhan	0.08 (1.24)**	0.04
	Labour force	MGNREGA household	0.51 (0.32)**	0.03
PRIVATE	**Livelihood and Irrigation**	Land based IGA	0.8 (0.28)	0.43
		Other IGA	2.7 (0.45)**	0.03
		Total land (ha)	0.9 (0.35)	0.78
		Cash crops	0.55 (0.65)	0.35
		Cattle ratio	3.26 (0.27)***	<0.01
		Upstream on kuhl	1.96 (1.17)	0.57
		Payment for water	1.58 (0.61)	0.45
	Household background	Male ratio	0.43 (0.98)	0.39
		Young children ratio	5.08 (0.52)***	<0.01
	Social status	Scheduled Tribes	3.43 (0.36)***	<0.01
		OBC	7.78 (0.99)**	0.04
INDIVIDUAL	**Feminist stance**	Women supervising irrigation	0.32 (0.42)**	0.01
		Greatest MGNREGA share to Male relative	5.98 (0.49)***	<0.01
	Political efficacy	Lack of irrigation water	1.75 (0.56)	0.32
		Intercept		*0.08*

N: 592

McFadden's pseudo R2: 0.357
Likelihood ratio: 197.721 (df.18.00)

For the coefficients above, *, ** and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

PART V: PAPER IV

WOMEN IN MGNREGA

Understanding the Feminisation of the Labour Force in Rural India

ABSTRACT

There is ample evidence that the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) brings economic benefits to poor, disadvantaged women. However, little is understood about the socio-political processes that favour their engagement in MGNREGA in the context of patriarchy and the scheme's potential transformative effects on gender norms of conduct and labour division. This study examines these questions by investigating the political, socio-economic and agricultural background of 593 women and quantitatively analyzing their engagement in MGNREGA, in the context of the male-dominated irrigated landscape of Himachal Pradesh. Further, it assesses gendered labour preferences of 41 members of local governments (Panchayati Raj Institution, PRIs). Results indicate that 1) more gender inclusive political processes favour the enrolment of women in MGNREGA; 2) poor and vulnerable women are more likely to engage in MGNREGA; 3) women are exclusively interested in MGNREGA from an economic standpoint and are indifferent to its asset development potential; 4) while for many women MGNREGA benefits outweigh gender considerations, PRIs are inclined to respect gendered division of labour. Overall, as more women enter MGNREGA unconcerned by rural asset development outcomes, PRIs risk diverting labour force away from masculine tasks, to the detriment of other assets such as irrigation.

Keywords: women, MGNREGA, labour force, rural development, India.

1. INTRODUCTION

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) makes the Government of India the biggest employer in the world (Mahr, 2012). The scheme, which promises 100 days of paid work per household for any willing person, has hired more than 266 million people since its launch in 2006[36]. MGNREGA sets a female quota of 33 per cent, but many states have exceeded this threshold and, in 2012, women accounted for 53 per cent of total beneficiaries. The scheme's primary goal is creating durable assets to boost agrarian economies, but it also enables liquidity through wage employment. MGNREGA is decentralized, empowering local Panchayati Raj Institutions (PRIs) to manage the labour force and direct it towards developing assets of their choice. Last year, 166 million women engaged in unskilled labour: building roads, digging reservoirs or canals, constructing flood protection structures, or planting trees.

Many studies have examined the scheme's socio-economic implications at the community level (see for example Awashi, et al. 2011; Ghose, 2011; Raman, 2011). More studies have examined the socio-economic repercussions for female workers, providing evidence that MGNREGA empowers women by giving them unprecedented wages and financial independence (Kelkar, 2011; Pankaj and Tankha, 2012; Roche, 2012). Recent literature suggests that MGNREGA is particularly beneficial to poor women (Klonner and Oldiges, 2012; Thadathil and Mohandas, 2012). While these studies highlight the scheme's positive outcomes for individuals, they fail to understand the socio-political and economic processes that favour women's engagement in MGNREGA and the repercussions their enrolment has on rural development. These questions are particularly relevant because numerous socio-political and hydro-geological changes simultaneously entice and dissuade women from engaging in the scheme. Increased climate variability and rising urban migration put greater pressure on MGNREGA to develop and manage common pool resources. Further, with the improvement in rural socio-economic status, men, often more educated and thus more employable than women, are more likely to seek work

[36] nrega.nic.in

outside of MGNREGA (Harish et al, 2011). However, despite the clear need for MGNREGA labour for rural development and the void created by the disinterest of educated men in MGNREGA, social stigmas engrained in gender norms often restrict women from participating in public work (Pai, 1987; Alesina et al, 2011).

To address this topic, this study was divided into four sub-questions:

i) How do women learn about MGNREGA in the context of gender norms and intra-households restrictions?

ii) Who engages in MGNREGA?

iii) Why do women engage in MGNREGA?

iv) What are the social and rural development implications of women's engagement in MGNREGA?

To answer these four questions, which I label the 'how', 'who', 'why' and 'what' of the feminisation of MGNREGA, this study, based in the Kangra Valley in Himachal Pradesh (HP), empirically and qualitatively analyses a large data set from 592 female farmers and 41 PRI members. Specifically, the paper is based on an initial comparison of the socio-political, economic, and agricultural background of women working for MGNREGA (MGNREGA workers) with those not engaged in the scheme (non-MGNREGA workers). It is followed by a logistic regression analysis to explain women's engagement in MGNREGA. Further, we evaluate PRI members' attitudes towards women's involvement in public work. HP is relevant to this research topic because the state has the highest rural population amongst all Indian states[37] with only 9.1 per cent living below poverty line[38]. It also boasts some of the best performance indicators in India[39] and shows clear signs of economic growth[40]. In the backdrop of this booming economy, the engagement of women in MGNREGA has reached unprecedented levels: last year, the total number of female MGNREGA workers exceeded two

[37] hpplanning.nic.in
[38] In 2010 the national average was 33.8 per cent of BPL rural population (planningcommission.nic.in)
[39] Himachal ranks third on the Government of India's Human Development Index list (GoI, 2012)
[40] The rate growth in Himachal was 7.6 per cent in the past decade (himachal.nic.in)

hundred thousand, and HP recently received a national award for high female participation in the scheme[41].

2. WOMEN AND MGNREGA: LITERATURE REVIEW

2.1. MGNREGA and its benefits for women

MGNREGA is specifically focused on rural areas where principal income generating activity is agricultural. The scheme's twin objectives are rural development and employment. It aims at boosting local economies by creating durable assets that increase agrarian productivity by, for example, improving soil quality or developing irrigation facilities. For this, MGNREGA uses local labour, providing 100 days of paid employment per household available to any willing person. The work is unskilled and paid minimum wage. MGNREGA is decentralized and local PRIs determine which assets to priorities during a public meeting (*Gram Sabhas*, GS) with villagers.

However, many studies have demonstrated that the goal of economic growth has been largely outgrown by the employment provision objective (Berg et al, 2012; Pellissery and Jalan, 2011). Observers report that tasks are chosen by PRIs principally to provide easy work – payment is usually made after completion of a given measurable task, calculated based on the average input of a healthy man. Canal digging and renovations can be arduous and are avoided while road construction, which is often paid irrespective of job completion, is frequently chosen (Khanna, 2010).

Others have criticized MGNREGA for increasing production costs due to the rise in the market wage rates of labourers[42], which affects agricultural operations by reducing labour availability during the high season (Haque, 2011; Thadathil and Mohandas, 2012). However, because

[41] indianexpress.com (February 2013).
[42] Mahr (2012) reported that since 2006 the MGNREGA wage has increased an average of 81 per cent. Berg et al (2012) estimated that as a consequence, the real daily agricultural wage rate in India was boosted by 5.3 per cent.

MGNREGA's maximum duration is 100 days, it ends up being seasonal and irregular work (Pelissery and Jalan, 2010). The scheme typically acts as a safety net during the off-season when agricultural work opportunities are rare (Klonner and Oldiges, 2012). Furthermore, the shift from agricultural employment to MGNREGA is only temporary and many return to their original work after MNREGA work is completed (Haque, 2011; Thadathil and Mohandas, 2012). As poor people start earning money, their consumption grows and the value of agricultural products increases (ibid.). The higher wage in MGNREGA also boosts the pay rate in agriculture while the shift to MGNREGA creates a large market for labourers (ibid.).

For women, the situation is different. MGNREGA's goal was never specifically women's empowerment, but its structure has favoured their enrolment. MGNREGA sets a gender quota of 33 per cent and does not discriminate based on work type, wages, and benefits. In India, women's wages are typically 30 per cent lower than men (World Bank, 2009 in Holmes et al, 2010) giving women a great incentive to remain in MGNREGA and avoid returning to a lower wage [43] (Pankaj and Tankha, 2010; Thadathil and Mohandas, 2012). Other aspects of MGNREGA encourage women to enroll in the scheme, such as the requirement to implement crèches, medical facilities, access to water, and the obligation to provide work close to women's homes (Jandu, 2008 in Kelkar, 2011; Pankaj and Tankha, 2010; Pelisserry and Jalan, 2011; Thadathil and Mohandas 2012).

The beneficial characteristics of MGNREGA lead to a higher level of female participation in MGNREGA than in private farming all over India (Pelisserry and Jalan, 2011). Women gain economic independence because they become an important – if not the main – earning member of the family (Jandu, 2008 in Kelkar, 2011; Pankaj and Tankha, 2010). In patriarchal societies like India, having a personal bank account does not necessarily mean that women are free to control their earnings (Pellissery and Jalan, 2011). However, contributing to the family earnings not only empowers many women but also bestows a sense of pride (Pankaj and Tankha, 2010).

[43] Although the rate for women was found to increase as a result of MGNREGA, it did not do so at a similar rate to men's wages, meaning that the pay rate is still gender biased (Berg, et al., 2012). Zimmermann (2012) also found that the increased wage for women would occur mainly during the agricultural main-season, when female labour is needed.

2.2. Social Limitations

Not all women benefit equally from MGNREGA. The strenuous physical work can limit women's enrolment in the scheme. Since wages are paid after task completion and based on the average output of a healthy male worker, women work very hard to complete jobs. Older women often find the work too difficult or are simply excluded (Bhatty, 2008; Pankaj and Tankha, 2010; Sainath, 2007). A woman's household background can also determine her enrolment in MGNREGA. Field workers report that married women have less freedom in their enrolment decision: male relatives and the rest of the household can be uncooperative (Garg, 2008), or, conversely, force women to work for the scheme (Pankaj and Tankha, 2010). When allowed to work in MGNREGA, married women benefit more from the scheme than single or widowed women as many tasks are organized around families or couples (Holmes et al, 2010). For example, in earthworks' tasks, men are in charge of digging while their female relative carries the excavated soil away (ibid.). Single women are less likely to be chosen for this type of labour.

Women face difficulties managing both the physically arduous labour and their domestic chores (Tiwari and Upadhyay, 2012). Mentally and physically strained from MGNREGA tasks, women often struggle to manage domestic responsibilities (Pankaj and Tankha, 2010). Hirway (2008 in Kelkar, 2011) estimated that, in addition to MGNREGA work, women spend an extra 20-25 per cent of their time on domestic tasks. Therefore, larger households can be too much of a burden for women to engage in the scheme. This is particularly true if the household has many children. Most field observations have pointed out that crèches and medical facilities are rarely organised, to the detriment of women with younger children (Drèze et al, 2006; Holmes et al, 2010; Tiwari and Upadhyay, 2012).

Outside of the household domain, limitations to women's engagement in MGNREGA also exist. Local norms of conduct can restrict women to the private realm of the community, limiting their access to information about the scheme. Old labour customs often persist in some rural communities, dictating that women are not allowed to carry out public work (Alesina et al,

2011). Officials guided by gender norms often give women fewer days of work and deny their involvement in many types of work available (Holmes et al, 2010; Mahr, 2012). Instead, women are given easier jobs that can be completed in fewer days (ibid.). To address labour division norms, some states have implemented gender-differentiated tasks while others have reduced payment targets for women (Pankaj, 2008; PRIYA, 2008 in Kelkar, 2011).

3. STUDY BACKGROUND

3.1. Socio-economic profile

The study was conducted in rural areas of the Kangra Valley, near the town of Palampur in Himachal Pradesh (HP) (Figure 1). HP has witnessed a high GDP growth rate of 7.6 per cent in the past decade[44] and, with a per capita GDP of over 1,300 dollars, ranks 12th amongst all Indian states[45] (DES, 2012). In Kangra, only 24 per cent of households live below the poverty line (ESDHP, 2011). HP is also considered a leading state for education (Drèze and Sen, 2003) and sanitation (Kumar and Singh, 2010). Kangra's level of literacy ranks amongst the three highest districts in the state. In the rural population of the valley, women's literacy is now significantly higher than the national level (79.64 versus 65.46 per cent respectively) (Census of India, 2011).

In contrast with HP's booming economy, local communities, like most in northern Indian, are often depicted as being more oppressive for women (Dyson and Moore, 1983; Sen and Sengupta, 1983). In particular, the ancient canal systems prevalent in most northern states carry deeply engrained labour division norms that manifest outside the boundaries of agricultural practices, excluding women from public work.

[44] In comparison, the national growth rate was only of 6.9 per cent.
[45] In 2012 the GDP per capita of India was 1,500 dollars (World Bank 2011)

In spite of economic growth and gender prohibitions, since MGNREGA's implementation in 2007, HP has seen a significant number of women engaging in the scheme with over two hundred thousand women registered in 2012[46].

3.2. Irrigation practices

Irrigation plays an important social and economic role in HP. The Palampur district, where the study was undertaken, is carved by one of the most extensive gravity-flow irrigation networks, locally named kuhls, in the foothills of the Himalaya (Baker, 2005). Ground water is not easily accessible in the region. Thus, surface water from the kuhl system is the primary source of irrigation to the valley, accounting for 95 per cent of the irrigated area (ibid). Kuhls channel water from the steep mountains into the flatter and fertile lower terrains. The topology of the valley does not allow for large farms: land plots are too small and cultivation methods too labour intensive for farmers to compete with other regions, such as Punjab. Instead, agriculture remains mainly a subsistence activity and almost every household possesses a small plot of land used to produce wheat and paddy. Kuhl water is an essential aspect of the agricultural landscape and nearly every household relies on it to irrigate their crops.

The traditional kuhl system relies on collective action with local male farmers sharing responsibility for management and maintenance of canals (Baker, 2005). Women's responsibility consists mainly in caring for their private fields except when they engage in labour exchange with other women during high season (Narayanan, 2008 in Pankaj and Tankha, 2010). However, similar to other Himalayan regions, the valley is facing dramatic changes in hydrological patterns linked to climate change. More sporadic and intense rain during the monsoon season causes increasingly destructive flash floods, often damaging the kuhls' structure. More variable precipitation during winter has also decreased the flow of many snow-fed streams supplementing the kuhls. An increasing number of kuhls have remained unrepaired because of both the increasing trend in migration of educated men and women from rural areas

[46] Data from the nrega official website (nrega.nic.in) for the financial year 2011-12.

to urban ones and the changes from farm-based activities to non-farm ones. In view of the increasing failure of the community-management system, the state of Himachal Pradesh took over the ownership of some of the kuhls three decades ago. The Irrigation and Public Hearth (IPH) department was given control of state-canals but, unable to deal with the increased financial burden, recently decentralized management back to PRIs. The IPH hopes communities will use MGNREGA for future kuhl management.

4. METHODOLOGY

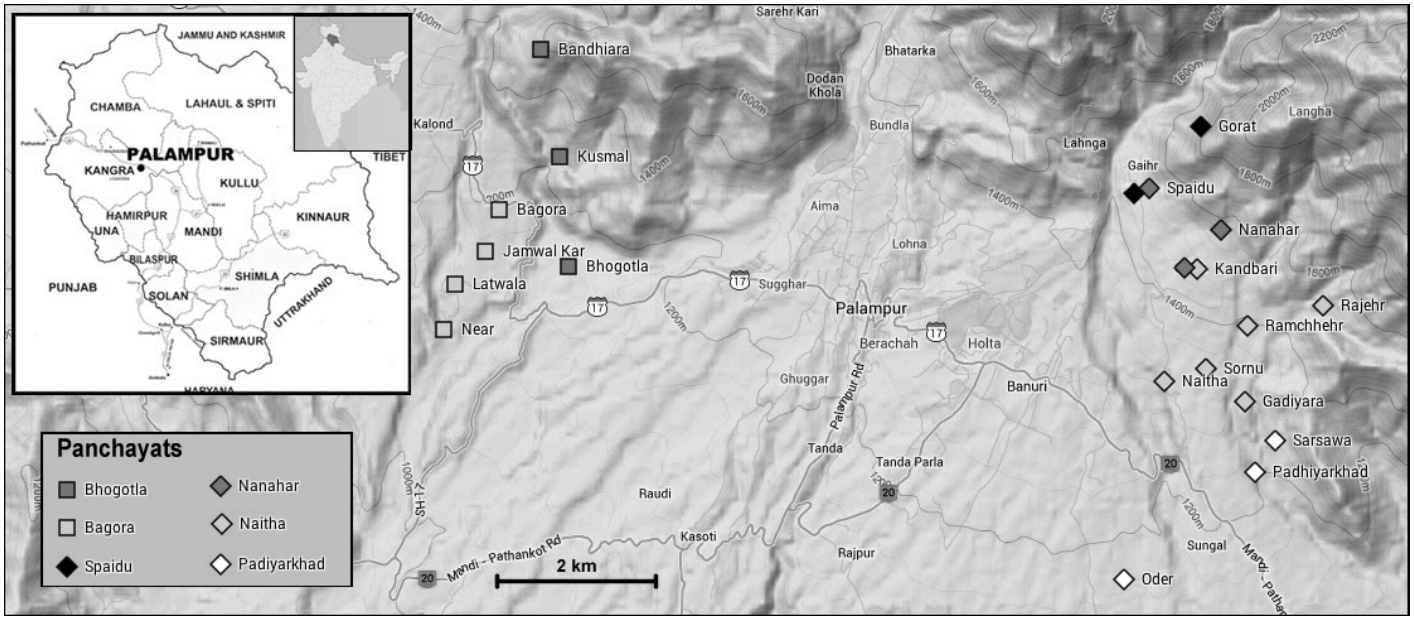

Figure 1: Field study map (with villages and corresponding panchayats) in Palampur area.

The methodology for this study consisted of a sequenced, mixed methods approach. During an initial two-month visit to India, in November-December 2010, key informants, such as local PRI leaders, men in charge of kuhl management, and local government figures were interviewed in Delhi and in the Palampur area. The interviews addressed the changing nature of the irrigation system in the Himalayan regions, the implementation of MGNREGA and its implications for women. In addition, five different panchayats in the vicinity of Palampur were

visited, and focus group discussions were carried out with local female PRI members about their role in agriculture and irrigation as well as their views on MGRNEGA. The information collected during this first visit served as a basis for designing the survey, which was tested during a focus group with local rural women.

The finalized survey was conducted during a second two-month trip to HP from March to April 2011. In order to assess women's engagement against varying degrees of gender restriction, the chosen respondents were users of irrigation water from two different canal management systems. Some women were from a traditional, male-managed irrigation system (farmers' kuhl), while others were beneficiaries of a state-owned irrigation system (state kuhl) where both female and male PRI members, jointly with the community, are formally responsible for irrigation management. The latter was taken over by the state in 1980 and its management decentralized to locally elected PRIs. The surveyed area consisted of 21 villages, which fell under the jurisdiction of six panchayats, four of which were female-led[47] (Figure 1). A stratified random sample targeted villages in the upper and lower watershed of each sub-catchment, interviewing 300 households in each sub-catchment. Within each household, one adult woman was randomly chosen and interviewed away from male relatives. To facilitate interactions with women, the structured interviews were conducted in the local Kangri dialect by trained local, educated female enumerators. The survey resulted in 592 usable interviews.

Further, all PRI members from the six panchayats were interviewed during one of the annual public meetings (*Gram Sabhas*, or GS) in early April 2011. In each PRI, one trained female enumerator interviewed each member separately, before the start of the GS. The PRI survey resulted in 41 usable interviews.

Two sets of questionnaires were used: one for PRI members, and one for household surveys. The questions were identical in both kuhls. The household survey consisted of five sections. Section one investigated respondents' socio-economic background in terms of household characteristics, caste, class, education, and income generating activity. Section two focused on

[47] The 1992 Amendment Act requires one third of all panchayats to be reserved for women. The panchayats to be headed by a woman are chosen based on a rotating allocative system.

agricultural background (land, crops, labour type, etc.). Section three targeted irrigation practices (involvement with kuhl management and water availability). Section four focused on respondents' engagement with MGNREGA as well as their personal preferences on which MGNREGA investments should be prioritized. Finally, section five targeted respondents' involvement in formal politics in terms of vote casting, motivations for participation, attendance to GSs and oral contribution to discussions during GSs.

The PRI data collected for this study was part of a larger survey focused on members' socio-economic background, political behaviour and attitudes towards MGNREGA. This latter part, which focuses on PRI members' involvement with MGNREGA, their preferences for MGNREGA investments, and their opinion on gendering MGNREGA, was used in this study. Members in favour of gendering MGNREGA were asked to assess the degree of masculinity of MGNREGA works by assigning them to categories labeled 'women only', 'men and women', or 'men only'.

The household data was converted into variables used in different logistic regression analyses (Table 1). A model was developed to describe women's engagement in MGNREGA. While some women had relatives involved in the scheme, we only considered women who personally contributed working days. The rest were categorized as 'non-MGNREGA women'. For the PRI survey, the perceived degree of masculinity of MGNREGA tasks was calculated by assigning a value of 0, 50, and 100 per cent to works that were considered appropriate for 'women only', 'men and women', and 'men only', respectively.

Table 1. Variables tested in the logistic regression model to predict women's engagement in MGNREGA.

	Descriptive variable	Description
Socio-political setting	State kuhl	Respondent using kuhl managed by the state (dummy 1 if state-own kuhl)
	Voted for PRI elections	Did the respondent vote for PRI elections? (dummy 1 if respondent voted)
	Political family	Responden's affiliation with political figures (PRI members, kohli, IPH…) (dummy 1 if respondent linked to political figure)
	Respondents supporting the pradhan	Did the respondent vote for the current pradhan during panchayat elections? (dummy 1 if voted for current pradhan)
	Respondents supporting the vice-pradhan	Did the respondent's vote for the current vice-pradhan during panchayat election? (dummy 1 if voted for current vice-pradhan)
	Female-led panchayat	Gender of the pradhan in the respondent's panchayat (dummy 1 if female pradhan)
	Respondents residing in village < 5 years	Time living in the village (dummy 1 if more than 5 years)
	Respondents residing in village <10 years	Time living in the village (dummy 1 if more than 10 years)
	Labour exchange	Does the respondent help other women in their fields in exchange of their labour in her fields? (dummy 1 if respondent exchanges labour with other women)
Socio-economic background of respondents	Age (years)	Age of respondent in years
	Widowhood	Respondent's marital status (dummy 1 if widow)
	Not married	Respondent's marital status (dummy 1 if not married)
	General Castes	Respondent's caste (dummy 1 if General Caste)
	Other Backward Castes	Respondent's caste (dummy 1 if Other Backward Castes)
	Scheduled Tribes	Respondent's caste (dummy 1 if Scheduled Tribe)
	Schedules Castes	Respondent's caste (dummy 1 if Scheduled Caste)
	Literacy	Respondent's literacy status (dummy 1 if literate)
	Education level (grade)	Respondent's level of education in grade
	Total expenditure (Rs/capita/month)	Total household expenditure (in Rs/capita/month)
	Household size (adult eq.)	Number of members in the household in adult equivalent (OECD eq. scale)
	Male ratio	Ratio of male to total number of adults in the household
	Children ratio	Ratio of total number of children to total number of adults in the household
	Young children ratio	Ratio of total number of unschooled children to total adults in the household
	Children over women ratio	Ratio of total number of children to total number of adult women in the household
	Young children over women ratio	Ratio of total number of unschooled children to total number of adult women in the household
	Male influenced vote casting	Was the opinion of male relatives important for the respondent in casting her vote? (dummy 1 if opinion of male significant)
Livelihood and MGNREGA	Upstream	Position on the kuhl (dummy 1 if upstream of kuhl)
	Concern over lack of irrigation water	Respondent's concerns over water availability (dummy 1 if respondent considers there is not enough water for crops)
	Concern over kuhl management	Respondent's opinion on kuhl management (dummy 1 if respondents consider better kuhl management is needed)
	Kuhl development priority in MGNREGA	What rural asset should be developed in priority with MGNREGA? (dummy 1 if respondents wants MGNREGA to prioritize kuhl construction and/or restauration)
	Land-based main income generating activity	Respondent's main income generating activity (dummy 1 of main income generating actitvity is land-based)
	Additional income generating activity	Is the respondents involved in additional income generating activities (eg.handcraft)? (dummy 1 if respondent is involved in additional income generating activities)
	Total land (ha)	Total areas under cultivation (owned and rented land) in hectares
	Cash crops	Does the respondents cultivate cash crops? (dummy 1 if some of the respondent's fields have been partly converted for cash crops)
	Cash crop land proportion (% total land)	Proportion of land converted for cash crop (% total land)
	Number of Cattle in household (head/household size)	Ratio of number of cattle animals to number of members in the household (adult equivalent)
	Respondents in favour of Gendered MGNREGA	Opinion of respondent on allocating MGNREGA jobs according to gender labour norms (dummy 1 if in favour of gendered MGNREGA)

5. RESULTS

5.1. Kuhl and respondents' profile

5.1.1. Kuhl characteristics

The agricultural and economic characteristics of respondents across both kuhl systems appear in Table 2. Results show that fewer women in the state kuhl relied on agriculture as their main source of income than in the farmers' kuhl (53.1 and 60.8 per cent respectively). Women in the state kuhl were also from smaller landholdings (0.27ha) and lower income (1,228Rs/capita) than in the farmers' kuhl (0.34ha and 1,463Rs). Finally, there is a clear distinction in cash crop land conversion between the kuhls. While over half of women in the state kuhl (54.8 per cent) had converted some of their land for cash crops, the proportion dropped to 4.0 per cent in the farmers' kuhl.

Table 2. Agriculture practices and expenditures in farmers' and state kuhls

	Farmers kuhl	State kuhl
Land based IGA (% total sample)	60.7%	53.1%
Total land (hectares)	0.34 [0.41]	0.27 [0.24]
Cash crops (% total sample)	4.0%	54.8%
Expenditure per capita (Rs/cap/month)	1,462.6 [782.9]	1,228.2 [667.2]

Numbers is brackets are the standard deviations

5.1.2. Population characteristics

Table 3 shows the socio-economic characteristics across caste distribution. Results show that Scheduled Caste (SC) women and Other Backward Castes (OBC) women belong to the poorer households. Further, results indicate that women from the General Caste (GC) are amongst the most educated while women from Scheduled Tribes (ST) are the least educated. STs, together with SCs also tend to have amongst the smallest landholdings in the valley.

Table 3. Socio-economic characteristics across caste samples

	Scheduled Castes	Scheduled Tribes	General Castes	Other Backward Castes
Literate respondents (%)	61.02	52.85	74.23	79.508
Average education level (grades)	4.5 [4.2]	4.2 [4.5]	6.3 [4.6]	6.5 [4.1]
Average expenditures (Rs/capita/month)	1413.6 [802.5]	1313.0 [690.4]	1523.5 [794.3]	1147.1 [673.6]
Average land holding (ha)	0.24 [0.17]	0.24 [0.17]	0.45 [0.53]	0.28 [0.28]

Numbers in brackets indicate the standard deviations

5.2. Comparative analysis between MGNREGA and non-MGNREGA workers

Nearly 46 per cent of women in the survey were working for MGNREGA. Of them, over 85 per cent contributed more person-days than their male relatives, and 82.7 per cent had their own bank account, while the rest shared their earnings with their husband. Socio-economic, political, and agrarian characteristics across the total sample are presented in Table 4. The table indicates clear differences across the sample. Regarding socio-political settings, a higher percentage of women were from the state-kuhl (58.5 per cent as opposed to 42.2 per cent for non-

MGNREGA). A higher number of women were residents of a female led panchayat (81.3 per cent as opposed to 68.1 per cent for non-MGNREGA). Finally, more women engaged in labour exchange systems in the MGNREGA group than the non-MGNREGA group (8.8 and 3.1 per cent, respectively).

There are also significant differences in socio-economic background across the sample. A greater number of General Castes (GC) women were in the non-working group than the working group (37.2 per cent as opposed to 16.2 per cent). The share of Other Backward Castes (OBC) women in the working group (26.1 per cent) was substantially higher than in the non-working group (15.9 per cent). Scheduled Tribes (ST) women formed almost half of the MGNREGA group (47.1 per cent) while their number dropped to 36.9 per cent in the non-MGNREGA group. There was no significant difference in the distribution of Scheduled Castes (SC) women across the sample. Regarding education, fewer women were literate in the MGNREGA group (56.6 per cent) than in the non-MGNREGA group (72.5 per cent). MGNREGA workers had studied on average 4 years while non-MGNREGA workers studied an additional 2 years. On average, MGNREGA women were from poorer households (1193Rs/month/cap as opposed to 1475Rs/month/cap for non-MGNREGA). Finally, MGNREGA women were from smaller households than non-MGNREGA ones (3.3 and 3.7 adult eq., respectively).

Regarding livelihood and MGNREGA, Table 4 indicates that more women living upstream of the kuhl were engaged in MGNREGA (58.5 per cent as opposed to 42.2 per cent in the non MGNREGA group). There was also a significant difference between the landholdings of MGNREGA and non-MGNREGA women. On average, the land size of MGNREGA women was 1.5 times smaller than that of non-working women (0.24 and 0.36ha respectively). Further, across the sample, a greater percentage of women whose income generating activity was land-based were from the MGNREGA group (66.2 per cent as opposed to 43.4 per cent). Also, a greater proportion of women in the MGNREGA group converted some of their land to grow cash crops (as opposed to the traditional wheat and paddy) than in the non-MGNREGA one

(33.5 and 25.6 per cent, respectively). Regarding women's concerns over rural development, more MGNREGA-women (75.0 per cent) were concerned about management of the irrigation system than non-MGNREGA women (60.3 per cent). However, fewer women in the MGNREGA group believed that the scheme should target the irrigation system (23.2 per cent as opposed to 33.8 per cent). Finally, there was no significant difference in the share of gendered labour supporters between the MGNREGA and non-MGNREGA workers.

Table 4. Socio-economic background, socio-political setting, and irrigation practices, MGNREGA, and rural development preference for MGNREGA and non-MGNREGA women.

		MGNREGA worker (N=272)	Non MGNREGA worker (N=320)
Socio-political setting	Respondents from State kuhl (%)	58.5%	42.2%
	Voted for PRI elections (%)	100.0%	95.6%
	Political family	8.1%	6.3%
	Respondents residing in female-led panchayat (%)	81.3%	68.1%
	Respondents exchange labour with other women (%)	8.8%	3.1%
Socio-economic background of respondents	Age (years)	41.0 [10.8]	40.6 [12.8]
	Widowed (%)	8.5%	5.9%
	General Castes (%)	16.2%	37.2%
	Other Backward Castes (%)	26.1%	15.9%
	Scheduled Tribes (%)	47.1%	36.9%
	Schedules Castes (%)	10.3%	9.7%
	Literate (%)	56.6%	72.5%
	Average level of education (grade)	4.2 [4.2]	6.2 [4.6]
	Total expenditure (Rs/capita/month)	1193.3 [629.1]	1474.5 [796.5]
	Household size (adult equivalent) (1)	3.3 [1.0]	3.7 [1.3]
Irrigation practices, MGNREGA, and rural development	Respondents residing upstream of the kuhls (%)	45.2%	37.8%
	Respondents concerned by the lack of irrigation water (%)	7.7%	10.9%
	Respondents concerned by the kuhl management (%)	75.0%	60.3%
	Respondents wishing to prioritize kuhl development in MGNREGA (%)	23.2%	33.8%
	Respondents whose main income generating activity is land-based (%)	66.2%	43.4%
	Respondents involved in additional income generating activities (eg.handcraft) (%)	8.8%	9.7%
	Average land holding (ha)	0.24 [0.19]	0.36 [0.42]
	Respondents whose fields have been partly converted for cash crops (%)	33.5%	25.6%
	Number of Cattle in household (head/total household)	0.7 [0.5]	0.7 [0.5]
	Respondents in favour of Gendered MGNREGA	12.1%	11.6%

(1) The total household size was calculated based on the OECD adult equivalence scale.

5.3. Logistic regression model

Results from the logistic regression model on women's engagement in MGNREGA are presented in Table 5. The model is statistically significant (p = 0.09) with a McFadden's pseudo

R^2 value of 0.205. To reduce noise in the model, only significant or near significant variables are included in the model, although all were tested and will be discussed.

Table 5. Logistic regression model for the prediction of women's engagement in MGNREGA.

	Engagement in MGNREGA		
	Variable	**Odds ratio (St.Err.)**	**P-value**
Socio-political setting	State kuhl	1.58 (0.23)**	0.05
	Political family	1.64 (0.38)	0.19
	Respondents residing in village < 5 years	2.31 (0.46)*	0.07
	Labour exchange	2.11 (0.46)*	0.1
Socio-economic background of respondents	Age (years)	0.96 (0.01)***	<0.01
	Widowhood	1.62 (0.44)	0.28
	Single	0.10 (0.83)***	<0.01
	General Castes	0.63 (0.25)*	0.07
	Scheduled Caste	0.81 (0.34)	0.53
	Education level (years)	0.88 (0.03)***	<0.01
	Total expenditure (1000Rs/capita/month)	0.67 (0.16)***	0.01
	Household size (adult eq.)	0.83 (0.09)**	0.04
	Male ratio	0.52 (0.77)	0.39
	Young children ratio	0.75 (0.24)	0.23
	Children over women ratio	1.22 (0.12)*	0.09
	Male influenced vote casting	2.10 (0.21)***	<0.01
Livelihood and MGNREGA	Land-based main income generating activity	2.32 (0.21)***	<0.01
	Total land (ha)	0.42 (0.47)*	0.06
	Intercept		*0.04*

N: 592
McFadden's
pseudo R2: 0.204
Likelihood ratio:
For the coefficients above, *, ** and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

5.3.1. Socio-political settings

Results from the logistic regression echo previous observations from Table 4, as women originating from the state-kuhl were 1.58 as likely to engage in MGNREGA. While we found that only women from the non-MGNREGA group had not voted for PRI elections, the logistic regression indicates that women' political attitude is not a significant predictor in MGNREGA engagement. Other political factors, such as having voted for the pradhan or vice-pradhan, were

not significant predictors either. Table 4 also shows that a comparatively greater number of MGNREGA workers originated from female-led PRIs, however the gender of the pradhan was not a significant predictor in the regression model. We also find that having a 'political family' is not a significant predictor of MGNREGA engagement. Finally, regarding social status, results from the logistic regression model indicate that women who had lived in the village more than 5 years were 2.3 times as likely to engage in MGNREGA.

5.3.2. Socio-economic background

The model in Table 5 indicates that many socio-economic variables were significant in predicting the engagement of women in MGNREGA. Age is found to be negatively correlated with MGNREGA engagement. For every unit increase (in years) of age, women were 1.04 times less likely to enlist in MGNREGA. While results indicate that widowhood is positively correlated with engagement in MGNREGA, we find that it is not a significant predictor. Single women, on the other hand, were 10 times less likely to engage in MNGREGA. Although there were disparities in caste distribution in the comparative table between MGNREGA and non-MGNREGA workers (Table 4), the logistic regression model indicates that only General Castes was a significant predictor. Women belonging to GC were 1.6 times less likely to engage in MGNREGA.

Although the comparative model indicated a difference in literacy and education across the sample, literacy by itself was not found to be a significant predictor in MGNREGA, unlike education. For every year increase in education, women were 1.14 less likely to work in MGNREGA.

Table 4 also indicates a clear difference in average expenditure across the sample. The results from the logistic regression confirm the importance of expenditure in determining women's engagement in MGNREGA as for every unit increase in expenditure (in 1000Rs/month/cap) women were 1.49 less likely to work in MGNREGA.

When assessing the effect of patriarchy, results in Table 5 indicate that having more men in the household (male ration) did not significantly predict women's engagement in MGNREGA. However, women whose husband had influenced their political choice were 2.1 times as likely to engage in MGNREGA. Further, in accordance with results from Table 4 indicating that MGNREGA women are from smaller households, household size is shown to be a significant predictor in MGNREGA engagement: for every unit increase in household size (in adult eq.), women were 1.20 times less likely to work in MGNREGA. We also find that for every unit increase in the ratio of children to woman, women's likelihood to engage in MGNREGA increases by 2.10. The ratio of young children to total adults was not found to be a significant predictor.

5.3.3. Irrigation practices, MGNREGA, and rural development

Although Table 4 indicates that more workingwomen were from the upper land of the canal systems, the logistic regression model indicates that the position on the kuhl is not a significant predictor of MGNREGA engagement. However, echoing results in Table 4, land holding is appears to be a significant predictor of women's engagement in MGNREGA. For every unit increase in land size (in ha), women were 2.4 times less likely to engage in MGNREGA. Further, Table 4 indicates that the majority of MGNREGA workers' income generating activity (IGA) was land-based. The logistic regression confirms these observations, with women whose main IGA is land-based being 2.3 times as likely to engage in MGNREGA. Although Table 4 indicates that a greater proportion of women in the MGNREGA group converted some of their land to grow cash crops, it is found that the land conversion to cash crop does not predict women's engagement in MGNREGA. Further, similar to observation in Table 4, women who exchange labour with other women during high season were found to be twice as likely to work in MGNREGA. Further, as opposed to some observation in Table 4, results from the logistic regression model indicate that none of the variables related to kuhl management and/or maintenance and to MGNREGA's preferred investment were significant in predicting women's

engagement in MGNREGA. Finally, echoing observations from Table 4, we find that supporting the gendered division of labour in MGNREGA is not a significant predictor in the logistic regression.

5.4. PRIs and MGNREGA development

Table 6 shows that in the six PRIs covering the two watersheds over 75 per cent of PRI members were involved in MGNREGA, of which 58 per cent were women. Contrary to the household data, there were more MGNREGA workers in farmers' kuhl PRIs than in the state kuhl PRIs. More importantly, in the farmers' kuhl PRIs, close to a third of all members were in favour of allocating different tasks to men and women, as opposed to only 8.33 per cent in the state kuhl PRIs. By contrast, only 11.9 per cent of the total household sample believed that MGNREGA labour should be distributed according to gender.

Results indicate that supporters of gendering MGNREGA lean towards leaving the work on kuhls and flood control to men exclusively (with a masculinity degree of 88.9 per cent), while road construction (44.4 per cent masculinity), cleaning watersheds (41.0 per cent masculinity), and afforestation work (44.4 per cent masculinity) are deemed acceptable for women.

Table 6. Distribution of MGNREGA workers and opinion on gendering MGNREGA in state kuhl and farmers kuhl PRIs.

	Farmers kuhl PRIs (N=29)	State kuhl PRIs (N=12)
Members working in MGNREGA (% total sample)	79.3%	66.7%
Female members working in MGNREGA (% total female sample)	86.7%	71.4%
Male membersworking in MGNREGA (% total male sample)	71.4%	60.0%
Members in favour of gendering MGNREGA (% total sample)	31.1%	0.0%*

** One female member did not respond to the question*

6. DISCUSSION

6.1. 'How': Socio-political context and MGNREGA implementation

The political setting in which women evolve can determine how they interact with the outside world. This, in turn, can influence their engagement with MGNREGA. As Pankaj and Tankha (2010) found, the administrative and institutional set up in local communities affects women's decision to enroll in MGNREGA. An ineffective administrative system often leads to low engagement in the scheme. Interaction with officials and government figures can increase women's confidence in engaging in the public world of MGNREGA (ibid.). More importantly, these conversations help inform them about various opportunities as well as their rights and entitlements (Haque, 2011; Klonner and Oldiges, 2012; Mahr, 2012). This study also shows that, in agrarian communities, the institutionalization of irrigation management can contribute to facilitating women's engagement in MGNREGA. In the Kangra Valley, state-owned irrigation systems require local PRIs to engage in formal processes regarding the management of productive assets and the handling of funds for public service delivery. This study demonstrates that women's likelihood to engage in MGNREGA is greater in state-managed irrigation systems. There are two reasons that could explain this. First, the PRI's local capacity for administrative work in irrigation management may increase their performance as MGNREGA administrators, triggering greater participation in state managed irrigation systems. Secondly, legitimizing the role of women as decision-makers increases their likelihood of participation (Girard, in press). Women's engagement in non-domestic roles might then be deemed more acceptable in formal decentralized management systems relying on gender inclusive participatory processes. Women might also be more likely to interact with decision-makers in PRIs and learn about MGNREGA's rights and entitlements (Haque, 2011; Klonner and Oldiges, 2012; Mahr, 2012; Pankaj and Tankha, 2010). Finally, as opposed to farmers' kuhls, state-kuhl systems rely on MGNREGA as a critical labour force. The importance of MGNREGA in the state kuhl system might result in a greater awareness of the scheme and increase women's

likelihood to participate in it. During fieldwork, we found that many farmers in the state kuhl were well aware of MGNREGA as a substitute labour force, and many had made specific requests to PRIs regarding irrigation assets.[48] MGNREGA being more integral to local knowledge on irrigation might then result in more women knowing about and partaking in the scheme.

This latter point emphasizes the significant link between informal means of information acquisition and MGNREGA. Women often acquire information informally through their husband or interactions with other women (Cleaver, 2001). Women's social capital is essential to information sharing. During fieldwork, many women reported engaging with MGNREGA because they had seen other women do it. One farmer explained that women were 'jealous' in nature: 'women engage in MGNREGA because they see their neighbours do it and, like them, they want to earn cash (Female farmer, personal communication). Social capital is a reflection of social networking, often built over many years. As this study shows, the longer women reside in the panchayat, the greater the increase in women's likelihood to engage in MGNREGA. Women participating in activities outside their households also facilitate social networking and exchange of information. In this study, women were more likely to engage in MGNREGA if they exchanged labour with other women. Thus, activities that favour informal information sharing might result in women being better aware of the scheme and engaging in MGNREGA. Further, women who are already used/allowed to engage in activities outside their households might be more likely to engage in other activities. As such, although Holmes et al (2010) state that social networks and informal safety nets have developed with MGNREGA, I suggest that the relationship might also be reciprocal: existing social capital may determine female engagement in the scheme.

Overall, socio-political contexts can play a key role in favouring women's engagement in MGNREGA. Gender-inclusive participatory processes and reliance on MGNREGA labour in irrigation might encourage women to engage in non-domestic activities as well as be more

[48] Some farmers had asked the PRIs to invest MGNREGA labour into the construction of small ponds to store inconsistently flowing water from the kuhls for later usage.

aware of the scheme. Informal information sharing, resulting from social capital and group activities, is also vital in distributing information about the scheme and favours their engagement in MGNREGA.

6.2. 'Who': MGNREGA workers

An appropriate socio-political context is an essential prerequisite for proper implementation of MGNREGA in the panchayat and is the first step towards enrolling women in the scheme. Women who are informed about the scheme and supported by implementing agencies still face community and intra-household restrictions or physical impediments in their engagement with MGNREGA.

A major critique of MGNREGA has been the exclusion of elderly and unmarried women because the tasks are arduous and often carried out in pairs (Bhatty, 2008; Holmes et al, 2010; Sainath, 2007). However, Pankaj and Tankha (2010) report that in Kangra the liberal attitudes of implementing agencies have facilitated the participation of disadvantaged women, who benefit from the social interaction and subsequent sense of belonging. This study does not support such observation, as we find that older and single women were less likely to engage in the scheme, thus confirming findings from Sainath (2007), Bhatty (2008) or Holmes et al (2010). Thus, for some women, the social and economic benefit of the scheme may not outweigh the widely reported physical and logistical constraints.

It has also been widely reported that intra-household dynamics can shape women's engagement in the scheme. In particular, household hierarchy often entails that the head of the household decides on women's enrolment in the scheme. In Pankaj and Tankha's study (2010), a fifth of female MGNREGA workers reported that engagement in the scheme was dictated by a male relative rather than personal choice. In our study, the number of men in the household, and, therefore, the internal degree of patriarchal hegemony, did not influence women's engagement in the scheme. This might be partially due to the high outmigration of male family members from rural areas (Bhatty, 2006, Mehrotra, 2008; Talukdar, 2008 in Pankaj and Tankha, 2010),

which mitigates the potentially restrictive effects of having more men in the household. However, women in the working group showed greater reliance on their male relatives' opinions, reporting that male peers determined their political choices. While this does not prove that the spouse has directly contributed to women's decision to engage in MGNREGA, it indicates that, in the MGNREGA group, women were more influenced by their male relatives than those who do not participate in MGNREGA. As Pankaj and Tankha explain, 'in a male dominated patriarchal society, it is difficult to believe that women's decision to avail of employment under MGNREGA would get precedence over the decision of male family members' (p. 45). Indeed, our own field experience while searching for local women to work as enumerators indicated that Kangri norms – and arguably Indian norms – require women to seek their spouse's or father's approval before engaging in any activity outside their house.

Restrictions rooted in household composition might also come from the total number of household members: larger households might lead to more non-cooperation problems and increased household burden for women (Hirway, 2008 in Kelkar 2011; Pankaj and Tankha, 2010). This study supports such findings as larger households were negatively correlated with MGNREGA engagement. However, this study also shows that having children does not exclude women from finding work with MGNREGA. On the contrary, the more children women have, the more likely they were to engage in the scheme. Having more children leads to greater financial insecurity and potentially incentivizing engagement with MGNREGA. Further, as Kelkar (2011) pointed out, women who struggle with the increased workload often distribute it to other family members. Thus, women with more children might be able to depend on older siblings to care for younger ones, enabling them to spend time on the MGNREGA worksite.

This later point stresses the significant economic benefits of MGNREGA for women. Most female workers in this study received their wage directly in their own bank account.[49] As stated in other studies (Kelkar, 2011; Pankaj and Tankha, 2010), gaining economic independence from men might incentivize women to enroll in the scheme. As many have previously highlighted,

[49] In their sample, Pankaj and Tankha (2010) found that 72 per cent of women had their own individual account and that half retained up to 25 per cent of their earnings while only 25 per cent retained none.

MGNREGA is a unique source of income, particularly for poor people (Haque, 2011; Klonner and Oldiges, 2012; Thadathil and Mohandas, 2012). This study confirms existing findings, as women from poorer households were more likely to engage in MGNREGA. We also find that the least educated women benefit the most from the scheme. Because MGNREGA works do not require skills, it is an enticing source of employment for uneducated women. Further, although this study shows no difference in the distribution of Scheduled Castes (SC) women across the sample, the large proportion of Scheduled Tribes in the scheme (almost half of MGNREGA workers) mirrors the nationwide trend for MGNREGA beneficiaries. Indeed, Taque (2011) reported that the share of STs and SCs in MGNREGA is disproportionally higher than in the actual Indian population. STs and SCs are often amongst the poorest sections of the population, and caste norms often dictate that higher caste women who work outside the house 'amount to a loss of honour and dignity' for the family (Pankaj and Tankha 2010: 48). Our results reinforce these findings, as General Caste women (GCs) were significantly less likely to engage in the scheme. Other castes, although unevenly distributed across the sample, were not significant predictors in MGNREGA engagement, implying that, unlike for GC women, variables other than caste determined the engagement of STs and SCs in MGNREGA.

Overall, it is apparent from this study that women who engage in MGNREGA would benefit the most from the scheme in terms of financial security for themselves and for their children. We find however, that social norms, and perhaps the physicality of MGNREGA labour, might still preclude vulnerable women, such as older women or widows, from engaging in the scheme.

6.3. 'Why': economic or rural development incentives?

There is clear evidence from the literature and this study that women, particularly poor and uneducated women, have considerable economic incentives to engage in MGNREGA. This study also shows that the women who engage in the scheme often rely heavily on agriculture, subjecting them to recent climatic and social changes degrading irrigation system performance. In particular, because they are poor and from small landholdings, they are also more likely to

benefit from government schemes encouraging crop conversion for increased income. The government encourages small landholders to invest in cash crops with the implementation of schemes such as the *Pandit Deen Dayal Kisan Bagwan Samridhi Yojna*[50]. As a local farmer pointed out, growing cash crops requires more water on a more consistent basis (personal communication, 2010). Thus, small landholders and cash crop growers, forming a significant portion of MGNREGA beneficiaries, have become increasingly dependent on effective irrigation system functioning.

The high proportion of MGNREGA women concerned with kuhl management also reflects reliance on water in the working group. Given the important socio-economic role of canals in the region and the current hydrological changes, many women expressed concern over irrigation during focus groups and fieldwork. However, the logistic regression model indicates that women did not engage in the scheme because they were concerned with irrigation management or because they wanted to develop the kuhl systems for their own benefit. There is a clear gap between identifying the 'problem' and seeing MGNREGA as a potential 'solution'.

One could argue that women are not traditionally involved in irrigation management, and although they might express concerns over water availability, this might not be a sufficient concern to prompt engagement in the masculine domain of kuhl management. However, results indicate that traditional gender norms excluding women from irrigation management tasks do not hinder women's engagement in MGNREGA. In fact, only 10 per cent of women expressed concern about gender norms in labour division and wished that MGNREGA work was allocated based on gender. During focus groups, while many women recognized that MGNREGA work was strenuous and that women struggled more than men– many indicating that this dissuaded them from the scheme – few were concerned by the fact that they disturbed local norms of gendered labour division. For female farmers, MGNREGA has become detached from its primary goal of rural development as well as from societal norms concerning labour division

[50] The *Pandit Deen Dayal Kisan Bagwan Samridhi Yojna* is a rural development scheme promoting the diversification of agriculture and the adoption of cash crops for poor farmers (http://hpagrisnet.gov.in/agriculture/default.aspx)

and has become solely an employment opportunity (Berg et al, 2012; Pellissery and Jalan, 2011). Women see MGNREGA less as a chance to improve their irrigation system, on which they heavily rely, and more as an opportunity to earn their own income and become economically empowered (Jandu, 2008 in Kelkar, 2011; Pankaj and Tankha, 2010; Pelisserry and Jalan, 2011; Thadathil and Mohandas, 2012).

The economic potential of MGNREGA is unquestionably the primary reason for female engagement. Many women reported that they had no initial interest in the scheme because they were already busy with domestic chores, agriculture, and caring for cattle. They also felt self-sufficient from harvesting crops which they stored for use during the year. However, with the transition to a cash-economy, many women felt cash was necessary to survive. Particularly those whose landholdings did not allow for cash-crop conversion were very enticed by the financial benefits of engaging in MGNREGA. In fact, some women with small landholdings reported that they chose to work in MGNREGA and hire someone to work in their fields. The financial lure is further demonstrated by women reporting reticence to work in MGNREGA at first, but changing their minds once they saw other women buy clothing and other goods for themselves.

Overall, women's main motivation to engage in MGNREGA is detached from any rural asset development goals that would actually benefit farmers. Their incentive to work in MGNREGA is primarily economic and is such that, for women, it outweighs socially engrained gender norms of labour division.

6.4. 'What': The feminisation of MGNREGA and its implications

Women view MGNREGA principally as a 'cash-scheme' and it is clearly leading to the re-organization of gender relationships within the community and the household for a couple of reasons. First of all, women have strong incentives to work in MGNREGA, even during the high season, earning as much as their male peers (Pankaj and Tankha, 2010; Thadathil and Mohandas, 2012). Consequently, they are starting to constitute a significant and consistent share

of the labour force. Pankaj and Tankha calculated that women in Kangra contributed as much as 93 per cent of the total person-days earned by the household. This can have important repercussions in agricultural and social arrangements. As previously noted, Kangri culture includes entrenched social practices of female labour exchange during peak season (Narayanan, 2008 in Pankaj and Tankha, 2010), but, as this study shows, the same women who normally engaged in labour exchange are increasingly choosing to work in MGNREGA. Female labourers are no longer as readily available during high season. Women prefer to convert unpaid hours of work in other people's fields into paid ones with MGNREGA (Pankaj and Tankha, 2010). During our fieldwork, many female farmers complained that, because of MGNREGA, they struggled to find women willing to help them in their fields. This might subsequently trigger women who normally exchange labour but cannot currently find anyone to work in their fields to themselves engage in MGNREGA. Further, women who already work outside their home recognize that they can now get paid for it. Clearing and maintaining drainage lines inside fields is an unpaid job and many women felt that it could be exchanged for a paid work under MGNREGA. Many farmers also mentioned that as women are becoming wealthier they are increasingly unwilling to engage in labour exchange, often due to their 'higher gained status' (female farmer, personal communication). Labour unavailability is a concern in other domains of activity too, such as picking tea leaves. Pankaj and Tankha reported that tea gardens in the Kangra Valley were struggling with labour hiring: many could not find women willing to work for a wage smaller than MGNREGA's while others, who made their wages competitive with MGNREGA's, were struggling for profitability because of increased salary cost. Field observations during this study also revealed that local female tea garden pickers were now replaced by women from outside of the valley and often from other districts[51].

Further, women who work in MGNREGA have involved themselves more in the formal public life of their community: MGNREGA workers participate more in GSs and contribute to public discussions (Girard, in press; Kar, 2013). Studies have also shown that women's increased

[51] Pankaj and Tankha (2010) reported that in many other districts of HP the level of participation of women was comparably much smaller than in Kangra.

income gives them greater control over household expenses (Jha, 2011; Kar, 2013; Kelkar, 2011). During fieldwork, many women reported that they had more decision leverage within their household. Many chose to invest their MGNREGA earning in their children's education by sending them to better schools. In fact, future prospects for their children were big factors in explaining why women disregard the rural development value of the scheme. She explained:

> 'I am working hard in MGNREGA because I want to send my children to a better school so I can secure their future. My children will also have to take care of me when I am older so I want to ensure they have a good job. But I know that this means they will likely move to the city to continue studying and find jobs. They will likely not get involved in agriculture and will not be interested in irrigation management.'

This comment highlights the two-edge sword of MGNREGA. While its purpose is the creation of productive assets that can be used by future generations of farmers to improve food production and income, these future generations who gained better education because their parents benefited financially from MGNREGA might instead be drawn toward non-agricultural jobs. Women are disinterested in which rural assets are targeted by MGNREGA because they principally desire financial security and secure futures for their children rather than agricultural return.

The increased feminisation of MGNREGA, although a great source of social and economic empowerment for women, may reduce the scheme's impact on rural asset development. As previously explained, MGNREGA development projects are chosen through participatory processes by villagers and PRI members. Although more women are engaging in such formal participatory processes (Girard, in press), this study indicates that female beneficiaries are unlikely to ask local governments to work on the irrigation system. Further, studies have reported that women who attend GSs rarely contributed to public discussions on which assets should be targeted by MGNREGA (Pankaj and Thanka, 2012). The increasingly large female labour force therefore implies that local PRIs are becoming the principal decision-makers in charge of investing in projects of their choice. However, this study shows that, unlike female workers, PRIs tend more strongly to gender restrictions. In particular, the type of irrigation system clearly impacts decision-makers' views on the use of female MGNREGA workers for

rural development. In a previous study carried out with a sample of 67 PRI women from all over India, I also found a strong correlation between irrigation practices and favouring gender division of labour in MGNREGA: while only 7.1 per cent of PRI members from groundwater irrigated areas reported being in favour, the number rose to 31.4 per cent for members from surface-water irrigated areas (Girard, forthcoming). Entrenched ideas about gendered labour allocation affect the type of work deemed acceptable for women. Given the feminisation of labour, this carries the risk of diverting female labour towards non-masculine tasks, to the detriment of irrigation system development.

Overall, female MGNREGA beneficiaries appear to distance themselves from agriculture and irrigation. Long-established social connections rooted in irrigation, such as female labour exchange, are disrupted. Further women's increased financial security incentivizes them to invest their children's education away from future agricultural jobs. While MGNREGA favours women's engagement in formal politics, their lack of concern for rural asset development implies that gender norm-concerned PRIs might choose to invest female labour in other tasks than irrigation development.

7. CONCLUSION

This study indicates that the socio-political setting can influence women's engagement in MGNREGA. Women who belong to an irrigation management system inclusive of women's participation have a greater likelihood of engaging in MGNREGA. Female inclusive participatory processes legitimize women's role in the non-domestic domain (Girard, in press), which in turn might facilitate information sharing and ensuing female engagement with MGNREGA. Further, formally decentralized irrigation systems might be more experienced with dealing with formalities and handling state funds, which favours the administrative success of the scheme. State-kuhls also rely heavily on MGNREGA and thus women from such systems might be more aware of the scheme. This study also shows that social settings enabling the

mobility of women and information exchange favour women's participation in MGNREGA. Women who lived in the village longer and had larger social networks and those who exchanged labour with other women were more likely to engage in MGNREGA.

Further, this study indicates that economic and livelihood background is crucial in understanding women's engagement in MGNREGA, as the most financially vulnerable women are more likely to work in the scheme. We found that women from poorer and smaller households, whose main income is agricultural, who have smaller landholdings, and who are less educated are more likely to engage in the scheme. Additionally, un-married women are less likely to work for MGNREGA, echoing literature on male-dependence to perform labour tasks (Holmes et al, 2010). This study also indicates that women with more children are more likely to engage in MGNREGA. Finally, we find that women might respond to male pressure in engaging in the scheme, as those who relied more heavily on male opinions were more likely to engage with MGNREGA.

Salary from MGNREGA provides poor and economically vulnerable women with a real incentive to participate in the scheme. In fact, I argue that women's economic incentives to enroll and remain in MGNREGA result in their disregard of patriarchal constraints. We find that a majority of women were unconcerned about defying gender norms of labour and performing tasks that are traditionally men's responsibility (such as digging kuhls). Women's engagement in MGNREGA challenges patriarchy in many other ways. Women greatly benefit from the scheme in terms of economic empowerment and ensuing social integration: female workers are more likely to engage in formal politics in their community (Girard, in press) and their greater economic bargaining power increases their leverage in decision-making regarding spending within their male-hegemonic household (Kelkar, 2011).

Finally, this study shows that women's engagement in the scheme was uncorrelated with their concerns or wishes for rural asset development. Women view MGNREGA principally as an employment scheme, detaching it from its rural development goal. The increased feminisation of the MGNREGA labour force and women's disinterest in asset development selection imply

that PRIs are becoming the main decision-makers regarding MGNREGA investments. However, we find that local leaders appear more inclined to reproduce gendered labour divisions engrained in traditional natural resource management. In the patriarchal irrigation landscape, this implies that as more women engage in MGNREGA, there is a risk of PRIs diverting the female labour force towards tasks deemed acceptable for women, such as tree planting, to the detriment of more profitable tasks, such as irrigation development.

Overall, this study presents new understanding of MGNREGA in patriarchal contexts. With good implementation and information sharing systems, the unique economic potential that MGNREGA represents for women, particularly poor and vulnerable women, will be crucial in challenging gender norms and facilitating women's social and economic inclusion. However, monitoring how female labour force is used in the context of gendered labour division is essential to achieving the secondary goal of durable rural development. This is particularly important as unprecedented numbers of women are now engaging in MGNREGA, changing the rural development landscape across India.

REFERENCES

Alesina, A., P. Giuliano and N. Nunn (2011) 'On the Origins of Gender Roles: Women and the Plough', IZA Discussion Paper 5735.

Awashi, P.K., D. Rathi and N.K. Raghuwanshi (2011) 'MGNREGA and its impact on Distress Migration: Some Facts and Emerging Issues', *Agricultural Economic Research Review* 24: 557.

Baker, M. (2005) *The Kuhls Of Kangra: Community-Managed Irrigation in the Western Himalaya.* Seattle: University of Washington Press.

Berg, E., S. Bhattacharyya, R. Durgam and M. Ramachandra (2012) 'Can Rural Public Works Affect Agricultural Wages?' Centre for the Study of African Economies. Working Paper No.5. University of Oxford.

Bhatty, K. (2006) 'Employment Guarantee and Child Rights', *Economics and Political Weekly* 41(20): 1965-67.

Bhatty, K. (2008) 'Falling through the Cracks', *The Hindu*, 16th March.

Cleaver, F. (2001) 'Institutions, Agency and the Limitations of Participatory Approaches to Development', in B. Cooke and U. Kothari (eds.) *Participation: The New Tyranny?* Pp. 36-55. London New York: Zed Books.

DES (2012) 'Directorate of Economics and Statistics of respective State Government, and for All-India', Central statistic Office. http://pib.nic.in/archieve/others/2012/nov/d2012112201.pdf (Accessed 8 February 2013).

Dreze, J. (2006) 'National Employment Guarantee Inaction', *The Hindu*, 12th September.

Dyson, T. and M. Moore (1983) 'On Kinship Structure, Female Autonomy, and Demographic Behavior in India', *Population and Development Review* 9(1): 35-60.

ESDHP, Economics and Statistics Department Himachal Pradesh (2011) 'Brief Facts of Himachal Pradesh, 2010-11'. http://himachal.nic.in/economics/pub.htm (Accessed 10 January 2013).

Ghose, A.K. (2011) 'Addressing the employment challenge: India's MGNREGA'. ILO Working Paper No105. Geneva: International Labour Organization.

Girard (in press) 'Stepping into Formal Politics. Women's Engagement in Formal Political Processes in Irrigation in Rural India', *World Development* (In Press).

Girard (forthcoming) 'Playing by Gendered Institutions. The Emergence and Performance of Female Leaders in Rural India' (forthcoming).

Githens, M. (2003) 'Accounting for Women's Political Involvement: The Perennial Problem of Recruitment', in S.J Carroll (ed.) *Women and American Politics: New Questions, New Directions*, pp. 33-52. Oxford: Oxford University Press.

Haque, T. (2011) 'Socio-Economic Impact of Implementation of Mahatma Gandhi National Rural Employment Guarantee Act in India', *Social Change* 41(3): 445-71.

Harish, B.G, N. Nagaraj, M.G. Chandrakanth, P.S. Srikantha Murthy, P.G. Chengappa, and G. Basavarah (2011) 'Impacts and Implications of MGNREGA on Labour Supply and Income Generation for Agriculture in Central Dry Zone of Karnataka', *Agricultural Economics Research Review* 24: 485-94.

Hirway, I. (2008) 'NREGA: A Component of Full Employment Strategy for India, An Assessment'. Paper presented at International Seminar on National Rural Employment Guarantee Scheme in India, New Delhi (16-17 September).

Holmes, R., N. Sadana and S. Rath (2010) *Gendered risks, poverty and vulnerability in India. Case study of the India Mahatma Gandhi National Rural Employment Act (Madhya Pradesh)*. London: Overseas Development Institute.

Jandu, N. (2008) 'Employment Guarantee and Women's Empowerment in Rural India'. Paper presented to International Seminar on National Rural Employment Guarantee Scheme in India, New Delhi (16-17 September).

Jha, R.R. (2011) 'Impact of MGNREGA on Wage Employment and Income Generation: A Case Study of Darbhanga District in Bihar', *Agricultural Economics Research Review* 24: 557.

Kar, O. (2013) 'Empowerment of Women Through MGNREGS: Issues and Challenges', *Odisha Review* 64(7-8): 76-80.

Kelkar, G. (2011) 'MGNREGA: Change and Continuity in Gender Relations', *Journal or Economic and Social Development* 7(2): 11-24.

Khanna, P. (2010) 'How secure is National Rural Employment Guarantee as a Safety Net', Global Labour University. http://www.global-labour-university.org/fileadmin/GLU_conference_2010/papers/52._How_Secure_is_National_Rural_Emploeyment_Guarantee_as_a_Safety_Net.pdf (Accessed 5 July 2011).

Klonner, S. and C. Oldiges (2012) 'Employment Guarantee and its Welfare Effects in India', University of Heidelberg. http://www.sai.uni-heidelberg.de/wiw/pdf/Klonner,%20Oldiges,%202012.pdf (Accessed 10 January 2013).

Mahr, K. (2012) 'Nice Work if You Can Get It. An ambitious employment plan is testing India's government', *Time* 180(18): 34-9.

Mehrotra, S. (2008) 'NREG Two Years On: Where Do We Go from Here?', *Economic and Political Weekly* 43(31): 27-35.

Narayanan, S. (2008) 'Employment Guarantee, Women's Work and Childcare', *Economic and Political Weekly* 43(9): 10-3.

Oswald, D.L. (2008) 'Gender Stereotypes and Women's Reports of Liking and Ability in Traditionally Masculine and Feminine Occupations', *Psychology of Women Quarterly* 32: 196-203.

Pankaj, A. and R. Tankha (2010) 'Empowerment Effects on the NREGS on Women Workers: A Study in Four States', *Economic and Political Weekly* 45(30): 45-5.

Pai, S. (1987) 'Class, Gender and Agrarian Change: An Analysis of the Status of Female Agricultural Labour in India', *Social Scientist* 15(6): 16-32.

Pellissery, S. and S.K. Jalan (2011) 'Towards transformative social protection: a gendered analysis of the Employment Guarantee Act of India (MGNREGA)', *Gender and Development* 19(2): 283-94.

Raman, J.R. (2011) 'Impact of MGNREGA on Wage Employment and Income Generation: A Case Study of Darbhanda District in Bihar', *Agricultural Economics Research Review* 24: 557.

Roche, E. (2013) 'Jairam Ramesh calls to make rural jobs scheme women friendly', LiveMint. http://www.livemint.com/Politics/d7r8ExP8ujPVn8iFHNEXZK/Jairam-Ramesh-calls-to-make-rural-jobs-scheme-women-friendly.html (Accessed 20 January 2013).

Sen, A. and S. Sengupta (1983) 'Malnutrition of Rural Children and the Sex Bias', *Economic and Political Weekly* 18: 855-63.

Thadathil, M.S. and V. Mohandas (2012) 'Impact of MGNREGS on Labour Supply to Agricultural Sector of Wayanad District in Kerala', *Agricultural Economic Research* 25(1): 151-5.

Tiwari, N. and R. Upadhyay (2012) 'Constraints Faced by the Women Beneficiaries under Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)', *Studies on Home and Community Science* 6(2): 99-102.

Zimmermann, L. (2012) 'Labor Market Impacts of a Large-Scale Public Works Program: Evidence from the Indian Employment Guarantee Scheme', IZA Discussion Paper 6858.

PART VI – CONCLUSION

'If a woman can only succeed by emulating men, I think it is a great loss and not a success. The aim is not only for a woman to succeed, but to keep her womanhood and let her womanhood influence society'

Suzanne Brogger

1. KEY FINDINGS AND POLICY RECOMMENDATIONS

This research offers new perspectives on how policy changes in irrigation can transform gender dynamics in rural India. The decentralisation of irrigation management to gender-balanced local governance institutions and the implementation of MGNREGA with gender quotas empower women to occupy previously inaccessible roles in formal decision making and formal resource management. The purpose of this section is three-fold: a) to briefly summarise the main contributions of each of the four papers, b) to provide a synthesis of the evidence across the four papers, and c) to outline future research directions that emerge from this work.

1.1 Summary of main findings

The key findings of this research are presented below:

Paper I investigated female leaders' political performance in the context of the strategic behaviour theories of Moral Capital and the Patriarchal bargain. When entering the formal political world, female leaders face three main challenges. First, local governance institutions

are embedded in gendered institutions, forged by the socio-economic environment and which determining feminine codes of conduct at all levels of the community. Female leaders are expected to respect these codes of conduct. Second, quotas in local governance result in Indian women being 'precipitated' into local politics, stripping them of legitimate power despite their leadership position. Third, women also face difficulties linked to their position within the household and community. Engaging in political activity challenges the patriarchal bargain. Through qualitative and quantitative evidence, this paper argued that abiding by gendered institutions is a strategy embraced by experienced female leaders to accumulate moral capital and increase their political power, while maintaining their social and economic security in their households. For re-elected leaders, their gained legitimacy as political figures allows them to step away from such political strategy. The paper concluded that female leaders abide by gendered institutions out of self-interest, yet they also secure women's lasting membership in formal politics, a key catalyst in the erosion of oppressive gendered institution.

Paper II questioned female leaders' influence in MGNREGA policy-making, in the context of gendered institutions embedded in the irrigation system of Northern India. For this, the decision-making dynamics and policy-outcomes in reserved and unreserved PRIs were examined against Public Choice models. Female leaders face significant challenges in their policy-maker role. Communal understandings of women's expertise, shaped by the social and agrarian environment, imply that women are not expected to know/act in irrigation management. The rationale behind the gender quota itself is based on expectations that women will bring change to *female* domains, such as children, education and health. As such, using qualitative and quantitative evidence, the paper argued that women do not fundamentally differ from men in their opinion on issues in the panchayats or on how MGNREGA should be used in rural development, but their decisions are shaped by gender specific expectations of knowledge. The paper concluded that, when predicting the effect of women's engagement in PRIs on policy-making, gender norms must then be taken into account. In female-congruent domains, reserved PRIs might conform to a Citizen-Candidate model, where female leaders can shape the

policy outcome. In male domains, the Downsian model might best predict the policy-making, as female leaders might lack legitimacy to influence the decision and instead shape their policy decisions on villagers' expectations.

Paper III assessed women's engagement in formal political processes in irrigation in the context of gender inclusive policies the formalise women as legitimate participants in decision-making and the labour force. Using empirical evidence and field observations, it argued that socialising aspects of the private sphere, such as age, time spent in the village, caste and dependence on irrigation for livelihood are all key determinants of women's political engagement. More importantly, for it is novel knowledge, the institutionalisation of irrigation management to formal local governance institutions and formal labour force also induces greater participation of women in formal politics. Decentralisation to participatory decision-making institutions, together with democratic processes (voting or supporting a candidate) favour women's participation in the formal politics of public asset management. MGNREGA particularly politicises women and bestows them with new formal economic status, greater visibility and mobility, awareness of rights and benefits, significantly increasing their likelihood to attend public meetings and speak out. The paper concluded that policies aimed at legitimizing women as decision-makers and the labour force are key elements in enabling women's engagement in the formal management of irrigation systems.

Paper IV investigated the underlying socio-political contexts that favour women's enrolment in the scheme, and the repercussions of the feminisation of MGNREGA on gender dynamics and rural development. Using qualitative and quantitative data, the paper argued that women's engagement in the labour force is detached from rural development outcomes. Whilst most beneficiaries are farmers who rely on the availability of irrigation water for economic purposes, they do not recognise MGNREGA as valuable for building productive assets to improve agricultural yields. Female MGNREGA workers participate in the scheme because it is a valuable source of income – and the poorest and least educated women are benefiting the most from the scheme. Unlike PRIs, who are more likely to respect gendered institutions, the

economic benefits that incentivise women to engage in MGNREGA also outweigh considerations of gender norms of labour division. The paper concluded that MGNREGA is a key catalyst in eroding gendered institutions and favouring women's engagement as formal labourers in irrigation. However, considering PRIs' reluctance to breach gendered institutions and female workers' detachment from MGNREGA's rural asset development potential, without external control, the increasingly feminine MGNREGA force risk being diverted towards female-appropriate tasks only, to the detriment of irrigation systems.

1.2. Synthesis of the evidence

While this study contributed to knowledge gap on women in irrigation, some key findings can be extrapolated to the broader debate on women in rural development. Indeed, in view of greater climate variability coupled with rising outmigration of men from rural areas, women are increasingly finding themselves in the spotlight of rural development policies. Their role is increasingly important for carrying effective actions aimed at improving the economic growth of agrarian communities.

This research's main implication is that women's formal engagement in rural development depends strongly on their ability to breach gender norms engrained in irrigation systems. Whether women abide or breach gendered institutions depend on socio-political, formal/legal, socio-economic and socio-temporal factors, as reviewed below:

a) **Socio-political factor**. Women's position in the public life determines their likelihood to disturb gender norms and engage in the formal management of irrigation. Female leaders, as public figures, must abide by the communal sense of femininity in order to preserve their socio-economic security in their community/households and maintain their political position in local governance institutions.

b) **Formal/Legal platform**. Policies and processes that formalises women as actors in rural development increase their likelihood to engage in formal political and economic processes. Decentralisation of irrigation management to formal participatory institutions, voting, and

quotas systems in MGNREGA are politicising processes that introduce women in the formal world of decision-making, improve their awareness of rights and benefits, and increase their mobility and visibility, which result in women's greater integration in the formal world of rural development.

c) **Socio-economic factors**. Women who most benefit from engaging in formal processes in irrigation are more likely to breach gendered institutions. Women whose livelihood is dependent on irrigation, who are from poorer households, or who are socio-economically vulnerable such as single women, have economic incentives to outweigh gender norms and engage in formal political processes around irrigation or in formal economic activities such as MGNREGA.

d) **Socio-temporal factors**. Time, in its social and temporal meaning is a key determinant of women's engagement in formal rural development. Socially, older women, whose status in the community facilitates their bypassing of gendered institutions, are more likely to engage as actors of rural development. Temporally, female leaders' likelihood to abide by gender norms depends on their experience. First-time leaders are more likely to abide by gendered institution as they gain experience and learn to secure their socio-economic position and gain political power, however, re-elected women, who have gained legitimacy in their political role, can risk detaching themselves from gendered institutions in their political performance.

1.3. Policy recommendations

Gendered institutions are part of the everyday life of women, whether they are involved in the political world or not, and they determine how women act in the new space created for them in the public domain of formal resource management.

Women's leadership style cannot be judged using male standards. Creating space for women in formal governance does not result in women behaving like men. Women maintain their femininity, which determines how and in what domain they act as leaders. Gender norms are particularly restricting for women in irrigated areas, where the engrained labour division both

strips them of perceived expertise in irrigation management and impedes them from canal maintenance work. While women will readily breach gender norms if they gain economic benefit, the situation is different for female leaders. They embody gendered institutions and their blurry position as women of both the domestic and political world entails that they abide by notions of femininity against typically masculine notions of leadership and natural resource management.

Women's behaviour should not be forcefully changed, as they willingly embrace feminine moral values. What should be transformed, however, are perceptions on women's domain of expertise. Local policy-makers, NGOs, and scholars should not constrain women's power exclusively to the domain of women, welfare, and education, but extend it to all areas of governance. Women are as capable as men at successfully managing irrigation systems in Northern India, but will only do so if expectations of their expertise allow them. Empowering women to successfully act in irrigation development and participate in tackling water scarcity problems and the stagnation of rural economies must occur at the local governance level. I suggest that local policy-makers, NGOs, and scholars begin supporting women's capacity to contribute to all areas of governance, including stereotypically male ones. This can be achieved through government or NGO rural development initiatives that successfully utilise female leaders, and with additional support from continued research on women's efficacy in traditionally male roles.

Additionally, it is clear that women greatly benefit from MGNREGA, and in the near future, the scheme will likely reach unprecedented levels of female involvement, such as in Kerala. In order to better direct this increasingly feminine MGNREGA labour force towards irrigation and overcome engrained labour division restrictions, more careful consideration of the final annual list of MGNREGA projects is needed. I propose that IPH engineers, possibly in conjunction with local kuhl committees, establish priorities for MGNREGA. These priorities should be reflected in a quota system for MGNREGA work to avoid the female labour force being used exclusively for physically easier tasks or stereotypically female ones. If, in addition to policy

discourse stressing women's expertise in all areas of governance, MGNREGA has a quota stipulating that a given percentage of expenditures must be directed towards irrigation development work, female leaders will be fully legitimised in their decision to invest in traditionally masculine domains. The feminised MGNREGA labour force will also be lawfully directed towards irrigation development, despite gender norms.

Overall, the empowerment of female leaders in all areas of governance irrespective of gendered institutions, the feminisation of the MGNREGA labour force and their engagement in all areas of public work, and the increased formal political participation of women in resource management will not only change the dynamics of gender divisions in India but also improve local agrarian economies. Given the stagnation of the agricultural economy in India and the increase in climate induced water scarcity (Singh, et al., 2010), it is critical that women be able to influence and engage in irrigation management.

2. LIMITATIONS AND FUTURE RESEARCH

Whilst this research focuses on the understudied topic of women in irrigation management in patriarchal societies with recent state interventions and gender inclusive policies, the methodology has limitations which raise new questions. This section first reviews these limitations before suggesting future research possibilities, aimed at further reducing knowledge gap on gender and development.

2.1. Limitations

- Looking exclusively at women's opinion progresses significantly the understanding of the impact of gender norms on the integration of women into the public world, but also bears the limitation of ignoring men's point of view.
- Special care was taken during the study to reduce 'outsider' impact – by having only local women work as enumerators. Still, the fact that the research was undertaken by a

white, western woman might have generated preconceived ideas for respondents, resulting in them shaping their responses to what they considered an 'expected answer'

- Another important limitation is the study's logistical restrictions. Due to financial restrictions, this study is only a representation of women's temporal needs and opinions, emerging from specific hydrological conditions – the dry, pre-monsoon season. A longitudinal analysis over the year might have greatly nuanced the outcomes of this research. Similarly, spatial limitation means that the study does not account for varying degrees of, for example, canal spatial distribution or rural connectivity. With more resources, longitudinal data across seasons and watersheds could have provided greater insight over time and space.
- Panchayats' existing infrastructure was not accounted for in this study. No real quantitative data exist on the infrastructure conditions in panchayats (only MGNREGA data on what infrastructures have been built), although such information could have greatly influenced the outcomes on policy-making, women's political engagement, or women's enrolment in MGNREGA. For example, although road infrastructures are largely well developed in the Kangra District, not all villages are equally connected. Lack of rural connectivity can account for a reduced likelihood in political participation for women whilst also explaining increased investments in road assets by local PRIs.
- The Delhi survey was opportunistic and undertaken without enumerators. Because it was self-completed, it was difficult to ensure that respondents did not influence one another, especially as most women remained in tight groups (usually because they originated from the same region/area). In addition, the questionnaire design restricted the data to Hindi-speaking, literate women only.
- Looking at PRI members' opinion within the governance institutions brought valuable understanding of the decision-making process dynamics, but the study was limited by sample size. A larger study encompassing more PRIs would expand the comprehension of gender subtleties within PRIs.

- Logistic regression models were used in this study because they allowed for the prediction of categorical (binary) variables using multiple categorical and continuous variables. However, such analysis does not account for varying scales in the described variables. For instance, the involvement of women in MGNREGA is assessed in terms of engagement or not, but not for how much they engage in the scheme. Similarly the study examined women's physical and oral participation in formal politics in terms of presence or absence and spoken contribution or silence, but additional knowledge could be gained from knowing the frequency of physical and oral participation.

2.2. Future research

Findings and limitation in this research give ground to possible future research, including:

- A comparative study on the repercussions of state interventions in irrigation for both men and women should be carried out to validate or nuance the present findings emerging from a female-only household survey.
- Future focus on the kuhl management should include new actors in the empirical analysis, such as the kuhl committee, whose role is becoming increasingly important in the kuhl landscape, or local NGOs. This would enable the further exploration of the political economy of irrigation development.
- A longitudinal study would permit the assessment of the impacts of female leaders and MGNREGA on irrigation development over time. I would suggest returning to the same panchayats every year before the selection of the MGNREGA annual lists and analysing over time the different assets chosen with respect to the PRI members' preference and the gender composition of MGNREGA labour.
- The impact of MGNREGA on the politicisation of women in patriarchal communities could be compared to other areas, like South India, where local gender norms are not as restrictive (Dyson and Moore, 1983; Sen and Sengupta, 1983), in order to discuss the

present findings that gender inclusive policies in decentralisation can weaken gender norms and facilitate women's engagement in formal politics.

- Present questions over the repercussions of increasing feminisation of MGNREGA can be addressed by comparatively looking at areas where the total share of women in the scheme is high such as in Rajasthan or Kerala, or low, such as Kashmir.
- Finally, MGNREGA in itself is a topic worth exploring, specifically with regard to issues over the allocation of funds towards the construction of durable and high quality irrigation systems. I suggest that future research examine existing literature on payment by result and reward for good performance and investigate how such mechanisms could be applied to MGNREGA and irrigation canals.

REFERENCES

Dyson, T. and M. Moore (1983) 'On Kinship Structure, Female Autonomy, and Demographic Behavior in India'. *Population and Development Review* 9(1): 35-60.

Sen, A. and S. Sengupta (1983) 'Malnutrition of Rural Children and the Sex Bias' *Economic and Political Weekly* 18: 855-63.

Singh, V.S., Pandey, D.N., Gupta, A.K. & Ravindranath, N.H. (2010). Climate Change Impacts, Mitigation and Adaptation: Science for Generating Policy Options in Rajasthan, India. Rajasthan State Polution Control Board Occasional Paper no 2.

APPENDIX

1. QUESTIONNAIRES

1.1. Household questionnaire (Palampur survey)

Household Survey: Questionnaire for Female Member

Date:
Time:
Enumerator's name:
Panchayat's name:
Village's name:
Household number:

CONSENT STATEMENT

We would like to interview you, as a female member of your household, about your role in agriculture and irrigation.
This study is conducted by the University of Oxford as part of a PhD Research carried by Ms A. M. Girard.
We are asking

☐ I agree to be interviewed

Initials of interviewee:

If you would like more details about this research or any other issue, you can contact the researcher at the following number: xxxxxxxx

SECTION 1 - Household description

Q.1) Please describe your household (number includes respondent):

Household Members	Number in the household
1. Adult Women	
2. Adult Men	
3. Schooled children	
4. Unschooled children	
5. Cattle (cows, etc)	

SECTION 2 - Interviewee's description

Q.2) Age:

Q.3) Marital status:

1. Married
2. Single
3. Widowed
4. Divorced/separated
5. Other

Q.4) Religion:

1. Hindu
2. Muslim
3. Christian
4. Sikh
5. Buddhist
6. Jain
7. Other (please specify)

Q.5) Do you belong to:

1. Scheduled Castes (S.C)
2. Scheduled Tribes (S.T.)
3. General Caste
4. Other Background Caste (O.B.C.)

Q.6) Literacy status:

1. Illiterate
2. Literate

Q.7) Highest education level attained (for diploma or degree holder also write the subject of specialisation):

Q.8) What is your main income generating activity?

1. Cultivator
2. Agricultural labourer
3. Worker in Household Industry
4. Other work (please specify)

Q.9) What is the profession of the head of the household?

Q.10) How long have you lived in this village (years)?

1. Less than 1 year
2. Between 1 to 5 years
3. Between 5 to 10 years
4. More than 10 years
5. Originates from the village

Q.11) (If from a different village) Was the village you lived in before part of:

1. Changar
2. Palam
3. Dhar
4. Other

Q.12) (If from a different village) Was that village:

1. Irrigated by kuhls
2. Partially irrigated by kuhls
3. Not irrigated by kuhls
4. Not irrigated at all
5. Irrigated by other sources of irrigation

Q.13) What were the main reasons for you to move into this village (tick all appropriate answers and circle the main reason)?

1. Marriage
2. Work/Employment
3. Land Purchase
4. Cultivation of rented land
5. Access to kuhl water
6. Other (please specify)

Q.14) Is anyone in your family or your close relatives a (tick all appropriate answers):

1. Pradhan
2. PRI member
3. Kolhi
4. Kuhl Committee Member
5. IPH Employee

SECTION 3 - Agriculture

Q.15) How much land under cultivation/plantation does your household own (kanals)?

Q.16) Does your household rent any land for cultivation/plantation? If yes how much (kanals)?

1. Yes / No
2. Land Rented:

Q.17) (If any land is rented) How much do you pay for renting the fields per year?

Q.18) What do you grow? How many kanals? Is it irrigated? Do you sell it on the market?

Crop type	Area (kanals)	Irrigated? (Y/N)	Sold on the market? (Y/N)
1. Wheat			
2. Paddy			
3. Cash crops			
4. Fodder crops			
5. Other (please specify)			

Q.19) (If any crop is sold on the market) Who sells the products on the market?

Q.20) (If any crop is sold on the market) On average, how much do you earn from selling your crops per month?

Q.21) On avergage, how much time do you spend in the field (hours/day) during:

Season	Time (hours/day)
1. Rabbi	
2. Kharif	
3. In between seasons	

Q.22) What sort of labour do you do in the field?

Q.23) Do you work in someone else's field as labour?

1. Yes
2. No

Q.24) If yes, how many days per week do you work in other's field during?

Season	Time (hours/day)
1. Rabbi	
2. Kharif	
3. In between seasons	

Q.25) Are you being paid for it? How? How much?

1. Yes / No
2. How?
3. How much?

Q.26) Does your household hire someone to work in your fields?

1. Yes
2. No

Q.27) If yes, how many people?

Q.28) Do you pay them? How? How much?

1. How?
2. How much?

Q.29) Are you involved in any other income generating activity? (husbandry, craft making, etc)

1. Husbandry
2. Craft making
3. Dairy production
4. Other (please specify)

Q.30) On average, what is your total expenditure in a month (Rs):

Q.31) Of this, how much do you spend per month on:

1. Food
2. Agriculture purchase (seeds, fertilizers, etc)
4. Children (school, clothes, etc)
3. Other main source of expenditure (please specify)

SECTION 4 - Irrigation

Q.32) How many kuhls/drainage lines irrigate your fields?

Q.33) When do you usually receive the water in your fields?

1. Always during daytime
2. Mostly during daytime
3. Equally distributed between day and night
4. Mostly at night
5. Always at night
6. Never

Q.34) Who guards the fields and supervises during irrigation?

1. Respondent
2. Other female household members
3. Other male household members
4. No one

Q.35) How and how much do you pay to receive water from the kuhl?

1. Money i)
2. Share of crops ii)
3. Labour (participation) iii)
4. Other (please specify)

Q.36) Are your fields irrigated by any other source than the kuhls? If yes please specify.

Q. 37) (If any other source of irrigation in used) How and how much do you pay per month for this source of water?

1. Money i)
2. Share of crops ii)
3. Labour (participation) iii)

Q.38) Who would you go see if you were to ask for more water, report a breach, or make a complaint? (Tick as appropriate)

1. Executive Engineer of IPH	
2. Kohli	
3. Female PRI's member	
4. Male PRI's member	
5. Parthan	
6. Female member of the kuhl committee	
7. Male member of the kuhl committee	
8. Male member of your household	
9. Other (please specify)	
10. I am not the one dealing with demands and complaints	

Q.39) Do you contribute to the maintenance of any of the following irrigation assets? If yes, how often? For how long?

Asset	Frequency (number of time per year)	Time spent each time (days)
1. Main kuhl outside the village		
2. Main kuhl inside the village		
3. Drainage lines outside of your field		
4. Drainage line within your field		
5. Head of the kuhl (inlet reinforcement)		
6. Reservoirs outside your fields		
7. Reservoir within your fields		

Q.40) Are you being helped by anyone else in the maintenance of the drainage lines in your fields? If yes, who is helping you?

1. Other female member from your household
2. Other male member from your household
3. Other female villagers
4. Other male villagers
5. Other (please specify)
6. No one

Q.41) Do you reward them for their labour? If yes, how?

Q.42) Overall, would you say that you receive enough water for your crops?

1. Yes
2. No

Q.43) If not, why not?

Q.44) Do you feel this could be resolved with better management of the kuhls?

1. Yes
2. No

Q.45) Who should do it?

Q.46) Would women be more effective than men at maintaining the kuhls and distributing the water in the fields? Why?

SECTION 5 - MGNREGA

Q.47) Are you currently registered under MGNREGA?

1. Yes
2. No

Q.48) Is anyone else in your household registered under MGNREGA? Please list.

1
2
3
4
5
6

Q. 49) (If someone else is registered under MGNREGA) Who in your household works longer hours under MGNREGA?

1. Respondent
2. Other household member (please give number from the list above)
3. All members work an equal number of hours

Q.50) Do you get paid on:

1. Own account
2. Shared account with husband

Q.51) In your opinion, what are the two most problematic issues in the community? What are the two least problematic ones? (Put 1 and 2 for most problematic and 3 and 4 for least problematic)

1. Inadequate road structure	
2. Inadequate maintenance of kuhls and drainage lines	
3. Insufficient amount of irrigation facilities	
4. Insufficient protection against floods	
5. Insufficient amount of water storages (small reservoir, ponds)	
6. Inadequate maintenance of existing water storages	
7. Increased deforestation	
8. Other (please specify)	

Q.52) In your opinion, what works should MGNREGA be doing in priority (2 choices)? And what work should it be doing last (2 choices)? (Put 1 and 2 for work with most priority and 3 and 4 for least priority)

1. Development of rural road connections	
2. Renovation of existing kuhls and drainage lines	
3. Construction of new kuhls and drainage lines	
4. Flood control and protection work	
5. Construction of new reservoirs and ponds	
6. Renovation of traditional water reservoirs (desilting of ponds and tanks)	
7. Tree plantation	
8. Other (please specify)	

Q.53) Do you think men and women should be doing the same kind of work under MGNREGA?

1. Yes
2. No
3. No opinion

Q.54) If not, who should do the following MGNREGA work:

	1. Men only	2. Women only	3. Both men and women
1. Working on road construction			
2. Cleaning and clearing kuhls of detritus and brushwood			
3. Digging new kuhls and drainage lines			
4. Constructing bunds and drainage systems against floods			
5. Digging new reservoirs and ponds			
6. Desilting and rehabilitating traditional reservoirs and ponds			
7. Planting trees for afforestation			

SECTION 6 - PRI

Q.55) Did you vote for PRIs elections?

1. Yes
2. No

Q.56) If yes, how significant were the following factors for choosing your candidate?

Factor	1. Significant	2. Quite significant	3. Not significant
1. Sex of the candidates			
2. Religion of the candidates			
3. Caste of the candidates			
4. Social class of the candidate			
5. Wealth			
6. Social connection (relative, close friend, etc)			
7. Opinion of the men in the household			

Q.57) Did you vote for the current political figures?

Political figure	1. Yes	2. No	3. Will not say
1. Pradhan			
2. Vice Pradhan			
3. PRI member			

Q. 58) Did you attend any Gram Sabhas last year? If yes, how many did you attend?

1. Yes Number:
2. No

Q.59) (If you attended at least one meeting) During a meeting, do you:

1. Actively participate
2. Speak only sometimes
3. Never speak

1.2. PRI questionnaire (Palampur survey)

PRI Survey

Date:

Time:

Enumerator's name:

Panchayat's name:

Village's name:

Household number:

CONSENT STATEMENT

We would like to interview you and other members of the PRI about your role in agriculture and irrigation decision-making.
The study is conducted by the University of Oxford as part of a PhD Research carried by Ms A. M. Girard.
We are asking many PRIs' members all over the tehsil of Palampur to participate in this same interview.
The interview is voluntary. During our visit, we would like to ask you about various aspects of your involvement in agriculture work, irrigation management and MGNREGA.
In addition, we will also ask you to provide us with details about you involvement with PRIs.
If you choose not to reply any of the questions in this questionnaire, you are free to do so.
If you decide to answer some or all of the questions, we will use the information you give us only for the purpose of research.
People will be able to learn about the role of PRIs members of the Kangra Valley in irrigation management, but not what you personally said.

Do you agree to be interviewed?

☐ I agree to be interviewed

Initials of interviewee:

If you would like more details about this research or any other issue, you can contact the researcher at the following number: xxxxxxxx

---

SECTION 1 - Household description

Q.1) Please describe your household (number includes respondent):

Household Members	Number in the household
1. Adult Women	
2. Adult Men	
3. Schooled children	
4. Unschooled children	
5. Cattle (cows, etc)	

SECTION 2 - Interviewee's description

Q.2) Age:

Q.3) Marital status:

1. Single
2. Married
3. Widowed
4. Divorced/separated
5. Other

Q.4) Religion:

1. Hindu
2. Muslim
3. Christian
4. Sikh
5. Buddhist
6. Jain
7. Other (please specify)

Q.5) Do you belong to:

1. Scheduled Castes (S.C)
2. Scheduled Tribes (S.T.)
3. General Caste
4. Other Background Caste (O.B.C.)

Q.6) Literacy status:

1. Literate
2. Illiterate

Q.7) Highest education level attained (for diploma or degree holder also write the subject of specialisation):

Q.8) What is your main income generating activity?

1. Cultivator
2. Agricultural labourer
3. Worker in Household Industry
4. Other work (please specify)

Q.9) What is the profession of the head of the household?

Q.10) How long have you lived in this village (years)?

1. Less than 1 year
2. Between 1 to 5 years
3. Between 5 to 10 years
4. More than 10 years
5. Originates from the village

Q.11) (If from a different village) Was the village you lived in before part of:

1. Changar
2. Palam
3. Dhar
4. Other

Q.12) (If from a different village) Was that village:

1. Irrigated by kuhls
2. Partially irrigated by kuhls
3. Not irrigated by kuhls
4. Not irrigated at all
5. Irrigated by other sources of irrigation

Q.13) What were the main reasons for you to move into this village (tick all appropriate answers and circle the main reason)?

1. Marriage
2. Work/Employment
3. Land Purchase
4. Cultivation of rented land
5. Access to kuhl water
6. Other (please specify)

Q.14) Is anyone in your family or your close relatives a (tick all appropriate answers):

1. Pradhan
2. PRI member
3. Kolhi
4. Kuhl Committee Member
5. IPH Employee

SECTION 3 - Being a PRI member

Q. 15) Are you a:

1. Male Pradhan
2. Female Pradhan
3. Male PRI member
4. Female PRI member

Q.16) How long have you been a PRI member for?

Years: Months:

Q.17) How many PRI meetings do you attend on an average month?

Q.18) By what mean do you get to the PRIs meeting place (please tick as appropriate)?

1. On foot
2. Bicycle
3. Moped/Scooter/Motor cycle
4. Car/Jeep/Van
5. Tempo/Autorickshaw/Taxi
6. Bus
7. Train
8. Other (please specify)

Q. 19) How much time does travelling to the PRIs meeting place take you?

Q.20) Who accompanies you to go to the PRIs meetings?

1. Male relative (husband, father, brother, etc)
2. Female relative (Mother, sister, sister in law, etc)
3. Male PRI member
4. Female PRI member
5. Male villager (neighbor)
6. Female villager (neighbor)
7. Other (please specify)
8. Not accompanied (goes alone)

Q.21) Roughly, how much time do you spend on PRI's duty in a week, *excluding* travel time (preparation for PRIs meetings, duration of meeting, etc.)

Q.22) Did anyone ever deputize for you? If yes, who did?

1. No one ever deputized
2. Pradhan from other PRI
3. Male PRI member
4. Female PRI member
5. Male family member
6. Female family member
7. Other (please specify)

Q. 23) (If someone deputized for you) What was the reason for you to deputize?

1. Other family commitment
2. Other work commitment
3. The chosen deputy was more competent in dealing with some issues raised during the meeting
4. Other (please specify)

Q.24) During a meeting, do you:

1. Actively participate
2. Speak only sometimes
3. Never speak

Q.25) What was your main motivation to become a PRI member/Pradhan?

Q.26) How significant were the following reasons for you to become a PRI member/Pradhan?

	1. Significant	2. Quite significant	3. Not Significant
1. Personal prestige			
2. Wanted to bring changes to the panchayat			
3. Gives more power within the community			
4. Gives more power and authority on other PRI members			
5. Pressure from your relatives			
6. Had extra time			
7. Get financial benefit from it			
8. Other (please specify)			

Q.27) Did the members of your household support you in your endeavour to be a PRI member/Pradhan?

1. Very supportive
2. Quite supportive
3. Not supportive

SECTION 4 - MGNREGA

Q.28) Are you currently registered under MGNREGA?

1. Yes
2. No

Q.29) Is anyone else in your household registered under MGNREGA? Please list.

1
2
3
4
5
6

Q. 30) (If someone else is registered under MGNREGA) Who in your household works longer hours under MGNREGA?

1. Respondent
2. Other household member (please give number from the list above)
3. All members work an equal number of hours

Q.31) Do you get paid on:

1. Own account
2. Shared account with husband

Q.32) In your opinion, what are the two most problematic issues in the community? What are the two least problematic ones? (Put 1 and 2 for most problematic and 3 and 4 for least problematic)

1. Inadequate road structure	
2. Inadequate maintenance of kuhls and drainage lines	
3. Insufficient amount of irrigation facilities	
4. Insufficient protection against floods	
5. Insufficient amount of water storages (small reservoir, ponds)	
6. Inadequate maintenance of existing water storages	
7. Increased deforestation	
8. Other (please specify)	

Q.33) In your opinion, what works should MGNREGA be doing in priority (2 choices)? And what work should it be doing last (2 choices)? (Put 1 and 2 for work with most priority and 3 and 4 for least priority)

1. Development of rural road connections	
2. Renovation of existing kuhls and drainage lines	
3. Construction of new kuhls and drainage lines	
4. Flood control and protection work	
5. Construction of new reservoirs and ponds	
6. Renovation of traditional water reservoirs (desilting of ponds and tanks)	
7. Tree plantation	
8. Other (please specify)	

Q.34) Do you think men and women should be doing the same kind of work under MGNREGA?

1. Yes
2. No
3. No opinion

Q.35) If not, who should do the following MGNREGA work:

	1. Men only	2. Women only	3. Both men and women
1. Working on road construction			
2. Cleaning and clearing kuhls of detritus and brushwood			
3. Digging new kuhls and drainage lines			
4. Constructing bunds and drainage systems against floods			
5. Digging new reservoirs and ponds			
6. Desilting and rehabilitating traditional reservoirs and ponds			
7. Planting trees for afforestation			

1.3. Female PRI member questionnaire (Delhi survey)

Women and Irrigation in India

Women and Water Seminar, Delhi, 25th-26th April 2011

Aim – to evaluate the involvement of rural women in the management and running of irrigation systems, as understood by Panchayat Raj Institute (PRI) female members in India.

Objectives – to evaluate gendered labour allocation according to geographic, technocratic and technologic factors.

This exercise is voluntary, anonymous and important in helping to understand the role women play in irrigation systems all across India. We will intend to present the results of the survey by the end of the seminar. We do not want to know your name but would like some general information about your background so we can understand how different perspectives shape the debate. All data are confidential.

1. How long have you been a PRI member for?
   Years: _____ Months: _____

2. Roughly, how much time do you spend on PRI's duty in a week (preparation for PRIs meetings, duration of meeting, traveling to PRI meeting place, etc.)?
   _____ Hours

3. How often is a male member of your family/ male relative present at the PRI meetings? *(tick one only)*

1. Always	
2. Often	
3. Sometimes	
4. Rarely	
5. Never	

4. How often do you discuss PRI matters with a male member of your family/ male relative? *(tick one only)*

1. Always	
2. Often	
3. Sometimes	
4. Rarely	
5. Never	

5. How significant were the following reasons for you to become a PRI member? *(tick one only for each reason)*

	1. Significant	2. Quite significant	3. Not Significant
1. Personal prestige			
2. Wanted to bring changes to the panchayat			
3. Gives more power within the community			
4. Gives more power and authority on other PRI members			
5. Pressure from your relatives			
6. Had extra time			
7. Get financial benefit from it			
8. Other (please specify)			

As representatives of so many distinct geographical areas in India, we would now like to ask details about your specific region of expertise, and more specifically about your knowledge about irrigation practises and your views on the role of women in irrigation.

6. In what geographical division of India is your panchayat located? *(tick one only)*

1. Northern mountains	
2. Indo-Gangetic plains	
3. Thar desert	
4. Central Highland & Deccan plateau	
5. East & West Coastal plains	
6. Island	

7. What are the main sources of irrigation in your panchayat? *(tick one only)*

1. Water from rivers and streams diverted into irrigation canals	
2. Water from rivers and stream manually transported to fields (carrying water)	
3. Groundwater pumped by wells	
4. Floodwater harvested and diverted into field (spate irrigation)	
5. Rainwater harvested into storages for distribution through canals	
6. Rainwater harvested into storages for manual distribution (carrying water)	
7. No irrigation/ rainfed	
8. Other	

8. How would you define the involvement of women in the decision-making of irrigation practices in your area? *(tick one only)*

1. Highly involved	
2. Quite involved	
3. Not involved	
4. Don't know	
5. Not applicable (no irrigation)	

9. How would you define the involvement of women in the maintenance of irrigation systems in your area *(tick one only)*

1. Highly involved	
2. Quite involved	
3. Not involved	
4. Don't know	
5. Not applicable (no irrigation)	

The Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) is aimed at providing a basic employment guarantee in rural areas. It is a demand-based scheme which empowers PRIs to select and fund work to be undertaken. The Act prioritises work aimed at developing rural connectivity, improving water services for irrigation and developing land for flood protection and erosion reduction. Around 50 percent of rural women are engaged in MGNREGA.

10. In your opinion, what works should MGNREGA be doing in priority? *(Rank the proposed work from 1 to 8, 1 being the work to be done in priority and 8 being the work to be done last)*

1. Development of rural road connections	
2. Renovation of existing kuhls and drainage lines	
3. Construction of new kuhls and drainage lines	
4. Flood control and protection work	
5. Construction of new reservoirs and ponds	
6. Renovation of traditional water reservoirs (desilting of ponds and tanks)	
7. Tree plantation	
8. Other (please specify)	

11. In your opinion, should men and women do the same type of work under MGNREGA *(tick one only)*

1. Yes	
2. No	
3. No opinion	

11. If no, please give your opinion on who should be doing each of the proposed work under MGNREGA *(tick one only for each work)*

	1. Men only	2.Women only	3. Both genders
1. Working on road construction			
2. Cleaning, desilting and clearing irrigation systems of detritus and brushwood			
3. Digging new irrigation systems			
4. Constructing bunds and drainage systems against floods			
5. Planting trees for moisture conservation and against erosion			

12. Any other comments? Please write them here:

Thank you! Please hand-in your sheet and we will intend to present collective findings at the end of the seminar.

2. FOCUS GROUPS

2.1. Summary visit panchayat 1 (Palam) – irrigated

Date: 30th of November 2010.
Name: Badsar
Villages: Ardoh, Badsar, Dayala, Khanti, Kudan (Not under irrigation scheme), Ban, Dehli, Bag Uperla (not under irrigation scheme) (Total: 8)
Block: Bhawarna
Type: Irrigated area

Beneficiary of World Bank sponsored IWDP. Mid-Hill project. Implemented by Forest Conservation Department.

Who was present at the meeting?
Women of different villages, all part of the panchayat. The head is a woman.

Project tools:
Renovation of upper part of kuhls. Cementation of canals. Construction of water tank for gravity flow irrigation.

The project was explained to them during Gram Panchayat meetings where at least one person from every household had to attend. It was then left to them to decide whether they wanted to implement it or not, and how much they wanted to participate financially. They decided between themselves what percentage of the total project they wanted to contribute, and also how much they wanted to give every month for the maintenance of it.

Women explained that the kuhls outside their village were maintained by the PRI and by NREGA. The part of the canal in their village was left for them to maintain. They mentioned that in the village it was maintained by both gender, but women were responsible for the kuhls' maintenance inside their fields. They said it did not need that much work, as most of the maintenance work needs being done upstream. They mentioned the flow was better now that the canals had been cemented. They also mentioned that due to the fact that it was a gravity fed system, the financial contribution for maintenance was very little (about 10Rs per month).

Location
Most villages are close to the road. Not far from Dharamsala. Some villages are further away and more difficult to access. The road is of good quality and covered with tarmac.

Agriculture practises
Land tenure: Most villagers have 2-3 kanals. Land is dispersed and some fields are far away from the villagers' home.

Villagers used to farm mainly wheat and paddy. They have now changed part of their crops to cash crops (mainly potatoes). Only the land close to their home has been converted. Land located further away has remained for paddy and wheat, for own consumption.

Women said that they did not convert the other land because they still rely on paddy and wheat crops for their basic food. In addition they said that wildlife interference has increased and wild animals destroy the crops.

Women also mentioned the change in market now based on cash. Before, the harvest used to be stored for the year's use. Now with the cash market, women need cash in order to survive. Vegetables are the best crops for this purpose, which is what motivated them to switch part of their land for cash crops.

Labour and market
Women were definite about the fact that they had a lot more work than they had before. Cash crops require more time spent in the fields.

Women did most of the work in the fields, and left the selling side of their crops to their husbands. However they were the one deciding on the price at which it should be sold. They say they have a better idea than men about the value of products on the market as they are the one buying the food. In case where there was no man in the household (widow or husband away), women have organised for someone to come to their house and buy their product. That man will then sell if on the market for a profit.

Problems with wildlife have been something that has been mentioned a lot by women. They say that because of government action to protect and increase their habitat, the population of monkeys and other wild animals has increased and they are now often destroying their crops. Women say they can protect their crops in the villages, but for the fields further away there is nothing they can do about it.

Women also mentioned that their main activity was agriculture, however their main source of income was MNREGA or other livelihood activities.

For MNREGA, women had to engage in labour intensive work. Women mentioned that they tried not to engage with MNREGA as they found the work was to intensive and they preferred to find other ways of generating income. Some women had developed a dairy production business, which was very prolific and expanded.

Women who originally did not want to engage in this project joined after seeing the generated income.

In general, women had mixed feelings about MNREGA. They found that it helped maintain the kuhls as well as forests for fodder and fuel production. However, they also mentioned that because of MNREGA there was an increased lack of labour. Women now had problems to find labour to work in their fields. As such they had to do a lot more things by themselves.

Finding labour was also a problem due to the fact that people had become richer and as such refused to work in other people's fields due to a question of pride.

Some activities which they had learnt from the project did not necessarily have the expected outcomes. For example, women were taught to make handicrafts such as shawls. They found however that they were not taught long enough, and enough techniques. As such their products were too simple. In addition, they kept waving them for their relatives and gave them away for free. No real income from this activity.

Overall women said they had to work a lot more than before.

Understanding of the environment
Women were aware of their environment. They mentioned that the snow cover had decreased importantly. The top of the mountains used to be always white whereas now only scarce, dispatched patches of snow are visible.

They also mentioned that in their opinion kuhls are now not sufficient to harvest water for irrigation as the overall runoff decreases importantly. Other schemes, such as tanks to harvest runoffs have now become essential and will have even greater importance in the near future.

Role of women
Women were clear about the fact that they do a lot more work than men and that their households and villages run thank to them. They said they sometimes had to convince their husbands about the necessity of a project, as they are more aware of the needs of their households and villages. Despite the fact that men handle the cash, their role is determinant in the well-functioning of the village and household.

Women also thought that the jealous character of women pushed them to do better. For example, the fact that some women were successful in creating a dairy business made others jealous and pushed them to engage in the same project too.

Women also thought they were quicker to learn than men. They can be very entrepreneurial. For example, one woman started learning IT and now uses it to monitor her milk production.

Women also said they were the most active in their panchayat.

In addition, women have a good understanding of their environment as a whole. They realised the complexity of their environment, such as the link between forest preservation, water availability, labour issues and wildlife.

Women realised they were working more, but also were aware of their physical limitations. Some mentioned that they felt weaker and did not know if this was due to an increase in labour or the effect of maternity with inadequate nutrition.

Women were also very keen on having educated kids. The law now requires every child to go to school, but women were keen on sending them to good schools and were ready to pay a bit more for them to be better educated. They mentioned however that most children were attracted by off-farm jobs.

2.2. Summary visit panchayat 2 (Changar) – rainfed

Date: 1st of December 2010.
Name: Usted
Villages: Bharhun, Kenth Lahr, Ustehr, Thamba, Panjlehr, Gadiara, Ghora, Ludret, Haldwari and Kali Jan (Total: 10)
Block: Nagrota Bagwan
Type: Rainfed area

Beneficiary of World Bank sponsored IWDP. Mid-Hill project. Implemented by Forest Conservation Department.

Who was present at the meeting?
Women of one village, with one man (head of household). All members of the user group.

Project tools
The road was first built 40 years ago, then covered with tarmac about 8 years ago. In addition, the project consisted in a water harvesting project. An underground tank was created by the nala, with infiltration system. Water from the tank is then pumped with a motor to two different pumps (one serving 15 families, and the other one serving 45 and 32 families), from where it is distributed to villages. The nala is not diverted and as such does not create issues for downstream users. Each village possesses 13 removable pipes which they use to attach to the main pipeline and distribute it to their fields (according to a rotor system).

Because of the distance between each village, the panchayat has created a pipe member committee composed of one men from each hamlet (basti) who decides on the management and distribution of water.

Women created a self-help group for loan giving. They participate a given amount of money, and with that money they purchase whatever crop they have decided together to sow. They buy the crops of the organisation who sells it to them 25% cheaper than market price.

It appears that despite all households having contributed to the scheme, not all are benefiting (Only 13 families use the water in the 15 family hamlet, 20-30 in the 45 families basti and 15-20 in the 32 families one).

Users have used the water for crop diversification. Non-users also use it in case of water scarcity. Mostly families that did not diversify consist of better-off families who do not cultivate their land for income anymore).

Money contributed monthly also goes towards paying the motor operator. Women said that they did not have to replace the motor yet, but once had to contribute 10,000Rs to repair it.

Location
The villages are very scattered. Some are located by the road, others are further away.

Agricultural practices
Before, agriculture used to be mainly mustard and wheat. Crop success was dependent on rainfall. With the new project, which provides villagers with irrigation water, they still grow wheat, but less than before, barley, pulse (which has re-appeared with irrigation as it had been left before), and cash crops such as cauliflowers.

With irrigation they do not need to wait for rain events to sow their fields and organise the sowing when they want.

Now about 20 kanals are for cauliflowers, 15 for radish, turnip, and about 20 for grass for animals. In addition villagers are also growing 'bursin' which is a crop that requires to be waterlogged during sowing (only possible with irrigation).

Out of 20 ha about 4 to 5 have been converted into cash-crops. The limited land tenure means that no more can be converted.

Still growing wheat, maize, mustard and spinach.

Fields further away are often attacked by wildlife and as such they cannot switch this land for cash crops.

Labour and market
Cash crops are now being sold to the nearby market. Agriculture work is done by women.

Men are now mainly working away, in private sector or doing other businesses (shops).

Honey cultivation is also an activity that provides them with some income. The honey is sold at 200Rs/kg, and about 7-10kg is produced per year.

The villagers reported that with irrigation and the change to cash crops, their income had increased which brought them to create a self-help group. They all contribute 50Rs per month, which they use for giving loans. They also use that money to invest in some capital. For example, the villagers explained that they used to hire large utensils when cooking for functions (wedding, birthday, anniversary, etc.). With the self-help system, they invested in their own cooking utensils, which they share and as such avoid having to rent them.

In addition, they also use the contribution to transport farming material to their land situated further away from their homes. This has only been possible with the apparition of the road. Beforehand women used to carry the material and fertilizers over long distances. Now they can hire a car for 100Rs.

Women said they preferred to work at home or in the fields around their homes. They did not get involved with MNREGA as they thought they had enough work with their own culture and in any case, MNREGA would not provide enough work. They felt that they cultivated and sold enough to not have to be involved with MNREGA.

Irrigation has allowed them to grow grass for cattle. As such the cattle management has changed. Instead of leaving the animals to grass freely, they now keep them inside. By the sort they also protect their newly converted land to cash crops, which in any ways has been enclosed. Having high value crops bring women to think that they would not now want to run after the cattle as they have to remain by their fields in order to protect their cash crops against monkeys. Enclosing the cattle has also taken away some burden for the children. They do not have to run after the animals anymore and do not take any leave from their private school. Keeping the cattle inside also allows the family to move more freely as they can ask a neighbour to feed the animals in case they are absent.

In fact, families have also created some other arrangements related to husbandry. While in the past each family possessed 2 bulls for breeding the cows, they have now arranged for another family to keep a bull. By the sort they only need to feed one bull (they consume a lot of food) and can "lend" each other's bulls for breeding.

Women are the one responsible for the agriculture work as well as cutting the grass in order to feed the animals. They do not feel that the later gives them more burden as they say that in any case they would have had to spend time running after the animals.

Understanding the environment
Women said that the level of the nala flow has reduced importantly. However, when asked whether they thought it could dry out, they said that it would not. They saw it reducing now, but they believed it would never disappear.

They however mentioned that rain patterns had changed and that rain events became each time more unpredictable. For example, they mentioned the fact that for this period winter was unusually mild and dry.

Role of women
In this panchayat, the women were the first one to be approached about the project. Initially, because of the scattered location of villages, women were not keen on leaving their houses. However they were the first one to understand the possibilities of such scheme and created by themselves a self-help group.

Women, together with men, were responsible for managing conflicts and come to an agreement regarding the proposed scheme. The Panchayat was then left alone. The trigger that brought women to implement the scheme by starting the self-help group was when the IPH proposed to tap the water for downstream users. Women felt they had to protect "their" water and started the scheme. Since then it has been entirely self-running, mainly by women (apart from the pipe-member committee, run mainly by men).

Women were aware to the needs of their next generation. They mentioned that next generations were now not willing to get involved in on-farm jobs and that anyways their land-tenure was too small for their sons to really live on agriculture.

Women however, and specifically daughters can play an important role in water management. It is the daughters who moves out of her family to live with her in-laws. In the panchayat, one young woman mentioned how she was very unhappy at first, coming from an irrigated area, to arrive in a rain-fed area. When asked whether they would be willing to marry their daughter to a man living in a water-scarce region where such water harvesting has not been done like in their panchayat, women said that it did not matter, as long as the man was a good one. Belief that anyways couples are created by God, with or without water!

Women mentioned that they believed that their daughters could however bring new practices. They could not bring new technologies as they did not necessarily understand them but they understood the benefits of some new practices. For example, one women said that her daughter had gone to an irrigated area managed by IHP and therefore they were not dependent on the flow.

As such she learnt to harvest that water when the kuhls were running with water, and she also brought with her the kitchen garden technique she had learnt from her home.

2.3. Summary visit panchayat 3 (Palam) - irrigated with state kuhl

Date: Saturday 4th of December 2010
Name: Ghodav
Villages: Kr Ganba, Sutrehr, Bahla, Gharhab, Bhadrehr (total: 5).
Block: Nagrota Bagwan
Type: irrigated area.

Type of project: IPH scheme.
Year of completion: about 1985 for irrigation and about 2006 for drinking water.
Financial participation by panchayat: none (bill system)

Who was present at the meeting?
Daughters in law of one household.

Project tools:
Use of tube wells to provide water for irrigation. Water pumped and stored in tanks for irrigation distribution. Implementation of head pump for drinking water.

IPH also uses cemented kuhls for irrigation with outflow in tanks for distribution.

The department charges according to land tenure. For example this household has 6-7 kanals of land and contributed 25Rs, twice a year after the harvest, for irrigation.

For drinking water, women explained that IPH has provided enough pressure in recent years so as to enable water flowing directly into the pipes to the houses. They get water for about 1 and half hour every morning which they store for their day consumption. For this service, the IPH charged them 50Rs per month. Overall the water for both irrigation and drinking water is highly subsidized by the state.

Women explained that they had to go to the local IPH office to make their demand for the water, and it was then scheduled for distribution to their fields. However there were some instances were the water was late.

Women explained that IPH provided water according to its availability. It works on survey investigations to locate the needs and demands.

Location
The villages are close to the road and very close to an industrial area.

Agriculture practices
The villagers come from an agricultural community. They have great experience in this area and the fields are really well maintained and grow various crops.

People have a very good understanding of the importance of water and the various ways of managing it. For example, from his own initiative a farmer has built a tank to harvest rainwater as a supplement to the irrigation water provided by IPH. He said that because the water was sometimes slow in coming he decided to have a "backup option". IPH helped him build the tank.

People here said that the irrigation provided by IPH was a good scheme as the water from the nala didn't have a continuous flow and was difficult to divert into the fields.

In this area, women did agriculture mainly for their own subsistence. They grow maize, paddy, wheat, and veggies (mostly cauliflower).

Labour and Market
Many women mentioned that, as people were getting rich, they moved away from on-farm jobs.

Generally, women were very happy about the scheme. They did not have to invest any money in it, they just had to pay the bills which did not represent large amounts. They mentioned that since IPH provided enough pressure for the water to flow to their fields they did not have to walk to the head pump in the village to get drinking water and this saved them a lot of time. They could spend this time in their fields instead.

Women here mentioned that they received as much water as they wanted. They mentioned however that in some other locations villagers complained about the lake of irrigated water, but this was not IPH's fault, but a general lack in water due to severe temperature and reduced rainfall. The concerned village was high in altitude and as such there wasn't enough pressure to reach them during water shortages.

Women mentioned that when water was not enough, they sometimes had to walk to the village pump, but this did not happen very often. They also mentioned that there were natural springs close to nearby nalas which they could access if needed. They also believed in their medicinal qualities.

Women mentioned that before the scheme, they used to go for half a day, sometimes a whole day to nearby nalas to wash the clothes. Now they have more time for growing vegetable and doing their kitchen garden. Women did not sell their crops and vegetables, as they did not need to have additional income. They mentioned however that in case they had too much, they would either give it to their relatives of sell it on the market. They also mentioned that some other people in the village sold their crops.

Overall, their main activities consisted in domestic tasks and agricultural activities. These women were not involved with NREGA but they said that some other women in the village were. They explained that some women were involved with MNREGA as well as with ICDS (Integrated Child Development Service) and they hired people to work in their fields (they usually had small landholdings). Under that system the landlord provides or pays for the seeds and fertilizers and the labourer provides labour and compost. The crops are then shared in half.

Women were also sewing, but that was mainly for their own pleasure.

Understanding the environment
Women were aware of some hydrological characteristics. They mentioned that the catchment was big enough for them not to risk suffering major water shortages.

Women mentioned that with climate change, with the pumping of aquifers, and the change in infiltration rate due to mining and the removal of stones, groundwater recharged had decreased. They mentioned that beforehand the water table was really high, which enabled them to saw paddy crops easily as the fields were quickly waterlogged.

Role of women
Women mentioned that they were aware of the technique used by the IPH to get the water.

Panchayats provide 50% of seats for women. However these women were not involved with their PRIs. They mentioned that it was too far away and that they had no major needs anyways. However, they said that since they had to choose for female PRI members, they felt they did not have to follow their husband's opinion. They felt they could discuss a lot more about some issues as they were always working in groups (unlike their husbands who worked away).

In this area, men were mostly working off-farm in governmental jobs. This gave them good salaries and the families were quite well-off. However, the community has a strong agriculture culture and as such every woman carried doing work in the field. As such they are the one aware of the water needs and benefiting from the irrigation and drinking water scheme.
These women said that they did no often go back to their parents' house and even less if their previous home did not have water facilities.

2.4. Summary visit panchayat 4 (Changar) – irrigated with state kuhl and lift irrigation (IPH)

Date: 15th of December 2010
Name: Jangle
Village: Baranta
Type: rainfed area (Changar)

Type of project: Lift Irrigation scheme under IPH, Kuhl management under IPH and Panchayats (MNREGA)
Financial Participation by Panchayat: none (unless pump needed, provided by farmers)

Who was present at the meeting?
Men from the Panchayat committee.

Project tools: This panchayat has been benefiting from the IPH scheme to provide additional water into the kuhls. The IPH scheme consists of 3 lift irrigation systems delivering water to 5 different villages.

Most kuhls are under the management of IPH. There is no financial involvement required from famers. The kholi still plays a role in the distribution, but he is now employed by IPH.

Sometimes IPH, who lacks labour, will ask the panchayats to provide men and women under NREGA scheme for maintenance and construction work on the kulhs. Some kuhls however are still managed by the panchayats exclusively. In that case the chairman of the public committee organises the maintenance and distribution of the water during a meeting involving the beneficiaries. Mainly men are present at those water distribution meetings.

In addition, some farmers have started building green houses and irrigating their crops with water from the kuhls.
Finally IPH also recently implemented drip irrigation systems.

There have also developed ponds in order to collect water during the rainy season and use it during the following 2-3 months (until non left).

Farmers asked the panchayat for MNREGA's involvement in the construction of the ponds. Farmers then had to provide the pumps needed to transfer the water into the fields.

Members of the panchayats often go on courses on water management and on their return, they motivate and convince farmers to invest in various rainwater harvesting systems (such as ponds).

Men reported that there was no main difference between kuhls maintained by IPH and those maintained by MNREGA. However they mentioned that unlike MNREGA, IPH labour were usually skilled.

The men also reported that there were other projects done by the Indo-German Organization but consisting mainly small works such as flood control, little bunds, etc.

Location: Villages are located in the rainfed area. They have however an irrigation system from the kuhls. Land tenure is quite variable but consists usually of small landholdings (from 100 to 1 kanals, average being 25 kanals)

Agricultural Practices:
Paddy, wheat, vegetables. In addition there are also recently built green houses. (5 farmers have built one).

Labour and Market:
Mostly men and women were involved in farming activities on a similar level. Men were the one who tended to sell the crops on the market.

Since their investment in green houses, farmers' income increased, which then motivated further farmers to invest in similar agricultural practises.

Most men were also involved in business and government jobs though their main activity remained agriculture.

Women were the ones mostly involved with MNREGA when no work in the fields was needed. This allowed them to have their own money, in their own account, as opposed to the incomes from agriculture practises, which are mainly managed by men.

However, men reported that other jobs usually paid more than MNREGA (Rs 120-130, while NREGA pays Rs 110).

Some farmers also had cattle. They either let the animals graze freely or cut the grass for them from the forest.

Some women were also involved in doing some handicraft, which they could sell for their own profit.

Men did not complain about the lack of labour for agricultural work. They said that sine MNREGA was only a seasonal job they did not have issues with other people working in the scheme.

Understanding of the Environment:
Men mentioned that there was less rainfall now and that would the lift irrigation scheme be not implemented they would not have enough water in the kuhls.

Role of Women:
In this panchayat, where only men were present, they pictured women doing the same amount of work as men. They weren't as talkative as women about general agriculture and domestic issues. They weren't as aware about some of the benefits of agricultural practises.
"No rainwater harvesting needed as we have enough water from sources and nalas (water springs)"

In general, men seemed to be very happy with the work done by IPH, although it is worth mentioning that the chief minister of the IPH department was from this panchayat, which might explain their privileged position.

2.5. Summary visit panchayat 5 (Changar) – irrigated by tail of state kuhl + CAD

Date: 18th of December 2010
Name: Vari
Panchayat: Vari

Type of project: CAD (Command Area Development Program) under IPH.
Year of completion: 2008-2010
Financial Participation: villagers do not participate financially. The seeds are given to them.

Who was present at the meeting?
One farmer (meeting in his backyard).
Later, some IPH workers were met, doing cleaning in the kuhl.

Project tools:
The CAD project provides farmers with free seasonal seeds and teaches them some basic techniques and practises to improve their production. They also teach them to organize their sowing system according to seasons. CAD provides seeds to 16 villages.

However, cash crops require a lot more water then paddy and wheat. Cash crops need watering twice a month while paddy and wheat only require watering once every 2 months.

Through CAD, the farmers were also able to talk to the IPH Executive Engineer. As a consequence, the water was now reaching them from time to time.

The organisation also helped organise a kuhl committee for the villages involved in the project. This committee is then responsible for going to *Bawarna* to meet governing bodies and make their demand for water.

Kuhl management:
This kuhl used to be private and managed by a kholi (called Dina Nap, who worked for 6-7 years). Villagers used to invest some of their time to do the cleaning, maintenance and repair in the kuhls.

Now, since 20-25 years, the kuhl has gone under state control. It is managed by IPH.

Now, the farmer complained about a lack of water. After the heavy rains of the monsoon, the kuhl was breached upstream and has not yet been repaired. The farmer was waiting for it to be repair and receive water for his cash crop. For now, the water was not reaching him and he had to rely on rainwater.

This farmer was also once involved in trying to manage the kuhls for a certain time. He was delegate to the IPH Executive Engineer and was to manage the kuhl. However, because no water was coming, he could not manage it!

IPH says that not enough labour is available to them to repair the kuhl and do other work.

The farmer had now built a new pond in order to store the water coming from the kuhl, when it is coming. By the sort he can distribute the water when he needs it. He currently had no idea when the water was going to flow down the channel.

During panchayat elections, choosing a Pradhan who will be aware and concerned with kuhl maintenance is an important factor. However the farmer also said that in all manners the pradhan did not have any power, as he could not manage water that was no coming!

Farmers now choose amongst themselves of a person who will be in charge of distributing the water (as there is no more kholi).

Farmers complain that when CAD was still running, IPH did a better work at providing the water. Now the maintenance was bad, and as such the water was not flowing.

After the panchayat elections, the farmer was expecting the pradhan to write an official letter and send it to IPH in order to take actions.

Workers explained that they worked throughout the whole year on cleaning the kuhl under IPH. They were assigned a certain section of the kuhl (in this case 6kms), which they had to clean. There is a total of 8 persons for the 46kms.

However, there was just one carpenter, masonry, who was able to repair the breach.

Location:
The area in located in the changar. However it is also situated at the tail end of one of the longest kuhls in Kangra, the Kirpal Chend kuhl. Fields are irrigated with this kuhl.

The Kirpal Chend Kuhl is a 46km long kuhl, irrigating the fields of 22 villages. The head of the kuhl is located in *Bangla*, passes through *Palampur*, and ends just after *Vari*.

Agricultural Practises:
The farmer has a land of around 212 kanals.
He grows wheat, paddy, maize, as well as a large selection of cash crops (ginger, turmeric, radish, tomatoes, cauliflower, beans, fodder for animals). In addition they also have cattle for milk. They cut the fodder for this purpose.

Similarly to other locations in Kangra, the farmer had problems with wild boars coming every night.

Labour and Market:
This farmer had a little shop in which he sold his agriculture products as well as some other goods. He also sold his milk.

The farmer explained that a lot of people were involved in NREGA but most of them were doing work on rural connection (road building) rather than kuhl maintenance.

Changing for cash crops was a risky decision as the availability of water was each time more unpredictable. However, he did not have to invest money in getting the crops but did have to invest a lot more time. Together with his wife they work in the field twice in a day, together with running their little shop.

Villagers also had to clean the kuhl in their village as IPH did not do the cleaning, and villagers still needed the water.

Understanding of the Environment:
The farmer was aware of the decrease in rainfall. He explained that the distribution of water was now sporadic and unpredictable.

He realised that the fact that less water was reaching him was partly due to the poor kuhl maintenance by IPH, partly due to the overall decrease in water availability.

In the future, no more water will be available in the kuhl. He will have to rely on rainwater and might also have to build a new pond and pump system.

Role of Women:
In this farm, the farmer was insistent on the fact that he and his wife were doing the same amount of work in the field. He was however more involved in running the farm as it is with him that CAD had interacted. It was also him who intended to get involved in the kuhl management.

3. INTERVIEWS

3.1. Meeting with Vivek Sharma – Head officer of the District Office

Date: December 10th, 2010.

In rural communities, the first aim of NREGA was to motivate farmers to move away from subsistence farming to income generating farming (cash crop). For this, the priority was to improve the irrigation system in fields in order to improve the moisture capacity of the fields.

NREGA is meant to improve water assets, agricultural land, road connectivity, etc... PRIs are provided with a list of actions they can undertake under NREGA scheme.

The decision as to what the money from NREGA scheme will be spent on depends entirely on the PRIs. Each year, they draw a list of priority projects, the annual plan, which is then approved by the District Office. While NREGA puts water and agriculture as a priority, it was found that Panchayats prefer to put connectivity infrastructures on top of their list, leaving irrigation infrastructure in the last of their priorities.

As such, NREGA has now become an asset construction scheme (building roads, paths, etc...)

In the official document of NREGA, under section 8.4 (labour) and 6.1 (permissible works), water is put as the first priority while rural connectivity is put last. In real life, it is found that it is the other way round.

Jalag (a nearby panchayat) is one exception where, due to scarcity, the community, under the PRIs' direction, actively participated and directed the labour towards water projects.

Panchayats get the NREGA money potential depending on the number of BPL. This number has to be economically certified (not just politically).

How does NREGA work for farmers?
NREGA is a scheme that provides 100 days of paid work for anyone, without regards to their age, background, caste, religion, etc...
Farmers have to present themselves to their local PRIs and ask for a job under NREGA scheme. The PRI then has the duty to provide them with a job under 15 days, with a minimal duration of 15 days. They are paid on the minimal wage (Rs 110 in HP), straight to their bank account.

For women, working under NREGA allows them to become financially independent as they receive the money straight to their personal account.

Every 3 months, banks meet for a report session. From these meetings it appears that women tend to save 50% of their NREGA generated income and spend the other half. Men weren't as good as women at saving.

A quick analyse of statistics show that about 50% of women are involved in NREGA.

In general, Kangra women are very active in their work, unlike in some other areas where women don't go out to work. This difference is essentially due to cultural and social factors.

Under NREGA, a minimum of 33% of beneficiaries should be women.

There is also another scheme, under NREGA, called SGSON, aimed exclusively at women.
At the beginning of each financial year, a group of 10 women are chosen, based on their motivation and learning capacity, to benefit from a large loan from the bank. These women elect a president and a secretary. Rs 10,000 is given to them in order to invest in productive work.

They are being taught how to make marketable goods.
One issue with this scheme is that it is person-centred. The success of the scheme depends on the trainers, whether they manage to teach sufficient knowledge to the women before leaving them to develop their own business.

Female pradhan are more sensitive to the needs of the communities. In general women are often the ones complaining to NREGA about wage issues, problems with a bad Pradhan, etc.) They come in groups to the District Office and make their complains.

Regarding decision making for the annual plan, education has nothing to do with it. It is the community sentiment which provokes Pradhan or PRIs to make particular decisions.

Some issues with NREGA. Now that most people are involved with the scheme, some activities, such as tea leaves picking, or other agricultural activities suffer from a lack of labour.

The minimal wage of NREGA has pushed market rates up. When it used to be around Rs 100, it is now at a minimum of Rs155.

Some good things: NREGA is 100% computerised. All information is available on the NREGA webpage.

3.2. Meeting with kuhl committee chief president

Date: December 18th, 2010.

Position:
President of all the Panchayat's kuhl's committees, since 3 years (change every 5 years).

Function:
Ensure that the kuhl system carries its irrigation purposes. When they are maintenance or repair problems they also inform and assist IPH.
Villagers can complain to the village committee, which then goes to the kuhl committee. The kuhl committee then forwards the complaint to the Executive Engineer of IPH.
The kuhl committee can go to the IPH office anytime they want. They also send official letters.
The president is a farmer himself.
One of his functions is also to convince PRIs to put kuhl maintenance as a priority on their MNREGA annual list.
The role of the president is also to convince people who do not have ponds linked to the kuhl systems, to make separate ponds to harvest rainwater.
The kuhl committee has also been building new channels and repairing old ones. This was all done through MNREGA (proposal through PRIs)

Location:
It is located in the rainfed, Changar area. This region depends mainly on rain for irrigation, however they are also some long kuhls reaching all the way down to this area.
There is an important difference between upstream and downstream. People upstream live closer to towns, and have more water. Downstream, people have more problems with road, communication, water, etc.

Kuhl:
The kuhl is 46 kms long. It starts in *Bandala*, goes through *Palampur*, *Bawarna*, *Vari*... It is the longest kuhl, going from irrigated to rainfed area.
More than 30-35 Panchayats depend on this kuhl.

Present conditions of the kuhl:
The kuhl provides less water now than it used to. Water from the kuhl is also used for drinking purposes in Palampur. However, as population increases in the town, more water is being drawn from the kuhl. This reduces significantly the amount of water flowing downstream. Before Palampur started using the water from the kuhl, they did not face water scarcity.

In this area, there is a large quantity of traditional pond which collect the water from the kuhl when it is flowing. It is then stored there and distributed when the water warms up and when it is needed for the crops (there exists an ancient belief that water straight from the kuhls is too cold and can damage the crops).

There are two more traditional ponds along this kuhl. There were more of such ponds before, however, due to a lack of maintenance, they have ceased to exist.

Management of the kuhl:
Through MNREGA they have started to do maintenance work in the kuhls and the effluent channels. The pradhan will put pond maintenance on the list for MNREGA work demand.
In addition, since there is a lack of labour, IPH has also started to work with MNREGA and distributed some maintenance work down to the panchayats. Since this year, there is a new government policy that diverts some of the kuhl maintenance functions to the PRIs. By the sort, labour is now provided by the PRIs. Other agencies can also do the work (under that new policy).

The president explained that under PRIs, the work was more likely to be done than under IPH (large delays).

However, because of climate change, the president stressed the need for the development of more rainwater harvesting systems, in order to provide irrigation water during the dry months of winter and summer.

Mainly, the work from IPH for drinking water has been very good. There are occasional moments when the water does not come, because of some piping issues, but most of the time it is reliable. It is also delivered straight to the houses. They also have alternative sources of drinking water through handpumps and other devises.

In general, kuhls require a lot of maintenance work. They also pass through cities, which means they get loaded with detritus.

Agriculture activity:
Once people have more water from the kuhls or from the rainwater harvesting ponds, they tend to change for cash crops and as such get better economic benefits from their agricultural activity. There is then a redistribution of the land. Land that lies close to the houses in converted for cash crops, while land situated further away is kept for wheat and paddy.

Labour and Market:
People keep their land for their own consumption as their land holding is too small to allow for a productive, marketable activity. In addition, it is very difficult to control wildlife. The government has only recently tried to limit the damages from the wildlife by fencing some of the fields.
People are also not interested in buying fields of people who have off-farm jobs as they think that there are too many issues (water, wild life) to make it profitable. People don't sell their land and it remains uncultivated. In addition, the hilly landscape does not allow for large expansions.

3.3. Interview with kuhl committee president of Kandul kuhl

Date: March 30th, 2011.

What is the role of the KC President? And why did you become one?
The KC Pres. is at the head of the management team of 17 small kuhls (in the case of this KC). He has been president for 2 years now, and beforehand his uncle was the president of the KC for 15 years. His role is to overview the running of all the kuhls. He organises and presides meetings with all the members and kohlis every 5th day of the month. It is not a very regular work anyways. Only during the sowing seasons does it take a bit more time. Otherwise he is a mechanical engineer, working as a contractor. Essentially he became the president of the KC because he, more than anyone else here, needs the water. He is the only one who has gone on growing large orchards. This type of cultivation needs a lot of water, and therefore he wanted to ensure that the kuhl would always run, for his crops too!

Who is the KC composed of and how are they chosen?
The KC is essentially composed of more than thousand members, who are the farmers dependent on the kuhl. But they are only 15 office members. The president, Vice president and secretary are elected by the members. Then the president nominates the 13 office members. In this case, out of the 15 KC members, only 2 are women.

What is the story of this KC?
In the mid-eighties the government initiated a new policy to take over the kuhls. However, all the kuhls taken over by the government were not adequately managed and the vast majority of them went dry. As such, the farmers of the kandul kuhl and other neighbouring kuhls, decided to oppose to the government's intent to overtake the kuhls. They joined together and created the kuhl committee aimed at managing the kuhls on a political and financial aspect.

What does the KC now do?
Twice in the year, during the sowing time, are busy times for the KC. They need to organise the distribution. For this, they hire 2 to 3 men (they have to be men as they have to work at night too) who are paid to work with the kolhi for distribution. Otherwise, the KC works mainly at looking for funding, finding workers for the maintenance, and organising the running of the kuhls.

How about women? What role do they play in the maintenance of the kuhls?
Women are mainly responsible for cutting the bushes in their fields and clearing the drainage lines.

If they need more water or have an issue with the running/distribution, who do they go see?
Women would usually go to see the kohli. They usually go as a group, as there are many female farmers.

Would you say that male farmers are more likely to receive more water than female farmers?
No, it is very equal. They receive the same amount, no matter their gender.

How about between upstream and downstream? Is there a difference in the involvement of women and how much they receive?
No. Here, on the Kandul kuhl, the top of the kuhl (in the Dhar) is at about 1,700 MSL, while the end of the kuhl is at around 1,500 MSL. This means that the top of the kuhl will need sowing before the end of the kuhl, and therefore the top of the kuhl needs the water before. There is therefore no problem between upstream and downstream as they do not need the water at the same time.

So would you say that women are as involved as men in the maintenance work of the kuhls?
Twice a year, we beat the drums to call for every farmer to come and work on the maintenance of the kuhl. For 3 to 4 days, men but as well as women and children come to help at the kuhls. If anyone is not showing up, then he has to pay 150Rs per day of work! Men or women, everyone is involved. However, it is true that labour is more difficult to find now as people are moving away from on-farm jobs as they get better educated and seek government jobs. More then, they have to pay the fine, and this money is then used for the maintenance of the kuhl system.

How about MGNREGA? Has it changed the way the kuhl is working?
In Kandul kuhl there has been nothing done with MGNREGA on the irrigation system. Of the three panchayat, they did not prioritize the kuhl at all.
The PRIs are corrupted. They will only do a job if someone has something to win from it. For example, the PRIs will cement the kuhls only if some person from the PRI works in the cement company and can get money out of that.
However, there have been new elections and he has been trying to convince the new pradhans to engage MGNREGA labour in the kuhls, as the KC does not have enough money to do all the maintenance.

In the Kandul kuhl, there are 2 female pradhans who have been elected (Sapairu and Nanair). Would you say that they will do a better work at prioritizing the development/maintenance of the irrigation system?
It is possible, yes. Women are more attentive to the needs of other. And most importantly, women are usually less corrupt than men!

Does the fact that MGNREGA get involved in the kuhl management affect the way farmers engage in the maintenance?
No, I don't think so. When people gather together at the sound of the drums to do the maintenance work of the kuhls, it is very much a ritual. This will not disappear, it is part of the culture and traditions. On top of that, what MGNREGA does is just cutting the bushes, cementing the channels. It is not enough and there is still the need for the traditional maintenance work done by farmers.

How about the fact that women are now stating to do physical labour in the kuhls, which traditionally was left for men to do? Does that affect anything in the whole maintenance system?
When women work on kuhls under MGNREGA, it is highly appreciated. Women should do the same work as men, there should be no gender allocation of labour. On top of that, our women here, they are from the mountains, they are really strong, a lot stronger than women from other states. The labour is not too physical or arduous for them.

3.4. Interview of the Kundal kuhl kolhi

Date: April 9th, 2011

The current kolhi has been a Kolhi since 2 years. Beforehand his brother was the kohli.
He says that usually people still come for the bi-annual maintenance of kolhi. If they can't, then usually they get organised with their neighbours so that people come.

Women were involved with the maintenance of the kuhls straight from the beginning. They usually do the work in their fields. They do not come for the binding of the kuhls. If there is no man in their home to participate in the maintenance of the main kuhl they usually pay someone to go on their behalf, or get organised with relatives.

Usually people do not complain about not getting water because the kuhls are using the water from a perennial intake. At some places it does however sometimes break, reducing as such the flow. When people need the water for their fields, they usually just divert some water into their fields, without asking the kohli. They just break the kuhls in some place to get the water. Only some of the water is diverted in the fields, and as such, a large part of the water still flows downwards. There is in addition a sort of hierarchy where there is a belief that the water belongs in priority to the upper users, as they are the ones caring, protecting and maintaining the intake of the kuhl. However, people negotiate between themselves. So during the maintenance of the kuhls, even people from the end part of the canal come to give a hand so that they can actually "deserve" and arrange for the water to be distributed in their fields. People just know when they have to repair the kuhls, after heavy rains, after the monsoon.

The kohli tries to resolves contradictions that might exist between users, especially during the paddy season (kharif season), when more water is needed for the crops. This is usually the time when all of the farmers from all of the villages gather to do the work. His job is to organise turns between the villages, a well as resolving any conflict. He sometimes distributes the water according to hours.

People don't have a very big landholding here. So when someone irrigates his/her land, then a whole clan gets irrigated as water flows from one field to the other. As such there isn't really any issue of female farmers not being able to secure their water or getting it at hours that are not suitable for them. This is also why people usually grow the same crops in the same areas. That way they need the water at the same time. And also there is no conflict of someone irrigating his crops and overflowing a neighbouring field that do not need so much water. So when it comes to irrigation, all farmers engage together and organise themselves amongst themselves. People look for each other. It is a homogeneous system. Especially, when it comes to women, they also pay for the water (either to the kohli or to IPH), so people help them. Because people pay for the water, even if they are at the bottom end, no one can deny them the water.

In addition, when women cannot pay or cannot engage water, they use their networking to ask their relatives, or other people to help them. It is the same when it comes to making complains. Women generally don't go see the kohli. They would send their husband or someone else to go talk to the kohli. The only time they would come is if they are neighbours. In all cases, because irrigation is done collectively, women usually do not need to go worry about that.

The kolhi also has an assistant/ helper in the same village who helps him during the busy distribution period. The helper works as an informer to the villagers to let them know when the repair will take place, and people can also go complain to him. Essentially he works as a secretary.

PRIs usually ask the kohli when work needs to be done because they do not do any work on it themselves.

The kuhl committee does not interfere at the village level. They are only here to have a political present / weight against IPH, and also to ask for funds from the government or IPH.

Since more women are involved with the PRIs, he doesn't see much difference. In all cases, not much work is done of the kuhls. One of the reasons is that there was no real need to it. When his brother was a kolhi, whenever he needed help he would just go to the DC office in Dharamsala to ask for some funds. But at that time there was no MGNREGA. Now that MGNREGA is present, with a lot of fund, they have asked the PRIs to do some work. The PRIs have just been elected, so he will go and talk to them to try to convince them to invest MGRNEGA into some sections of the kuhl. He is happy to use MGNREGA to do work on the kuhls instead of going to the block and ask for fund. If they don't do anything then he will go to the block.

He finds there is no difference now that women are engaging their labour for the maintenance of the kuhls through MGNREGA. He feels they do as much of a good work as men. If he needs to get some labour, he is happy if they are women.

He wife was not directly involve in the decision making (she has now passed away), but she did act as a social link, when people were coming to his house, she would act as a host, as an entertainer for the 15-20 people who would come to his house.

Now the relation with IPH is mainly to get fund from them. Which is where the kuhl committee plays an important political and financial role. KC was funded to pressure the government and also to make someone responsible (otherwise no one felt responsible). They are increasingly relying on the KC and MGNREGA to run the kuhls, and therefore on the government.