Gender Dimensions of Water Governance and Management

Session Title

Interface between Water, Poverty and Gender Empowerment: Revisiting Theories, Policies and Practices

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When people are denied access to clean water at home or when they lack access to water as productive resource their choices and freedom are constrained by ill health, poverty, and vulnerability…..while scarcity is a widespread problem, it is not experienced by all…..Women and young girls carry a double burden of disadvantage as they are the ones who sacrifice their time and their education to collect water [UNDP, 2006; p.2]. And yet, the issue eclipses building a global commitment as well as politics around water management since the crisis hits most directly the poor and women who lack voice.

1. Introduction

The interface between water, poverty, and gender rests primarily on the premise that water being one of the most critical hence contested natural resources for enhancing human well-being and poverty reduction, may create space for women's participation as

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well as empowerment. The trajectory however, may neither be uni-directional nor smooth and certain nor in fact likely to be influenced by a complex interplay of factors-natural, socio-economic-political, and cultural.

Whereas, there is substantial amount of empirical evidence highlighting the poverty reduction impact of improved access to water for both domestic as well as productive use, the association is found to be fairly diverse across regions, households, and gender. Conversely, lack of adequate quality and quantity of water may obstruct life chances, and at times, push many of them into poverty. The growing consensus world over, underlines the fact that whereas availability of water is a concern for some countries, scarcity of water is rooted in power, poverty and inequality [UNDP, 2006]. Also there is little understanding on the mechanisms and processes that mediate the link between changes in the access to water and poverty reduction at macro as well as micro levels. Driven mainly by the scarcity syndrome of water as well as financial resources, the neo-liberal policies under the broad banner of sector reforms has increasingly focused on commodification of water through pricing and market-based efficiency on the one hand, and shifting of responsibilities to local communities and institutions without necessarily changing the macro policy environment with respect to property rights, public investment for developing farm technology and infrastructure, and relative prices farm-inputs and crops being grown by segments of communities with varying water resources endowments.

Similarly, the interface between poverty and gender tends to vary significantly across the diverse ideological-theoretical strands within the rich and rapidly growing feminist literature on water and gender. The discourse on water and gender is yet to unravel a more nuanced understanding on the implications of household's improved access to

water (and presumably increased economic well-being) on the changing gender relations in terms of access and use of water, aspirations and preferences for upward mobility, negotiating spaces within and outside the family, and agency/identity-individual as well as collective. It pays relatively less attention while understanding gender relations to aspects like economic viability of water programmes; changing and/or narrowing of gendered preferences for resource use in the wake of growing market development and commoditization of water; caste and class-differentials; and the trade-offs (if any) between livelihood enhancement of the household and empowerment of women within the households.

Strangely the contemporary discourse on Water-Poverty-Gender has largely, remained dis-jointed or has seen the relations in isolation. Those focusing on water and poverty have been overtly concerned about income poverty with only little attention paid to the other aspects like health-education, quality of life, property rights regime, equality, and resources sustainability. At the same time, the gender discourse has not moved beyond arguing for rights for women on the efficiency and welfare grounds. Although it does recognize the need for a shift from the earlier eco-feminist approaches where there were assumptions made on relationships between women and water, there is little effort made to empirically understand the dynamic nature of this relationship and to problematise them, especially in the Indian context.

It is thus imperative to take forward the two discourses in a manner that leads to a more comprehensive understanding of Water-Poverty-Gender issues. This would necessitate a deeper understanding of the interface in a context specific situation, and reflecting these

nuanced understandings in the light of the major strands of conceptual as well as empirical discourses on the theme.

Another important challenge is to translate some of the growing concerns on water and poverty (income as well as human well being) and the larger issues of equity (across class, caste and gender) into policy shifts or public action. At the same time equally important is the challenge to derive new insights from real life situations and implementation of some of the recent policy initiatives and feed into the contemporary theoretical discourse on water, poverty and gender within the backdrop of the contextual understanding of gender relations with reference to caste and class and ethnic minorities in India and the region. Capturing these nuances however, would necessitate special methods and tools using interactive processes. These need to be shared, explored and identified. In turn, nuanced understanding of the trajectory may help informing policy formulation and practice on the ground.

The paper aims at addressing these concerns by

- Revisiting the received theories and their contextualisation in the light of the recent trends in policy formulation and the actual experience from various participatory initiatives in water sector in the region;
- Evolving an analytical framework and identifying key research questions; and
- Exploring appropriate methodologies for empirical investigation

The analysis is divided in seven sections including this introduction. The next two sections present a brief overview of the recent discourses on water-poverty and water-gender interface in the context of developing economies. This is followed by discussion of a tentative framework for conducting empirical investigation for understanding the

interface between water-poverty-gender in a context specific scenario. Sections 5 and 6 identify major questions and methodologies for empirically examining the research questions. The last section 7 presents some concluding remarks.

2. Water-Poverty Interface: Evidence and Issues

Access to adequate quantity of quality water-a basic source of all forms of life and production of food, fibre and fuel- has a significant bearing on human well-being. The two most important and inter-related routes to water induced poverty reduction are: (a) improved outcomes in terms of health and nutrition status thereby, improved quality of life; and (b) increased productivity especially of primary products, thereby increased upward mobility-social as well as economic. Whereas the positive impact on health and quality of life is fairly clear hence, less contested, the link between water and income poverty mainly in the production sphere, however gets mediated by a number of complex factors such as agro-climatic, socio-economic and cultural. Whereas the evidence from a large number of developing agrarian economies in South Asia suggest an overall poverty reducing impact of water, especially irrigation, at macro level, the contemporary discourse has often overlooked the issue of equity in water-poverty interface. This has led to differential outcomes for regions, households, and members within the households. Essentially the differential outcomes tend to reproduce, and at times, aggravate, the existing inequalities in terms of respect resource endowment, ownership, and power relationships that obtain at each of these three levels. In the light of this it becomes important to understand factors that combine to create scenarios of poverty or facilitate pathways to move out of it

2.1 Poverty and Equity: Select Evidence from India

Poverty reduction impact of water within the production sphere takes place through its impact on enhancing farm-productivity at household level and its impact on sustaining the overall economic growth at macro level [Majumdar, 2006]. The latter in turn implies indirect impact through a percolation mechanism. This implies that those not having access to land and irrigation may tend to gain mainly through the indirect channel of percolation, which in turn, is determined by the pace, composition and structure of economic growth at the macro level.

A number of studies have gone into examining the link between water and poverty in the Indian context. A large proportion of the existing literature however, is focused on the link between access to irrigation and poverty. Conceding that irrigation is the most important factor influencing agricultural growth, which in turn, is critical for reducing rural poverty in the country, there is little disagreement on the fact that water in the form of irrigation, has a substantial poverty reduction impact. It is observed that the poverty reducing impact of irrigation is more through increase in gross cropped area rather than through higher yield, as the former creates additional demand for farm labour, a majority of whom are landless poor [Panda, 2003].

The evidence on water (irrigation)-poverty interface is based on inter-household comparisons, with special emphasis on irrigation. For instance a number of studies taken up under the aegis of IWMI, find that during 1970 to 1994, irrigation emerged as the strongest variable explaining reduction in poverty. A further analysis of the impact of irrigation on the productivity of all inputs taken together was fairly substantial [Bhattarai and Narayanmoorthy; 2004] The estimates suggested that one per cent increase in area

under irrigation resulted in 0.32 percent increase in yield response to all the inputs taken together. The study however, noted that the negative relationship between irrigated area and poverty has weakened overtime. The study thus, reinstated the fact that the relationship between irrigation and poverty is not straightforward; it depends on several mediating factors [Bhattarai, 2002].

Despite the fairly obvious impact at micro or household level, the macro picture at least till recently, depicted a diverse scenario. A broad pattern described in the India: Rural development Report suggests that: `drier states (in the western parts) harbour lesser poverty proportions than the wetter ones (in the eastern parts). In general the states which were under the Zamindari regime and have experienced relatively ineffective agrarian and land reforms and thereafter green revolution, have been losers, while those in the west, have been gainers. Within these contours, if monsoon fails, all suffer, and vice versa' [NIRD, 2000].

The above pattern is further substantiated by a study by Shah and Guru (2004) for the regions delineated by the National Sample Survey Organisation (NSSO) in India. At a more dis-aggregated level, Shah and Singh (2004) also observed lack of significant association between irrigation and poverty by analyzing Taluka (block) level data in Gujarat-one of the predominantly dry land states in India. They noted that `access to irrigation is a sufficient condition for poverty reduction though not a necessary condition' [p.171]. This implies that in a predominantly dry land area, irrigation is not the only route to poverty reduction, and that access to irrigation, which is often limited and uncertain in such areas, is no assurance for escaping poverty.

Absence of a strong association between irrigation and poverty in a spatial context is likely to be due to three reasons: (i) irrigated areas generally attract large number of in-migrants (often poor) from less irrigated areas; (ii) ground water irrigation in large tracts of dry land regions is often limited in terms of coverage of households as well as land, besides being highly uncertain hence difficult to estimate; and (iii) over depletion of water may lead to declining productive base in these regions. These issues are particularly important in the light of the fact that the next phase of agriculture growth has to increasingly come from dry land areas.

Given the above typology, population movements from dry to water abundant regions may have played significant role in creating the above scenario. Besides these, larger size of land holdings, suitability of some of the high valued cash crops, and sectoral diversification along with market and infrastructure development may also be responsible for relatively lower incidence of poverty among some of the dry land regions in the country. Similar results have been obtained from a vast body of literature on watershed development, which suggests that the projects often having a central thrust on augmenting water may not ensure livelihood security to all the households within the community. Evidence from a number of studies on watershed development projects suggest that the benefits, arising mainly from augmentation of rain water, is distributed inequitably among households and also within households. Given that water is accessed by those having land and in most cases, having source of ground water irrigation, the benefits arising from watershed projects generally tend to overlook the basic requirement of water among the landless, poor farming households, and women [Shah, 2007]. This

reinstates the importance of equity and efficiency of water use in the context of watershed development in the country [Joy, et. al; 2006].

Pertinently, the issue of intra-household equity has remained fairly unexplored and neglected not only in empirical investigation but, also in policy formulation. It is thus, important to have a clearer understanding of the issues of equity at regional, household, and intra-household levels.

2.2 Emerging Issues

Sustainability of Ground Water

Another important concern in the context of water-poverty interface pertains to the issue of sustainability of water as an exit route from poverty, given the growing demand and depletion of ground water resources-the main source of irrigation in large parts of countries like India and other parts of South Asia. For instance about fifty per cent of irrigation in India is through ground water, which produces in turn, nearly one third of food crops in the country. A somewhat similar situation obtains in countries like Pakistan and Nepal. Management of ground water thus, is critical for shaping future of agricultural growth in the region where expansion of irrigated large scale surface irrigation scheme has already started slowing down. The emphasis therefore is on rain water harvesting and recharge of ground water through various initiatives, especially through watershed development.

Experience from micro watershed projects in India is testimony of how such initiatives help mitigating adverse impacts of droughts and depletion of ground water. There are however, not many systematic studies capturing long term impact of such micro level initiatives on recharging of aquifers under varying geo-hydrological conditions. The

evidence, by and large, suggests that the positive impacts are often confined to fairly limited areas and over a short span of period, mainly for the want of cost-effective devices on a scale required to address the problem [Cosgrove, W.J. and Rijsberman, F.R.2000]. In fact the need is to go beyond ground water recharge and address the issue of ecological services of water so as to ensure long term sustainability of economic growth in the region.

Water-Use Efficiency and Economic Viability

Enhancing value of output per unit of water is yet another important mechanism for impacting farm-production and thereby poverty reduction. While there cannot be any disagreement on the importance of resource-use efficiency in so far as it helps promoting livelihood support to the poor. The problem however, emanates from adopting monetary measure of efficiency i.e. market value of output per unit of water, without necessarily improving the technical efficiency in farm production. A likely fall out of an approach such this is a drive towards high valued as against subsistence crops essential for meeting the requirement of food, fibre, and fuel. It is likely that increasing emphasis on market orientation may further marginalize the poor operating under uncertain rainfall conditions. Moreover, emphasis on market-led efficiency may further deviate attention from quality aspect of water, which in fact has significant bearing on health and human well-being, besides cost saving.

Among technological innovations, agricultural bio-technology seems to assume special significance with special emphasis on developing drought resistant seeds. However, doubts have been cast on potential of the technology to reach out to the poor farmers.

Absence of an Alternative Perspective

The vision underlying the emerging scenario of water and agriculture in the next two decades thus reinforces centrality of irrigation, ground water recharge, and efficiency in market sense. This may be tantamount to continuing with the same pedagogy of agricultural growth with certain modifications. In terms of poverty reduction it may imply continued and perhaps, increased dependence on percolation mechanism to reach the poor.

Against this, a pro-poor agricultural growth may call for an alternative vision of property rights regime, land and water use planning, diversified farming systems, compensatory mechanism for conservation, investment priorities, and pricing support. Whereas the World Water Vision presented by World Water Council (2000) discusses some of these aspects, besides several others, the discourse on water and poverty reduction is yet to adopt a paradigm shift in the composition of agricultural growth, which upfront addresses the issue of equity.

As an interesting development, water poverty framework presented by Biltonen and Dalton (2008) offers a useful approach for analysing availability of water and its use for meeting various developmental objectives, especially poverty reduction and, also examining the implications of alternative scenarios of water-allocation across different uses. While this appears to be a promising framework approach, its operationalisation in a real life scenario may be difficult in the absence of an alternative vision of growth mentioned above, and also a political commitment that essentially is brought about through various social movements and representations by agents of change including women's collective agency.

Apparently, the recent discourse on water and gender has critiqued major features of the neo-liberal policies for sector reforms and/or IMT, but without adequately engaging with the issue of nature and composition of economic growth (production sphere) and poverty reduction. There is implicit assumption that gendered discourse on water would converge with an alternative vision of growth noted above. This may or may not happen depending on how macro economic policies work to address inequity, and how multiple agencies of women play out under different settings of-region, class, and caste/ethnicity [Jackson, 1998]. In this context, the following observation by Zwarteveen (1998) is quite pertinent:

`Whatever may be the reason for the current disregard for social equity concern, it should be realized that an understanding whether and why irrigation programmes affect different people differently is not just important on the basis of equity concerns. In fact, such an understanding is fundamental to improving the effectiveness and efficiency of the water sector reforms and thus, solving the global problem of water scarcity' (p.309).

3. The Gender Water Discourse

Conscious that environmental problems affect women in significant ways, feminists have been engaged with this issue since the early 1970's. They questioned the limitless capacity of nature with the help of science and technology, which has rendered entire landscapes uninhabitable and unfit for survival of the future generations to come.

The recognition of limits to development by nature fuelled the search for sustainable solutions to the crisis. In women's attempts to conceptualise sustainable development the recognition of the connections between the domination of nature and of women provided

important insights. This stimulated the debate in the south on women, environment and development and in the north on nature feminism or ecofeminism.

3.1 Women as Victims of the Crisis and then the Solutions

In the evolution of debates on WED since the mid-1980's there has been a shift in political priorities and positions. While earlier, the emphasis was clearly on women as victims of the environmental crisis it gradually shifted to their roles as efficient managers of the environment. The argument for increased participation of women in environmental management has largely been derived from their privileged knowledge experiences of working closely with the environment. A different line is pursued by one trend of ecofeminists who suggest an inherent close affinity of women with nature based on a feminine principle (Shiva, 1989). The net result of both these positions has been that women are seen as privileged environmental managers or the source for solutions to the environmental crisis (Baraidotti et al 1994) By the later 1980s the debate on WED became an established one on international environment agendas. The growing recognition of the connection between the development crisis and the degradation of the environment, the growth of poverty and gender inequalities forced the need for integration of social aspects in sustainable development.

3.2 Emerging Alternatives

Towards the 90's the debates were fairly well informed about the limits to a theorisation around women as the saviours and the solutions to the environmental degradation. It was therefore emphasised that although women are differentially positioned in the use of the

environment and in the process of development, the relationship between these two has to be addressed at a different level.

Around the same time, various alternatives to the position of 'women as solutions' were emerging. These positions were more grounded in a materialist perspective and suggested a historical context to gender relations. For example, feminist environmentalism (Agarwal, 1992) and Feminist Political Ecology (Rochleau et al, 1996) speak of a more dynamic relationship between women and nature. The point of departure is largely in the way these alternatives problematise the relationship rather than assume it one way or the other. The feminist political ecology locates the relationship in larger social- political and cultural context where symbolic constructions of power become significant.

3.3 Gender and Water

Most of the gender and water discourse traverses a similar path. It continues to be dominated by the instrumentalist approach where women's participation becomes critical from the point of view of the larger goal of efficiency and effective management of water resources.

Narrow sectoral biases dominate thinking in the water sector in general and this is reflected in the gender water discourse as well. The domestic water sector is seen as the women's sector due to its welfare orientation and the irrigation sector as dominated by men. Therefore, a large part of the gender water discourse until recently focused on the domestic water sector, pointing to women's time and labour spent on collection and utilisation of water and thereby arguing for their inclusion in project planning and management. There is little critical engagement with how such a perspective in fact lends

to stereotyping of women in their current roles as nurturers and carers. Although the discourse has moved ahead and tried to challenge stereotyping of gender roles, water policies and programmes continue to be dominated by this image of the woman as it suits the larger policy and programmatic goals of better and efficient management.

A quick review of literature of the past 10 years in gender and water shows us the range of issues the discourse is grappling with. From the early 90's when the focus was clearly on the domestic water sector, we see a shift in focus in trying to understand the sectoral divide and identifying gender aspects of irrigation management (Zwartween, 1998) largely located in the context of irrigation management transfer of the post 90's reform era. This literature calls for addressing some of the challenges thrown by the introduction of new water policies with their emphasis on water as an economic good and women's participation and gender relations (Cleaver 1998; Zwartween, 1998). Some of the early questions raised were also related to pricing of water as having an impact on cropping patterns and preferences and displacing women from their roles as subsistence agriculturalists. These were not backed by context specific empirical evidence and remain to be investigated carefully. Their investigation becomes important, as the rhetoric often is likely to reemphasise gender stereotypes. Water use and management is gendered and although it is recognised that men and women have differing priorities and perceptions in water management and use, there is little empirical understanding that has been able to contextualise this generalisation. This opened up a large set of questions around gendered preferences in water use and management, which need a careful context specific examination even today. Do water rich areas have different practices among men and women, do different castes and socio-cultural contexts differ in these respects? Do men

and women have different cropping preferences etc? These kinds of questions may help us get to a contextualised understanding around gender and water (Jackson, 1998).

More recently, there have been efforts to understand the space that has been created by the newly introduced policies around decentralised water management through people's participation (SOPPECOM-Utthan-TISS on going study supported by IDRC). These are new processes and therefore it is too early to understand and explain the experiences of participation and empowerment through decentralised water management institutions.

It is in this context that the question of institutions too gained currency in these debates, but there is little empirical understanding around the role of formal and informal institutions in water management and their impacts on women's participation (Cleaver 2003). Few questions are asked on women's perceptions around the new institutional forms at the local level that claim to hold potential for improved participation of women leading to their empowerment. However, there is work neither on how such empowerment is effected, nor on the perception that women and men have of the decision making process at local level and their role within it. There is very little empirical understanding on men and women's approach and contributions to these local institutions and the effect these have had on the power relations. In the absence of such an understanding, the general prescription has been to increase representation of women in these committees or institutions. The assumption is that women's representation would lead to better representation of their priorities. There is very little understanding of how women see these institutions and whether they feel that the process of participation as it currently presents itself is empowering to them.

An important contribution to the sectoral divide discourse comes through the work of Cecile Jackson where she argues for a framework that facilitates an integrated analysis of the domestic and productive water by focussing on subjectivities and embodied experiences of men and women in water work. This would allow for an integration of labour and production considerations on the one hand and the health and well being considerations on the other. The core of her argument argues for understanding women's agency as shaped by and resisting structural constraints (Jackson 1998). Here the individual actor, her perceptions and actions therefore are central to understanding the dynamics of the water sector.

She cautions against an overemphasis on separation of genders rather than interdependencies of gender relations on the one hand and on understanding resources as physical assets rather than the meaning, they have for people. In this context, it might be interesting to get a contextualised understanding of how women look at work around water and what has led to formulating the perceptions they hold. For example if women do not participate in irrigation planning for example, one cannot always understand this as an exclusionary process, but also one where women's choice may have been critical. Similar areas need to be explored and understood better if the discourse has to move beyond the rhetoric of for example understanding presence and participation as inclusive and absence as exclusionary or that gendered preferences in water use and management are necessarily different and that women's preferences hold potential to conserve and sustain the resources. Many of our key questions draw on a critical engagement with this work.

4. Interface between the Two Discourses: Exploring an Analytical framework

This section tries to develop a tentative analytical framework for examining the likely trajectories of water induced changes in economic (income) well-being especially in the production sphere, and gender empowerment as well as women's agency. There are of course, possibilities of multiple trajectories linking water-poverty-gender where augmentation or additional availability of water operates as the major trigger of the processes of change both in poverty reduction and gender empowerment in an interactive mode. What kind of trajectories would actually emerge however would depend on the various factors-natural resource endowment, socio-cultural, and techno-economic in a micro setting. Also, the trajectories may not be pre-defined as they tend to evolve and respond to the larger processes of change in macro environment.

Given this backdrop, we have tried to explore at least two broad trajectories, though not mutually exclusive, as analytical constructs that may help identifying critical research questions for empirical investigation. The trajectories have been identified in the light of the two major strands of economic growth, especially in agriculture and natural resources sector, mentioned in the water-poverty and water-gender discourses in the previous two sections. The central thrust of the enquiry is: Whether and in what manner increased water-availability may impact poverty across different categories households and change gender power relationships in a specific micro setting?

Chart 1 presents a synoptic view of the two broad categories, which we term as mainly Market and Process Driven.

Chart 1: Two Scenarios of Water-Poverty-Gender Interface within Production Spheres

Main Features	Trajectory I: Market Driven	Trajectory I: Process Driven
Access to additional water for productive use	Through irrigation schemes, private investment in ground water, and watershed development	Mainly through Minor Irrigation and Watershed Development
Impact on Farm Productivity and Income	Sure and substantial and Immediate	Limited, uncertain and slow
Technology and Farm Practices/Labour Intensity	Intensive use of inputs including irrigation	Centrality of soil-moisture profile, agronomic practices, and labour intensity
Sustainability of Resource and Benefits	Limited owing to ground water depletion and neglect of low productive land especially, common property resources	Very positive owing to emphasis of resource regeneration
Equity-Intra Community and Intra-Households	Benefits may reach disproportionately to non-poor though, it may also help a subset of poor landed households	Better equity within community
Impact on Women's Work Burden and New Opportunities including Health and Educational Outcomes	Expected to be positive on most of these aspects depending on the actual increase in income, given the socio-cultural-spatial features	Not very clear
Women's Participation and Empowerment within and outside Family	Drawing mainly on enhancement of economic status	Opening of new spaces within and outside family
Implications for Collective Identity	May weaken gender identity of women	More conducive

Trajectory 1: This refers mainly to a scenario where increased availability of water, especially for irrigation, leads to immediate and substantial increase in crop productivity by using the mainstream (input intensive) technology. Such impacts however are realized by a relatively small subset of households, even among the landed categories. Those

benefiting from irrigation, by and large, may belong to relatively higher caste/ethnic categories. Further it may be postulated that among the beneficiaries of additional irrigation, those with relatively better economic/financial and at times political power tend to earn greater profit as compared to those having relatively weak resource-base.

It is likely that this trajectory of water-induced income enhancement/poverty reduction may generate some adverse environmental consequences owing to adoption of water and input intensive crops as well as technologies. Also it may intensify commercialization of agriculture as against households' food security. This may imply crop-centric approach to land use where relatively low-productive land may get subject to sub-optimal use.

Nevertheless the households, at least a sub-set within the community, may obtain substantial increase in income hence, improvement in economic well-being including food security. This in turn, may bring some associated positive benefits to the members of the households including women. Some of the benefits could be reduced drudgery and time-cost in collection of water, fodder, fuel as these tasks could be passed onto hired labour or, they may obtain these resources through market purchase. Another benefit reaching to the household-members could be improved access to health end education, besides recreation, mobility and leisure.

It is still quite likely that these benefits may get distributed dis-proportionately among the members, often in favour of the male members and within that with the age-specific preferences. Notwithstanding the gender discrimination each of the above benefits may bring some kind of empowerment among women within the household often without exerting any positive impact on gendered power relation within and outside the family.

One may not however, completely rule out the fact that increased economic and human development attainment among some of the female members of the households may trigger a different route of empowerment and freedom than what is generally thought out. More importantly, it may also lead to changing class identities among women of these households having attained higher economic status. This may involve new kind of networking, upward social mobility, and perhaps opening of new economic opportunities. What do all these mean to women's self-esteem, empowerment, agency, collective identity and ultimately gendered power relations? These may need probing in the context of the women's own aspirations and the socio-economic-cultural context, which shape them.

Trajectory 2: This refers to an alternative scenario, echoing some of the important features of a wide range of developmental initiatives involving participatory processes and institutions within the domain of watershed, irrigation, and domestic water resources management. This may include initiatives prior to the sector reforms and after that.

As depicted in Chart 1, the trajectory has a somewhat different starting point for augmenting additional water resources in terms of both-technology and the processes of decision making as well as institution building. Without getting into the finer details the trajectory could be described as more sensitive to equity issues, which in turn, may lead to different types of technological intervention for augmentation of water and institutional mechanisms for distribution of the augmented water.

Women and their concerns may find greater space in augmentation and management of water resources right from the initial stage of the intervention. This, it is expected, would create more equitable outcomes with greater emphasis on provisioning of domestic water,

and limited but more broad based access to water for irrigation, especially for crop-survival, covering a large number of relatively poor farmers and marginalized communities.

Centrality of equity, including gender equity, may necessitate different type of land use, crop-choice and farm practice. These may largely be characterized as technologies with low intensity of irrigation and external inputs and higher labour use, diversified land use promoting allied activities such as livestock, inland fisheries, plantation, kitchen garden etc. where women traditionally have larger space, emphasis on food crops, low dependence on markets and low risk. All these features may be more conducive for environmental sustainability with special emphasis on ground water recharge. Participatory institutions may help uphold this `virtuous' model as they may create greater space for involvement the landless, poor, and socially marginalized.

Overall, this trajectory may offer more equitable, sustainable and gender sensitive pathways for strengthening water-poverty-gender interface. It is also likely that the trajectory may lead to further strengthening of collective identity among women owing to participatory processes and increased space in public domain. All these may help supporting the cause of women's empowerment in the context of gender power relations as compared to Trajectory 1.

How far this has been realised in real life situations? What are the major facilitating and constraining the factors for attaining gender empowerment through participatory water resources management? How far women's aspirations as an individual converge with that of a collective identity?

These are some of the questions that may need empirical investigation. An important aspect that deserves special attention is that of submerging gender issues with poverty. While it is true that a large proportion of women in developing economies like that in South Asia face severe conditions of poverty and deprivation, it is imperative to bear in mind that women's subordination is not caused by poverty. Moreover, the issue of collective identity of women assumes special importance in the context of poverty-gender interface since roles, identities, and behavior of non-poor women may exert positive as well as negative influence on poor women [Jackson, 1996; p.501]. The next section dwells on the larger as well as specific questions emerging from the above discussion. Before getting on the empirical questions, it may once again be reiterated that the two trajectories presented above are neither exclusive nor, complete in terms of detailing. Also these two are not the only possible trajectories. It is however, hoped that in so far as they capture major strands of the contemporary debate, the synoptic view may help setting up stage for identification of relevant questions and the implications thereof for the theoretical discourse on water-poverty-gender. In this is sense the framework is fairly exploratory.

5. Key Areas Needing Exploration

Our central enquiry is in the area of exploring the interface between water, gender and poverty. We hope to contribute in a small way to understanding the processes that are unfolding in the wake of the current economic paradigm in the water sector, which is set in a neo liberal framework.

Our substantive concerns are around understanding the impacts of poverty alleviation agenda in the water sector on women across different social groups and on gender relations in general. The water poverty, specifically the income poverty agenda has missed linking the caste and gender concerns while the gender, and water discourse as we have seen earlier has largely focused on structures of patriarchy as a reason for women's exclusion from water management. Neither of the discourses has tried to speak to each other in terms of the impacts, processes and outcomes.

Some of the hard questions that need to be asked around this broader concern would be as follows

1. What is the notion of equity across caste, class and gender in the context of water resource interventions?
2. What is our understanding of empowerment located in water interventions across class, caste, gender and other social groups?
3. It would be important to map access to water (including that created through new interventions) and its meaning across class, caste and other social groups in the first instance and then at the intra-household level as well to understand the gendered nature of access.
4. What are the factors that influence this access across groups- such as technology, location, markets
5. What is the notion of individual access to water in a household and the process of gender discrimination

The second substantive concern covers the ground of participation, which is informed by both the pro-poor agricultural growth discourse, participatory discourse and the gender

discourse as well. In the current paradigm, it has created a space for decentralized water management and women's participation. Experience is still too fresh to know if the space has been utilized effectively or not and whether it has contributed to the notions of equity across the different socio-economic groups.

Here we may need to look at the following questions

1. Is there a link between representation and empowerment at different levels and dimensions? How do we measure this? Here there is need to specifically look at economic empowerment and what are the caste class differentials?
2. What are the economic benefits to women because of water interventions- whether in terms of time saved- alternative opportunities of time saved and new forms of gender division of work.

The third substantive area is around the question of a collective gender identity. Can there be a collective gender identity around water. Since water is a critical means of production, its increased availability would lead to increased income, which may possibly lead to weakening of collective gender identity (over a class identity) if there did exist one prior to this. This arena tries to understand the notion of a collective gender identity and under what circumstances does it evolve or weaken in the context of water interventions. Some of the questions that may need to be asked could be as follows

1. What kind of a gendered identity existed prior to the water sector interventions? SHGs or women's rights collectives, VWSC groups
2. What were the key discourses or the issues they raised and what was their nature and form? Who were the women/men who were part of it? Was there a fulfillment of objectives towards the need for a gendered identity ?

3. Has this identity been altered since the intervention and to what extent can it be attributed to the water intervention programme meant to alleviate poverty

The fourth substantive area covers the much-contested ground of gender differentials in preferences around water use and management. Income enhancement and institutional space may hold potential for addressing the issue of equity in general and gender empowerment in particular however the underlying assumptions may need to be examined.

What are gender differentials in

a) preferences in use of land and water and

b) In choice of crops/species/technology/sources?

Here we may also need to further probe to understand women's and men's perceptions around scenarios of division of work around water and its use by creating different scenarios and understand how men or women would choose particular scenarios over others and why they do so. This may lead us to understand the vision of a water sector reform through the eyes of both men and women and how different a world view are they located in.

The fifth substantive area is in understanding the interplay between the areas of contestations and stability that define a familial relationship and kinship ties.

Here we need to understand the process of negotiations, conflict and compromise in some of the key areas of choices like health, sexuality and economy. The questions that we may need to pursue here would be by way of understanding expenditure patterns in a household, decisions about child bearing and sexuality, health and illnesses, education of

a girl child, expenses on birth, death and marriage, augmentation or liquidation of women's assets for example.

6. Feminist Methodologies

Such an enquiry is indeed a methodological challenge as is evident from the nature of the substantive concerns and some of the specific questions that have been laid out in the earlier section. It is a challenge also because it invokes methods from both the disciplines of economics and feminist studies.

An interactive and iterative process would be critical in understanding the dynamic relationship between water, gender and poverty.

We have already laid out a broad framework for understanding some of the dynamic aspects of the relationship between gender, water and poverty. Our emphasis here would be on employing feminist methodologies and very simply our understanding of a feminist methodology is therefore one, which involves a distinctive body of research practice and epistemology. Feminist research is any research that involves an empirical study, which draws on feminist insights.

A combination of tools or methods would be needed to understand such a complex set of questions, but the distinctive component of this approach is the research practice and the broader framework of feminist understanding. Our emphasis is on questioning whose agenda is being pursued? At the heart of feminist methodology is the critique of knowledge production, which is seen as having constructed and sustained women's oppression. This critique therefore provides us reason for a different kind of research practice. Feminist research and methodology holds potential to counter knowledge that

has consistently perpetuated women's oppression. Feminist methodologies are those that in different ways try to bring women's voices to the centre.

Using Sandra Harding's (Harding, 1987) work, we make a distinction between method, methodology and epistemology. Often methodology is reduced to a discussion of methods or tools, which could be similar in different kinds of research.

Methods according to Harding can be broadly categorised into three main categories- a) hearing through interviews, FGDs etc b) observations c) tracing of historical records

Almost all feminist researchers would use a combination of these methods to investigate the problem. The difference lies in which questions are asked and to whom, how the questions are framed, how men and women's lives are conceptualized and to what purpose finally the research is used.

The analysis of research proceeds then from the framework employed to understand some of the questions posed earlier. The challenge is in interpreting women's and men's voices and perceptions and whether that can be treated as knowledge especially when we are considering a marriage between two different disciplines.

7. Concluding Remarks

The paper tries to link the two largely dis-jointed discourses on water and poverty on the one hand and water and gender on the other. Intuitively some of the important links binding the two discourses seem to be the concern for sustainable livelihood and women's empowerment through various processes of participation, negotiations, and contestations. Equity, including gender equity, is at the centre of all these concerns. It is thus, an effort to cover a new ground in the gender water and poverty discourse, which

hopes to contribute to some of the larger debates around the economic growth, efficiency and equity in the water sector. Whereas the discourse on the water poverty overstates the economic efficiency argument, the gender water discourse and empirical evidence too has not moved much beyond the welfare and instrumentality approaches. The idea is to go beyond the instrumentalist approach and essentiality of linking gender empowerment with poverty reduction by exploring a new vision of agricultural growth, which inter alia, may be help strengthening women's collective agency. Whether and how far is this possible? What are the different pathways? And what role water induced processes of change may help attaining the pathways? These are some of the important riders that need empirical investigation within context specific situations. The paper has made a modest beginning in this direction by revisiting the major strands of the two discourses; outlining an analytical framework; and identifying critical research questions for an empirical enquiry. It is exploratory in nature and seeks to generate substantive engagement among professional and practioners in the related fields.

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