Empowerment and Gender Equality for Water and Sanitation in Rural India

Two Case Studies

By
Abigail Brown

WRPM Project Paper

submitted to

Oregon State University

in partial fulfillment of
the requirements for the
degree of

Master of Science in Water Resources Policy and Management

Presented September 20, 2010
Commencement Fall 2010

<u>Master of Science in Water Resources Policy and Management</u> Project Paper of Abigail Brown presented on <u>September 20, 2010</u>

APPROVED:

Dr. Michael Campana, representing Geosciences

Dr. Denise Lach, representing Sociology

Dr. Rebecca Warner, representing Sociology

Abigail Brown, Author

ABSTRACT

Women and marginalized populations often encounter adversity associated with access, planning, and management of water and sanitation (WatSan) resources in rural India. The Government of India (GOI) has shifted to decentralized, participatory WatSan systems and developed policies to include women and marginalized populations from rural areas in WatSan. Many NGOs working on WatSan in rural India also strive to include women and marginalized populations. Both the GOI and NGOs claim decentralized, participatory programs lead to empowerment of women and gender equality. Through separate case studies, this paper reviews WatSan programs started by two NGOs in different villages in India. The two NGOs (NGO A and NGO B) aspire to empower women and achieve gender equality in conjunction with WatSan programs. Mixed methods are used to evaluate empowerment and gender equality in villages related and unrelated to WatSan programs. The concept of empowerment is divided into two components: empowerment potential and the empowerment process. Empowerment potential for WatSan is gauged using an Empowerment Potential Index (EPI) that determines access to WatSan, access to WatSan planning groups, and access to WatSan management groups for individuals using data from household surveys. Women respondents in NGO A have higher ratings on the EPI. Women respondents in NGO B have comparatively lower ratings on the EPI. This is likely correlated to the time each NGO has been working in the WatSan sector. The empowerment process for WatSan is gauged using a definition of self-worth, capacity, and transformation to analyze data from individual interviews. Women participants in NGO A engaged in the empowerment process largely through obtaining microcredit to make household and community financial decisions unrelated to WatSan. Women participants in NGO B engaged in the empowerment process mainly through individual communication about water issues with the vice-president of their village government. Neither NGO has a clear definition of empowerment nor a monitoring program in place to measure empowerment, but each NGO collects sex-disaggregated data to measure gender equality. Both NGOs have fewer comments by women related to self-worth when compared to comments related to capacity and transformation. Both NGOs have lower occurrences of the empowerment process occurring on the political level according to women in individual interviews. Gender equality for WatSan was improved by each organization. NGO A implemented WatSan efforts that influenced gender equality and empowerment through creation of community groups that provided loans for WatSan and WatSan awareness. NGO B implemented WatSan efforts that influenced gender equality and empowerment through access to WatSan and increased WatSan awareness.

Keywords: empowerment, gender equality, water, sanitation, India, WatSan, women

ACKNOWLEDGEMENTS

First, I would like to thank my dear friends and colleagues in India. Amitangshu Acharya guided the development of my research proposal. He continuously backed my interest in understanding gender, water, and sanitation in India. Amrtha Kasturi Rangan provided essential assistance. She traveled to all field sites, acted as translator, and explained cultural nuances. This project would not have been possible without her help. Praveena Sridhar shared extensive knowledge about global development and social entrepreneurship. She challenged my paradigm of thought on international aid and encouraged me to educate myself about the importance of entrepreneurship.

Next, I would like to thank my committee members at Oregon State University. Dr. Michael Campana has worked around the world on water issues and maintains a popular water blog. His writing on global water is passionate, objective, and thorough. His work has impelled me to strive for objectivity. Dr. Denise Lach is an expert at analyzing qualitative and quantitative data. She helped me formulate a data-analysis process and provided extensive editorial input. Dr. Rebecca Warner has researched global gender issues. She encouraged me to consider concrete gender concerns throughout this study.

Finally, I would like to thank my friends and family. My father, David Brown, communicated with me on a regular basis about my research and experiences at OSU. My two sisters, Elisabeth Kate and Miranda, looked up to me as the first sibling to earn a college degree. My dear friend, Moon St. Clair, was supportive during all stages of this study. He encouraged me to pursue a master's degree and travel to India. Last but not least, I want to thank the numerous other people who helped me throughout the research process. To the unnamed many, thank you.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

GLOSSARY and ACRONYMS

Name	Definition
CBO	Community-Based Organization (SHGs, VWSCs, etc.)
GOI	Government of India
Gram Sabha	Quarterly meeting of village members above 18 years of age.
M&E	Monitoring and Evaluation
Microcredit	Small forms of credit offered to individuals without collateral.
NGO	Non-Governmental Organization
O&M	Operation and Maintenance
Panchayat	The administrative boundary of a village (aka Gram Panchayat).
Panchayati Raj Institution	A system of local governance.
Pani Samitis	A division of the PRI that governs water projects and is responsible for O&M of water projects.
PRI	Panchayat Raj Institution
Rs.	India National Rupees
Sarpanch	Chairperson of the Gram Panchayat (aka president).
SC	Scheduled Caste
SHG	Self-Help Group
ST	Scheduled Tribe
Swajaldhara	Rural water supply program promoted by the GOI.
Swaraj	Self Rule
TG*	Technical Group
UN	United Nations
VWSC	Village Water and Sanitation Committee
WatSan	Water and Sanitation
WG*	Water Groups
WSG*	WatSan Group

*Items denoted with an asterisk are pseudonyms to protect the anonymity of the NGOs referenced in this paper.

"You can tell the condition of a nation, by looking at its women"

"The day every one of us gets a toilet to use, I shall know that our
country has reached the pinnacle of progress"

- Jawaharlal Nehru[1]

INTRODUCTION

Access to clean drinking water and basic sanitation is a worldwide concern. Almost 2.6 billion people in the world lack access to improved sanitation with fewer than one billion people having access to safe drinking water for domestic purposes (WHO, 2010). In the year 2000, member-states of the United Nations agreed to eight Millennium Development Goals (MDGs) to help alleviate global poverty. MDG Goal 7, to ensure environmental sustainability, has a specific target (10) to halve the proportion of people unable to afford or reach safe drinking water and without access to basic sanitation by 2015. With a national population of over 1.1 billion people, safe drinking water and basic sanitation are vital to the people of India. According to the 2001 Census, only 73 percent of people had access to safe drinking water and 21.9 percent of people had toilets attached to homes in rural areas (Census of India, 2001). Women and marginalized populations[2] are most impacted by a lack of water and sanitation (WatSan) in the country (Ahmed, 2005a).

Early development initiatives of the 1950s and 1960s were dominated by males and failed to take into account needs of women in water systems. A lack of research exists on "the impact of water projects on social relations and, consequently, who does or does not have access to water, how it is used and who benefits" (Coles & Wallace, 2005, p. 4). Development specialists, governmental agencies, and non-governmental organizations (NGOs) sometimes maintain that WatSan programs lead to empowerment of women and gender equality. They believe that access to resources or participation in decision-making will automatically lead to empowerment and gender equality (Batiwala, 1993; Oxaal & Baden, 1997, Kabeer, 1999; Malhotra, Schuler, & Boender, 2002).

---

[1]   Jawaharlal Nehru was an admired leader, along with Mahatma Gandhi, in the Indian independence movement opposing colonization by the British. He was the first Prime Minister of India from 1947 to 1964.

[2]   Marginalized populations are defined in this paper as people in caste, class, racial and ethnic, economic, or religious minorities excluded from societal practices and norms.

In two separate case studies, this paper aims to understand if WatSan programs started by NGOs in rural villages in India lead to a process of empowerment for women and gender equality. Two villages that received WatSan programs by two separate NGOs were selected for this study. Prominent approaches used by each NGO for WatSan programs are examined, and a historical background of WatSan programs in each village is provided. The *empowerment potential* is examined using quantitative data collected in each village and nearby villages. The *empowerment process* for women, related and unrelated to WatSan programs, is defined using qualitative data collected in each village. The empowerment potential and empowerment process for women, related to WatSan programs, are compared using quantitative and qualitative data. *Gender equality* is reviewed, related and unrelated to WatSan programs, using qualitative data and analyzed to see if gender equality, related to WatSan programs, is a result of the empowerment process for women. Both NGOs are compared to find strengths, challenges, and opportunities in their WatSan programs regarding the empowerment process for women and gender equality. Limitations to this research will be reviewed and suggestions for a more comprehensive version of this study will be discussed.

BACKGROUND

Gender and WatSan in India

It is important to examine gender in the context of WatSan resources because gender affects who has access to, who participates in the planning of, and who manages WatSan systems. Many people confuse gender with sex. Sex is the classification of species as female or male based on reproductive functions. Gender not only includes perspectives of women, but women and men of varied socio-economic backgrounds.[3] Ahmed (2005a, p. 3) explains gender as "the socially constructed identities, roles, and responsibilities of women, men, and the relationship between them". Rights, roles, and responsibilities of women and men in society are rooted in culture and history (Joshi, 2005, p. 135). Many factors determine which women or which men have the best access or the most say in planning and managing WatSan

---

[3] The scope of this paper does not cover transgender individuals, but this is an important and valid issue when understanding gender concerns.

systems. Social constructs such as caste, class, race and ethnicity, income and wealth, or religion influence interactions between women and men with regard to WatSan resources (Ahmed, 2005a; Coles & Wallace, 2005; Joshi, 2005). These constructs may be nuanced by nation, region, state, village, or household (Singh, 2006). All women and all men do not have the same rights, roles, and responsibilities. Women and men form heterogeneous groups with diverse needs and concerns. Researchers have found that women and marginalized populations are disproportionately excluded from WatSan access, planning, and management in India (Ahmed, 2005a; Coles & Wallace, 2005).

Often women and marginalized populations do not have equal access to water resources. Women are the main users of water for domestic purposes (e.g. drinking, bathing, and cooking) in rural areas in India, but in some locations they are barred from using public water sources while menstruating (Joshi & Fawcett, 2005). This is bound to historical Hindu beliefs that women are impure during menstruation and pregnancy (ibid). Women also use water for production purposes (e.g., animal husbandry, agriculture, or fisheries), but those with higher social status will have better access to water in rural India (Ahmed, 2005a). Similarly, women are unable to purchase land or their ownership-rights are not acknowledged due to patriarchal customs (Joshi & Fawcett, 2005). They are not able to participate in irrigation-water management groups or their needs are often not considered when planning or managing irrigation-water systems (Ahmed, 1999). Men and women in a marginalized caste group known as Scheduled Castes[4] (SCs) are not allowed to access the same water sources (e.g., wells or community stand-posts) as dominant caste groups in some rural villages in India (Joshi & Fawcett, 2005). This is based in historical Hindu beliefs that SCs are permanently impure and will pollute pure water sources.

Regularly women and marginalized populations also do not have equal access to sanitation resources. Due to cultural norms, men in households do not feel as restrained to urinate or defecate outside in rural India (Narasimhan, 2002). This may result in a lack of initiative to

---

[4] A caste system is present among some Hindu, Christian, and Muslim communities in India based on four hierarchical groups from Hindu teachings. These groups include *Brahmans* (teachers, scholars, and priests), *Kshatriyas* (kings and warriors), *Vaisyas* (merchants and traders), and *Sudras* (service providers and artisans). The lowest group of people, Dalits, are known as Scheduled Castes. The caste system was outlawed in India in 1950, but it is still prevalent in rural areas.

construct an individual toilet for household use. One in ten young women attending a school without adequate sanitation drop out once they hit puberty because there is no facility for attending to the menstrual cycle (Lidonde, 2004). It is difficult for marginalized populations lacking financial resources to afford to construct a toilet at their place of residence.

Inadequate access to WatSan has negative effects on women and marginalized populations. Young women between the ages of 15 and 35 comprise the majority responsible for collecting household water in India (Ahmed, 2005a). Health, access to education, and self development of these young women is negatively impacted. Women bear the burden of waking early, staying-up late, or traveling long distances to collect water. Women tend to prioritize water for domestic or productive needs (e.g. washing clothing) over personal needs (e.g. bathing) (Ahmed, 2005a). They work long and exhausting workdays. Joshi & Fawcett (2005) document women who work fifteen to sixteen hours each day collecting water; gathering firewood; cultivating fields; cooking; cleaning; taking care of children, the old, and the sick; and looking after cattle in rural India (p. 50). Women without sanitation facilities may relieve themselves in the night or early morning in fear of being seen by males. This puts them in danger from sexual harassment or animal attacks. Women reduce food intake and hold defecation or urination causing medical problems (Narasimhan, 2002). In some places in India, SCs perform the job of manual scavengers picking up human waste outside putting them at higher risk for sanitation-related illnesses (Chaplin, 1999).

Repeatedly women and marginalized populations are not consulted for WatSan planning and management. Women, indifferent of caste or class background, may be excluded from WatSan planning and management. Joshi & Fawcett (2005, p. 51) attribute this to a tradition of female exclusion and that "such decision making is public and socially identified as masculine, the domain of powerful men". Even if women do participate, it may not be meaningful where they are able to voice opinions and have influence on decisions (Ahmed, 2005a). The most vulnerable women (i.e., SC and landless women) do not help decide where to build stand-posts or provide suggestions on pricing of water. Pour-flush toilets may increase workload if a water source is not located nearby. Women are typically tasked with cleaning toilets. If the wrong materials are used, the time taken to clean toilets will increase.

Involvement of women and marginalized populations in access, planning, and management of WatSan systems has benefits (Ivens, 2008). Women and girls with increased access to water have better health. Improved access to water allows women to become more involved in income generation, and this stimulates the local economy (Asian Development Bank (ADB), n.d.). Better access to sanitation gives young women the opportunity to attend school (Ivens, 2008). Inclusion of women and marginalized populations in WatSan planning and management ensures systems are built and managed to serve the needs of the whole community. It promotes community cohesion and allows people to take long-term ownership of WatSan systems. Research has shown that WatSan systems with women involved in planning and management are more sustainable over time (Wijk-Sijbesma, 1998).

Participatory WatSan Management in India

The Government of India (GOI) has advocated participatory local governance in rural areas, and this has increased involvement of women and marginalized populations in WatSan access, planning, and management. Informal governance systems have been historically used in India, but decentralized institutions for rural areas were formally established in the 73rd Constitutional Amendment Act of 1992. This Act endorses rural governance structures called Panchayati Raj Institutions (PRIs). There are three tiers of PRIs on village (Gram Panchayat), block (Panchayat Samiti), and district levels (Panchayat Zilla). Elected officials form PRIs at each tier. Leaders are chosen for five-year terms. One third of the seats are reserved for women as well as representation for SCs and STs. Gram Panchayats (panchayats) may consist of one village or several small villages. In the Act, panchayats were allocated 29 administrative responsibilities including WatSan, but WatSan governance on the local level evolved over time (Table 1).

Table 1. Post-1992 History of WatSan Policy in Rural India

Passed 1992 Enacted 1993	Under the 73rd Constitutional Amendment, PRIs are restructured and gain responsibilities for local drinking water and sanitation.
1992 to 1997	Eighth Five-Year Plan (FYP) recognizes drinking water and basic sanitation as vital for human needs, indicates water is a commodity, and acknowledges the importance of local water management.
9 July 1992	Sanitation subsidies reduced to 80 percent for rural people at the National Seminar on Rural Sanitation.
1997 to 2002	Ninth FYP promotes water as economic good and suggests rural users pay 10 percent of capital costs and 100 percent of O&M costs for drinking-water systems.
1999	Department of Drinking Water Supply created to implement SRP.
1999	Sector Reform Project (SRP) pilots Total Sanitation Campaign in 250 districts and pilots Swajaldhara in 75 districts.
2001	Total Sanitation Campaign implemented (after SRP) nationwide with emphasis on education of rural households about toilets. It provides small subsides of Rs. 500-600 (USD 10.75-19.90) for toilets to low-income individuals.
2002	Swajaldhara Act implemented (after SRP) nationwide to provide drinking water and sanitation to rural communities. This Act allows direct access to central resources by panchayats and encourages creation of VWSCs for WatSan management. It requires users to pay 10 percent of capital costs and 100 percent of O&M costs for drinking-water systems.

The 1999 Sector Reforms Project (SRP) piloted decentralized, participatory systems for rural WatSan. The SRP 'water program' endorsed demand-driven approaches, advanced participatory planning and management, and required rural villages to pay 10 percent of capital and 100 percent of Operation & Maintenance (O&M) costs for water systems. It focused on empowerment and encouraged women to participate on newly envisaged Village Water and Sanitation Committees (VWSCs). VWSCs were created to plan and manage WatSan and communicate with PRIs on WatSan issues. The SRP 'water program' was established nationwide as the 2002 Swajaldhara Act. The SRP 'sanitation program' also suggested participatory planning and management. It recommended rural users build and maintain sanitation systems in collaboration with Community Based Organizations (CBOs). This program focused on the privacy and dignity of rural women by furthering sanitation coverage (GOI, 2010). The SRP 'sanitation program' was established nationwide as the 2001 Total Sanitation Campaign. Across the country, NGOs have adapted similar approaches for

including women and marginalized populations in WatSan access, planning, and management in rural areas. Like the GOI, they believe these approaches lead to empowerment and gender equality.

Empowerment and Gender Equality

Empowerment has been defined in variety of ways. The root of the word empowerment is power. Empowerment is a relational concept where people who previously lacked power are able to obtain power (Perkins & Zimmerman, 1995; Rowlands 1996; Kabeer, 1999). This could be power over physical, human, intellectual, financial, or ideological matters (Batiwala 1993). Kabeer (1999, p. 437) defines empowerment as a process of change "by which those who have been denied the ability to make choices acquire such an ability". She states the empowerment process includes obtaining resources (material, human, or social), securing agency (sense of inner power, decision-making, bargaining and negotiation, deception and manipulation, subversion and resistance, or reflection and analysis), and realizing achievements (outcomes such as basic needs). Rowlands (1996) and Narayan (2005) deem confidence and self-esteem essential to engage in the empowerment process. Scholars rarely focus on psychological aspects of empowerment. "Self confidence and a sense of self-efficacy are important precursors to action. The process of taking action and reaping the rewards further reinforces these feelings, creating virtuous cycles of reflection and action" (Narayan, 2005, p. 20). The empowerment process, while often facilitated by external organizations, should arise from within an individual or collective group of individuals (Rowlands, 1996; Oxaal & Baden, 1997). The term is rooted in the work of Paolo Freire whose theory of conscientization describes a process in which the poor challenge power structures and control their own lives (Batiwala, 1993).

Gender equality has been described as: "The situation where women and men enjoy the same status and have equal rights, responsibilities, and opportunities for realizing their full human rights and potential. It implies equal access to and control over resources by women and men" (Ivens, 2008, p. 63). Malhotra et al. (2002) make the distinction between gender equality and gender equity. Gender equality is equality under law, of opportunity, and of voice (Malhotra et. al, 2002). Gender equity is acknowledging different gender needs and

devising plans that involve different treatment for women and men to influence equal outcomes. Rights, roles, and opportunities of women and men are influenced by caste, class, race and ethnicity, income and wealth, or religion. Gender is based in historical and social constructs. These elements must be considered to distinguish gender equality or inequality.

Ideas of empowerment and gender equality are linked but not synonymous. Commonly, gender equality and the empowerment process occur on multiple scales including household, community, and political levels (Ahmed 2001; Malhotra et al., 2002; Narayan, 2005). Conversely, empowerment of women is different than gender equality. Empowerment is a process of change from disempowerment where women or marginalized populations can be agents of change (Malhotra et al., 2002). An empowerment approach to development is bottom-up. Women or marginalized populations realize power imbalances and work for equitable allocation of resources and fair decision-making. A gender-equality approach to development can be bottom-up or top-down. In a top-down gender equality approach, women or marginalized populations are beneficiaries of projects, programs, or policies for equal allocation of resources and fair decision-making. Empowerment on the individual level may bring about gender equality on the community level, and empowerment on the community level may bring about gender equality on the political level (Malhotra et al., 2002).

Measuring Empowerment and Gender Equality

Numerous people across multiple disciplines (e.g., development, education, community work, and social work) have attempted to measure empowerment (Rowlands, 1996). This paper will measure the empowerment process for women using Kabeer's (1999) definition of resources, agency, and achievements. Resources, such as access to WatSan, may appear easy to count but should show prospect for agency and achievements to be a useful indicator (Kabeer, 1999). Agency, such as a person setting a WatSan goal and acting on it, must be evaluated within cultural and socio-economic constructs. Some scholars quantify agency through calculations of decision-making, power, control, or choice. Achievements, such as realizing WatSan goals, can include universal values such as nourishment, health, and shelter to avoid cultural differences but "we have to keep in mind that such measurements... entail

the movement away from the criteria of women's choices, or even the values of the communities in which they live, to a definition of 'achievement' which represents the values of those who are doing the measuring" (Kabeer, 1999, p. 440). Achievements can also encompass control and mobilization skills for people, development of networks for organizations, or coalitions and shared resources for communities (Perkins & Zimmerman, 1995).

Difficulties measuring the empowerment process in this framework are plentiful. Malhotra et al. (2002) believe resources are not empowerment but an avenue for empowerment. Calculations of agency by only counting the number of women and marginalized people participating in decision-making presents a simple window on a complex reality (Kabeer, 1999). Joshi and Fawcett (2001) say more women are participating in WatSan planning and management, but this does not lead to empowerment. Their literature review shows four empowerment themes for women in WatSan - role in skilled work, participation in decision-making, increase in hygiene awareness, and income generation - but social factors such as class, caste, age, and ethnicity limit actual participation by these women in India (Joshi & Fawcett, 2001). Additionally, women might make unobservable decisions to the outsider. Measurements of achievements should accept that all people might not the same decisions, and empowerment is concerned with inequalities in capacity to make choices not differences in actual choices made by individuals (Kabeer, 1999).

All the same, there are a few ways in which a researcher might succeed in documenting the empowerment process. The three dimensions of resources, agency, and achievements are connected and should be viewed together. It is important to cross-check indicators (Kabeer, 1999). A researcher might ask how resources influence agency or how agency influences achievements. One particularly effective method at capturing the empowerment process is to follow over time. This can be done through collection of empowerment indicators from two separate periods or conducting life-history interviews with participants (Kabeer, 1999). Qualitative data are useful to understand the empowerment process (Rowlands, 1996). Studies should assess the empowerment process on household, community, and political scales to provide robust analyses (Malhotra et al., 2002). Empowerment indicators are

usually more effective if they are devised for specific projects and programs (Oxaal & Baden, 1997).

Measuring gender equality is slightly less nuanced. This paper will use a definition of gender equality as equal rights, responsibilities, opportunities, access, and control (Ivens, 2008). Gender equality is situational. Social, geographical, historical, and cultural norms should be taken into account. Gender inequality is when the above-referenced factors of gender equality are not distributed equally between women and men in society. Sometimes forms of gender inequality continue to exist because they accepted by women. "Women's internalization of their own lesser status in society leads them to [accept their status and] discriminate against other females in that society" (Kabeer, 1999, p. 441). This is internalized subordination and occurs in patriarchal societies or cultures where women have learned to cope with lower status.

Few organizations measure empowerment or gender equality, but monitoring and evaluation (M&E) is needed to influence policymakers (Rowlands, 1996; Joshi & Fawcett, 2001). Measurements help organizations support claims of empowerment and gender equality. Organizations should continuously ask how projects affect lives of people and question the empowerment process (Rowlands, 1996). Measurements of empowerment and gender equality should happen simultaneously because they are related concepts. Measurements of empowerment for women and gender equality in WatSan can determine if women realize existing power imbalances and if WatSan programs lead to equitable outcomes. Joshi and Fawcett (2001) assert many NGOs execute WatSan programs with empowerment goals, but they are often only referring to numbers of women participating in programs not empowerment. This study attempts to measure empowerment and gender equality through quantifiable indicators. These indicators will allow us to understand if WatSan programs implemented by two NGOs are leading to empowerment for women and gender equality.

METHODS

Data Collection

Mixed-methods were used to collect data in this study. Johnson & Onwuegbuzie (2004, p. 17) explain "mixed methods research is formally defined as the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts, or language into a single study". Narayan (2005, p. 25) commenting on measuring empowerment states "a mix of data collection tools provides a more reliable and complete picture of the phenomenon under study, as the tools balance out each other's weaknesses". Ahmed (2005b) believes gender-equality measurements should include quantitative indicators (such as number of people with water) and qualitative indicators (such as perception of people impacted by WatSan programs). Qualitative indicators are necessary to evaluate empowerment and gender equality as they represent empowerment and gender equality as subjective towards participants (Ahmed, 2005b).

One quantitative method, a household survey, was used in each main village and nearby villages (two with NGO A and one with NGO B). Two qualitative methods, a group mapping project (GMP) and individual interviews, were used in each main village. The GMPs were conducted first. Invitations were extended to the village through the NGO. GMPs are a participatory technique in which village members draw a map identifying houses, resources, agricultural areas, and community buildings. These maps are a helpful tool for transect walks and groups discussions (Sijbesma & Postma, 2008). Individual interviews were held after the GMP in each main village (Appendix A). The GMP was used to locate a variety of house types (e.g., tiled, asbestos, thatched, kutcha[5] or colony house[6]). It was a goal to complete household surveys and individual interviews with an equal number of women and men from a variety of house types within village boundaries. All villages were chosen for inclusion in this study

---

[5]   A kutcha house is a home in which the walls and/or roof are made of un-burnt bricks, bamboos, mud, grass, reeds, thatch, or loosely packed stones (as defined by the GOI).

[6]   The government offers grants for construction of colony houses to some BPL families.

because they met the following qualifications: 1) the population was small, between 100 and 300 people, 2) the population was BPL[7], and 3) the village was part of NGO WatSan programs.

Table 2. Overview of Quantitative and Qualitative Methods

	Village	Method	Number
NGO A	**Main and Two Nearby Villages**	Household Surveys	27
	Main Village	Group Mapping Project	1
		Individual Interviews	6
NGO B	**Main and One Nearby Village**	Household Surveys	18
	Main Village	Group Mapping Project	1
		Individual Interviews	13

Data Analysis

Each NGO is analyzed as a separate case study. Primary approaches for WatSan programs used by each NGO in rural villages are outlined. Quantitative data, in household surveys from each main village and nearby villages, are examined to understand empowerment potential through access to WatSan, access to WatSan planning groups, and access to WatSan management groups. Qualitative data, in individual interviews from each main village, are used to understand facets of empowerment related and unrelated to the WatSan programs. Qualitative and quantitative data are compared to understand empowerment potential and the empowerment process for women related to WatSan programs. Qualitative data, through individual interviews from each main village, is used to understand gender equality related and unrelated to WatSan programs and to see if gender equality for WatSan is a result of the empowerment process for women.

In this study, the empowerment process for women is analyzed with Kabeer's definition of empowerment as resources, agency, and achievements (Kabeer, 1999). Under the resources dimension of her framework, household surveys were reviewed for access to WatSan, access to WatSan planning groups, and access to WatSan management groups representing empowerment potential. Under agency and achievement dimensions of her framework, individual interviews were reviewed for sense of self-worth (self-worth), capacity to make

---

[7]   Below Poverty Line (BPL) is a parameter used by the GOI to define individuals and households that are economically disadvantaged and eligible for government aid.

decisions (capacity), and transformation of decisions to reality (transformation) representing empowerment process. Finally, this study seeks to understand if the empowerment process for women influences gender equality for WatSan. Figure 1 below shows how empowerment and gender equality are operationalized in this study.

Figure 1. Empowerment and Gender Equality Framework

Quantitative Data Analysis

Household surveys provided an opportunity to evaluate empowerment potential in relation to WatSan programs started by the NGO. Components pertaining to access to WatSan, access to WatSan planning groups, and access to WatSan management groups were chosen from household surveys to represent empowerment potential. These components include the first dimension of empowerment - resources - as defined by Kabeer (1999, p. 437).

> Resources include not only material resources in the more conventional economic sense, but also the various human and social resources which serve to enhance the ability to exercise choice. Resources in this broader sense are acquired through a multiplicity of social relationships conducted in the various institutional domains which make up a society (such as family, market, and community).

This paper contends that access to WatSan, access to WatSan planning groups, and access to WatSan management groups fall into the resources category of Kabeer's definition. This is because these components only represent counts of people with access to WatSan or access to WatSan planning and management groups. They do not represent empowerment merely an increased empowerment potential (Joshi & Fawcett, 2001; Malhotra et al., 2002).

Empowerment is multi-dimensional and researchers must be careful in constructing scale or index variables for measurement (Malhotra et al., 2002). Variables may cover-up effects of interventions on different aspects of the empowerment process, and additional information should be used to verify indicators (ibid).

With these caveats in mind, a simple index was constructed to measure empowerment potential associated with WatSan programs. This Empowerment Potential Index (EPI) will be used with qualitative analysis of the empowerment process to avoid problems that might arise from using a stand-alone index (Figure 2). Each survey participant was given a rating based on their access to WatSan, access to a WatSan planning group, and access to a WatSan management group. Index components - access to *individual* water, access to *individual* sanitation, access to a WatSan planning group, and access to a WatSan management group - are rated equally at 1. These components are considered equally important in potentiating the empowerment process. Access to *shared* water and access to a *shared* toilet are rated at .5 because they indicate an increased level of hardship. A rating of 1 on the EPI equals lower empowerment potential with the participant having one index component. A rating of 4 equals on the EPI equals higher empowerment potential with the participant having all index components. Scores of women and men were compared. Scores of Non-SCs and SCs were compared. Scores provided an indication of access to WatSan, access to WatSan planning groups, and access to WatSan management groups resulting in empowerment potential for respondents.

Figure 2. Empowerment Potential Index for WatSan

Access		Planning	Management	Total
Individual Water [a]	Individual Latrine [b]	WatSan Planning	WatSan Management	
1	1	1	1	4
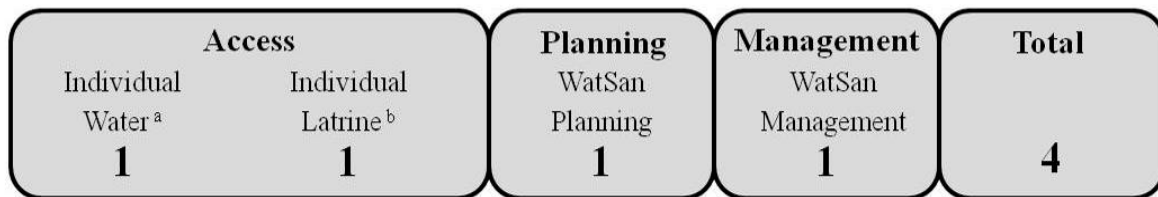
[a] Those with shared water access received .5 instead of 1 because shared water access represents some level of increased hardship for those collecting and storing water from shared water sources.

[b] Those with shared latrine access received .5 instead of 1 because shared latrine access represents some level of increased hardship for those walking to use and clean the shared latrine.

It is beneficial to quantify numbers of individuals with access to WatSan, access to WatSan planning groups, and access to WatSan management groups, but it is important to remember that any of these components alone do not represent empowerment. Access to WatSan is the starting place for empowerment and it "is change in the material reality of women's lives through improved access to water and other productive resources" (Ahmed, 2005b, p. 222). Access to WatSan planning groups and access to WatSan management groups do not identify whether women have active or nominal participation for planning and management (Agarwal, 2001).

> While the visibility of women in community water management institutions is an important starting point, it does not necessarily lead to their active participation in water decisions, or challenge the gendered drudgery of water collection. (Ahmed, 2005a, p. 3).

These components only show whether respondents have been involved in a WatSan planning or management group. Qualitative techniques should be used in conjunction with the EPI to understand if WatSan access, planning, and management have initiated the empowerment process.

Qualitative Data Analysis

Individual interviews provided an opportunity to evaluate themes of empowerment and gender equality. All transcribed interviews were analyzed using computer software called NVivo. This is a computer-assisted qualitative data analysis program. This program allows a researcher to code qualitative interviews and retrieve comments efficiently. Comments describing empowerment - self-worth, capacity, and transformation - were coded in a deductive manner among all women participants (Table 3).

Table 3. Empowerment Themes in Individual Interviews

Empowerment Theme	Description of Comments
Sense of Self-Worth	Value of the self as a person. Words and phrases that might exhibit this feeling include pride, dignity, joy, pleasure, value, happy, coming up in life, having a drive, wanting better, having a better life, or not sitting down with a thought.
Capacity to Make Decisions	Ability to make and influence decisions. This might include making choices on the household level, participation in groups, communication during meetings, or input in politics.
Transformation of Decisions to Reality	Power shift to enable previously disempowered to see their hopes or dreams to come to fruition.

Deductive coding is where a researcher picks out themes and searches for those themes in qualitative data (Bernard, 2002). Themes of capacity and transformation used for individual interviews include the second two dimensions of empowerment - agency and achievements - as defined by Kabeer (1999). Rowlands (1999) and Narayan (2005) deem self-worth as equally important in the empowerment process. Therefore, the theme of self-worth is also included in review of qualitative data.

Comments pertaining to gender equality were coded in an inductive manner among all women and men participants. Inductive coding is where a researcher allows main themes to arise from the data itself (Bernard, 2002). This process was completed to identify areas of gender equality or gender inequality as viewed by women and men in each village. Comments in individual interviews that arose relating to gender equality and gender inequality were placed into one of seven thematic categories: financial, production economy, land ownership, politics, education, water, and sanitation (in no particular order).

Ethics of Study

This research entailed working with NGOs and people in five rural villages. Ethical challenges in this study exist because the research may not directly benefit participants. Narayan (2000) discuss four ethical challenges to research: 1) taking time from people, 2) raised expectations, 3) feedback to communities, and 4) action after research is complete. Each GMP and interview took time from people that could be used for other purposes. Accordingly, no one

was required to participate in this study. Participants were asked if they were willing to take part in the study. Sometimes people did not want to participate. On other occasions, interviews were conducted while people were cooking food or getting ready for engagements. It was clear some participants had raised expectations from our visit. Questions requesting loans to complete projects, like building houses or constructing water connections, were posed. Before individual interviews and group mapping projects, we informed participants that:

> Your participation in this study will not hurt or help your current access to or management of the [water supply or sanitation] project. You will not be paid for being in this study. You may not directly benefit from this study, but we hope that other people will benefit in the future because we will know how to improve projects for all people.

Dialogue about the study direction was carried out with each NGO, and it is hoped that information from this study is useful to them. A copy of this research study, with a brief two-page summary, will be provided to both NGOs. This entire study is written to protect the anonymity of respondents. All participants were told they could complete individual interviews confidentially. All identifying names and locations have been changed to pseudonyms.

CASE STUDY NGO A
Organization Overview and WatSan Approaches

NGO A has been working on WatSan in rural and urban areas in one state in India since 1987. This organization originated with a concentration on rural development and focused on WatSan programs shortly after formation. NGO A began to encourage microcredit[8] for water connections and toilet construction in 2006. Their programs are funded through local and international NGOs, government programs and subsidies, microfinancing through independent bankers, and their own MFI[9]. From 2006 to 2008, they completed a massive

---

[8]   Microcredit is the delivery of small loans to economically-disadvantaged people for income and non-income generation purposes.

[9]   MFIs provide small loans, small savings, and other financial services to economically-disadvantaged people.

project in 158 rural villages to promote WatSan programs with funding from one charitable organization in India.

NGO A identifies the importance of empowerment of women and gender equality in their vision statement, mission statement, and project documentation. Their vision promotes equal gender rights and access to WatSan. Their mission envisages water, sanitation, and hygiene for all people with an emphasis on empowerment of women, marginalized communities, and children. In project documents for their 2006-2008 WatSan initiatives in rural villages, NGO A aims to foster sustainable WatSan programs through PRIs and Self-Help Groups (SHGs[10]). They believe SHGs of women members are effective to advance community-managed water, sanitation, and hygiene.

NGO A promotes collaboration between CBOs and local government for WatSan planning and management. They hope WatSan programs are self-managed after the NGO discontinues work in villages. To do this, they aim to strengthen CBOs and local government for WatSan planning, management, and awareness. Based on this research and observations, their recent strategies for supporting long-lasting WatSan programs include microcredit for WatSan and non-WatSan related purposes; collaboration with villages, CBOs and local government; and capacity-building for villages, CBOs, and local government.[11]

NGO A offers microcredit for WatSan and non-WatSan related purposes through existing SHGs. These SHGs are groups of women that are sponsored by NGO A. They have access to small loans for income-generation purposes and non-income generation purposes (e.g., wedding, sicknesses, education, household maintenance, water connections, or toilets). NGO A believes it is important that communities are able to access borrowed money from reputable, low-interest sources for income generation and WatSan projects. NGO A organized a Federation for SHGs. This Federation meets monthly as a forum for nominated leaders of

---

[10]   SHGs were first conceived of by Muhammad Yunus, founder of Grameen Bank, in the 1970s as a way to provide low-interest loans to small groups of women for income generation activities.

[11]   They also completed WatSan construction and repairs in the past. This is not a major part of current efforts, but they are still doing small projects such as constructing school toilets, installing hand-pumps, and renovating existing hand-pumps.

SHGs. NGO A recently started a non-profit MFI to offer loans for WatSan purposes to SHG members or family of SHG members. They issue loans for 24 months at 18-percent interest.

NGO A collaborates with villages, CBOs, and local government for WatSan initiatives. NGO A helps villages plan WatSan programs through PRAs[12]. All village members are invited to PRAs. NGO A works on creating CBOs and collaborating with CBOs. Initially, they promoted formation of Village Water and Sanitation Committees (VWSCs) for participatory WatSan management. These groups consisted of key people, elders or other leaders from the village. The VWSCs are now defunct. Instead, they created WatSan Groups (WSGs). Members of WSGs are self-nominated and pay a small monthly fee for participation. Members may withdraw money from a group savings for any need. WSGs are responsible for keeping villages free of open defecation (OD), completing small water repairs, and notifying the government of water problems. NGO A promotes collaboration between local government groups including PRIs, Panchayat Level Federations, and Village Development Committees.

NGO A offers capacity-building for villages, CBOs, and local government. For villages, they host camps on hand-washing, low-cost toilets, and proper garbage disposal. For CBOs, they conduct OD outreach, deliver hygiene and sanitation programs, and host World Water Day events. For CBOs and local government, they provide trainings on topics such as OHT operation, soak-pit and solid-waste management, kitchen gardens, and vermiculture.

Village Implementation, Empowerment, and Gender Equality

Village Background

Individual interviews and household surveys were carried out in one main village[13] that received WatSan interventions from NGO A through this study. This village is located in a panchayat with six other villages. Main sources of livelihood are agriculture and livestock. The village is surrounded by rice and banana fields. Households have annual incomes around

---

[12]   NGOs and development practitioners use PRAs (with methods like group maps, interviews, and transect walks) to incorporate ideas of communities in planning and managing resources.

[13]   Household surveys were also conducted in two nearby villages.

Rs. 12,000-50,000 (USD 256-1,067). The religion of all families is Hindu. Castes are Most Backward Caste[14] (MBC) and SC delineations. All SCs live on one side of the village, and MBCs live on the other side of the village. There are 117 houses built with different materials including concrete, mud, thatched-roofed, or tiled-roof. There are also colony houses. The population of this village is likely between 200 and 300 people.

The rural location of this village, coupled with widespread poverty, has led to a slow progression of WatSan interventions over the past twenty years. There was minimal electricity in the village roughly 30 years ago. Residents would fetch water from a local canal or a bore-well dug by the government. Water supply from the bore-well was limited and brackish. Sometimes people would supplement their supply by taking water from agricultural wells in fields. The village had three hand-pumps installed by the government, but they were not working properly. In 1999, the government constructed a large overhead tank (OHT) which increased water storage for the village, but WatSan conditions began to improve around eight years ago. The government erected 14 street posts for water in 2001. People started building individual water connections in 2002. Around 2006, an international NGO and NGO A provided microcredit for water connections and toilets. About 45 water connections and 70 toilets were constructed through this initiative. Toilet construction continued later through SHG loans. Some people constructed toilets with savings. In 2006, water infrastructure was improved (renovation of bore-wells, hand-pumps, and pipelines) by NGO A. Today in the village, there are 14 community stand-posts, 62 individual connections, and 102 toilets. Water is provided twice a day - once in the morning and once at night - for one to three hours. Water supply is generally consistent except during low-rainfall months of April, May, and June.

Several types of CBOs were created to counter poverty and lack of WatSan in the village. SHGs were formed by NGO A to provide microcredit for income and non-income generation purposes. The first two SHGs started in 2001, and the second three SHGs started in 2002. SHGs are split by caste boundaries. All SCs are in an SHG together, and all MBCs are in an SHG

---

[14]   MBCs are castes identified by state government as encountering prevalent economic, social or education difficulties. They are offered special government programs, schemes, and reservations to help alleviate them from their disadvantaged positions in society. They are considered better off than SCs in caste hierarchy.

together. The government and NGO A advised caste division of SHGs to ensure that SCs could receive government subsidies. There are five SHGs with a total of 67 members (two SC groups and three MBC groups). In 2003, SHGs started providing loans from NGO A for toilet construction. Around 2005, NGO A sponsored a VWSC in the village. They completed OD patrols, provided hygiene education, monitored water supplies, and motivated people to build toilets. Members of the VWSC paid a monthly subscription fee. Around 2007, the VWSC changed into a WSG. There are 15 members on the WSG. There is a small monthly subscription fee, and members can submit savings. The WSG monitors OD, fixes small water problems, take donations to build toilets for poor people, and sends official letters to the PRI about major water problems. NGO A believes CBOs are a way to promote empowerment in WatSan because they allow various people to access WatSan resources and have a say in WatSan planning and management.

Empowerment Potential

The Empowerment Potential Index (EPI) indicates levels of access to WatSan, access to WatSan planning groups, and access to WatSan management groups for respondents. The ability to access these components allow people greater potential for engaging in the empowerment process. EPI information was collected from household surveys in the main village and two nearby villages. The EPI does not define types of participation in WatSan planning and management by respondents (i.e., it does not tell us if women have active or nominal participation in decision-making). The EPI does find mean values of respondents with access to WatSan, access to WatSan planning groups, and access to WatSan management groups. This can give us a general idea of the empowerment potential related to WatSan for respondents in the villages.

A mean of EPI ratings for respondents, women and men, in three villages receiving WatSan interventions from NGO A equals 2.44 (Table 4). This might indicate respondents have moderately decent access to WatSan, access to WatSan planning groups, and access to WatSan management groups through interventions by NGO A. Women respondents with a mean of EPI ratings at 2.65 fared slightly better than men respondents with a mean of EPI ratings at 2.10. This could validate the knowledge that NGO A promotes SHGs for women in

villages. These SHGs allow women to take loans to construct toilets and participate in WatSan planning and management groups. SC respondents had a minimally higher mean of EPI ratings at 3.00 than non-SCs at 2.57. NGO A has created separate SHGs for SC women in the communities. This has possibly led to SC respondents having modestly higher mean EPI ratings.

Table 4. Empowerment Potential by Population Category - NGO A

Population Category	Mean Rating
Females	2.65
Males	2.10
SCs	3.00
Non-SCs	2.57
Total of NGO A	2.44

The mean of EPI ratings was compared across respondents with different individual incomes. Respondents with annual incomes greater than Rs. 37,000 (USD 804) have a slightly higher mean of EPI ratings than those of lower incomes (Table 5). This could be because they can afford to take and repay loans for construction of individual water connections or individual toilets.

Table 5. Empowerment Potential by Annual Income - NGO A

Annual Income in Rs.	Mean Rating
<18,000	2.31
19,000-36,000	2.04
37,000-54,000	3.20
>55,000	3.00

The EPI cannot be used alone to assume empowerment in villages. It only represents increased empowerment potential for respondents in relation to WatSan programs. Individual interviews conducted in the main village helps provide a better understanding of the empowerment process for women and gender equality related and unrelated to WatSan.

Empowerment: Self-Worth, Capacity, and Transformation

Individual interviews were conducted with six people - three women and three men - in the main village. Participants were asked to talk about the history of WatSan changes in the village and expand upon these topics. Afterwards, only interviews with women were coded to understand self-worth, capacity, and transformation to comprehend the empowerment process for women. The least talked about theme was self-worth (referenced 12 times from all 3 female participants). The most mentioned theme was capacity (referenced 31 times from all 3 female participants) and transformation was not far behind (referenced 27 times from all 3 female participants) (Figure 3). These themes were analyzed to see how they were related and unrelated to WatSan programs.

Figure 3. Empowerment Themes in Individual Interviews - NGO A

Empowerment Themes in Individual Interviews
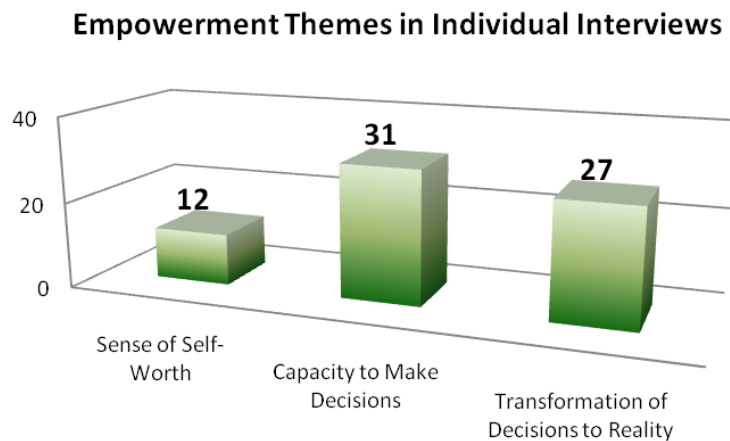
Self-Worth

Themes of self-worth were mainly about financial security on the household level through accessing loans for non-WatSan purposes from an SHG or WSG. In general, a level of financial freedom on the household level was achieved through these loans. Two different women in individual interviews mention:

> Even when we were earning money, our husbands would take away the salary and keep it for themselves. They would not give it to us. On the contrary, they would not be worried about what was happening in the house or house management. So it was fairly strong how it was one factor which drove me to **come to this level.**

For every little reason, I had to go to my husband. To ask even for, even if to buy little eats for eating, for giving it to the children, and all that, I had to depend on my husband. We were almost treated like slaves by the husbands. So joining, being in a woman's group, I enjoy the benefit for whenever I want to spend money for a certain reason, like I can always take a loan and spend that money, and I can always pay it back. **I don't have to depend on my husband**.

Through these groups, women respondents access loans for household projects, for children's snacks, or for children's studies. They were proud to access money and make financial decisions in the household. This allowed them a degree of autonomy.

The second most mentioned topic in connection with themes of self-worth were related to WatSan access and sharing WatSan awareness. One MBC woman was pleased to emphasize, "Yes, we were one of the first families that brought this to the village. The first twenty-two, patch of twenty-two toilets." She emanates a sense of pride at having a toilet built with microcredit from an SHG:

So after that only, then everybody understood the meaning behind it and then slowly one after the other everybody realized the importance and the need for a toilet, we were able to build a toilet, and today **we are happy** that we don't run all around.

One SC woman, who was a leader of the first SHG in the village, talks about becoming brave in order to teach others about WatSan:

By constant trainings of NGO A, you know - the animator trainings, the entrepreneurial trainings and the various kinds of training through that - **empowers me to knowledge**. And that knowledge which was put into me has opened up my eyes of understanding. And that made us, you know all the groups in this village, **take a bold stance** against anybody who speaks ill against water and sanitation conditions.

Another less mentioned topic in connection with themes of self worth was related to finding joy in cooperation with other women. The same SHG leader states she started the group because "when women come together, even after forming the groups, we found that there was joy. All the women who came there were almost like-minded". Another woman replies she joined a WSG because "it also gives me a chance to serve my community".

Capacity

Themes of capacity were largely associated with women being able to make financial decisions at household and community levels through accessing loans from an SHG or WSG. One SC woman leader of an SHG says:

> How long will I still have the same old rugged job? Can I think of becoming an entrepreneur? Starting a small enterprise where a buyer can also make an additional income so **I can support my children's studies even if they want to go to a higher level.** Because earlier it was not so easy when we were dependent on the husbands income alone for college and all that, a higher education and all that.

This statement represents feelings echoed many times. After having money stolen from her by a family member, a young MBC woman wanted to learn banking and joined a WSG. She states, "I can depend on that institution, and that institution can help me go to the bank." A couple of women also mentioned making decisions to use loans for charitable purposes. This might point to capacity to make decisions on the community level. SHGs give treats to children on special holidays and loan money to disadvantaged women:

> **We [in SHGs] have chosen to work with children,** especially during independence days (the public days). We would also buy stationary for poor children who can't afford to buy pencils, notebooks. So we would go ahead and do that kind of support to children, buy them sweets on those days (special days).

The second most identified theme of capacity, although not nearly as much as financial decisions, was related to WatSan decisions. These declarations of making WatSan decisions were in correlation with participation in an SHG or WSG. They talked about the importance of loans for WatSan and raising WatSan awareness.

> Okay, **through the SHG's**… … **we were able to build a toilet and a water connection. We've also given loans** from the SHGs savings to people who did not apply during the time NGO A was offering loans and other products for building toilets.

> **Being a part of the WSG, we used to go about driving people who were doing open defecation** in and around the villages. And we used to clean the OHT periodically, and pumps, and all that stuff. And if there was any maintenance problem coming up, we would go as a gang and represent it to the PRI.

The least noted theme of capacity was the importance of SHGs as a venue to lobby political authorities. Only one woman said: "We spoke to the government people, the officials, and we were able to mobilize and get things done." In her view, this represents an increased capacity to initiate change on the political level.

Transformation

Themes of transformation pertain to financial decisions on household and community levels through loans from SHGs and WSGs. Women transform their financial decisions to reality by using money to become more independent in the household.

> My daughter was married and for the making of the big ceremony **I was able to draw money from the SHG and spend for the function**. We make everything as a big function. We invite about three hundred people and cook food to give to them and, you know, all that stuff. So for that I needed money so I was able to draw from the SHG a loan for that.
>
> So joining, being in a woman's group, **I enjoy the benefit for whenever I want to spend money for a certain reason like I can always take a loan** and spend that money, and I can always pay it back.

Women were also able to use loans to help others. One woman says, "If there was any desperate need - financial need - in a family, we would all come together, agree on a common decision, and support them through the financial loan package." Two other women talk about helping others in the community through charitable support. One SHG of SC women helped a woman afford to get medical treatment:

> As women, when we grew up together a part of the SHG, we had savings in the bank. And one women, who is in this group, who came into this village to live. She got married to a man from this village, and she moved into this village. And that girl had a kind of, something like a, cancerous tumor in her throat and she had problems with... and drinking water. She had to drink it slow and all of that. So she needed treatment to get that thing off. So **we decided to pull in the savings and give it to her** to be used for medical purposes.

The second most found theme of transformation was related to WatSan decisions. These decisions were associated with accessing loans from SHGs and WSGs for WatSan purposes and sharing WatSan information through SHGs and WSGs:

Okay, through the SHG, my mother was a source... we were able to build a toilet and a water connection. **The SHG secured loan for us for the water and for the toilet**. We've also given loans from the SHGs savings to people who did not apply during the time NGO A was offering loans and other products for building toilets.

The least noticed theme of transformation was in connection with the importance of SHGs as a venue to lobby political authorities. The same SC woman states: "Because as a group when you go and represent your case to the government you can always move things and get it done." In her SHG, she lobbied for funding to build 20 houses for SCs, a shared SHG meeting center, and to provide a stipend for handicapped people in her village.

Summary: Self-Worth, Capacity, and Transformation

A summary of individual interviews show women join in the empowerment process as measured through expressions of self-worth, capacity, and transformation in a variety of ways on household, community, and political levels. All three themes had the same topics mentioned frequently. The most mentioned topic was the ability to make financial decisions on the **household** level through microcredit from an SHG or WSG. Loans were taken for purposes such as paying for weddings, completing household improvements, or buying treats for children. Some of these loans were taken for charity work on the **community** level. The prevalence of themes in the realm of financial decision-making on the household and community levels show women participants most experienced empowerment through accessing loans for non-WatSan purposes through SHGs or WSGs. It must be taken into account that all women participating in individual interviews were members of these groups. The second most mentioned topic with all three themes of the empowerment process was making WatSan decisions through SHGs and WSGs through accessing loans and sharing information. Women were able to access loans through SHGs and WSGs to build WatSan connections. This allowed them to experience empowerment related to WatSan access and decision-making on the **household** level. Women were able to share WatSan awareness with others in the village. This also allowed them to experience empowerment related to WatSan knowledge and decision-making through sharing awareness on the **community** level. Both building WatSan connections with loans and sharing WatSan awareness took place through SHGs and WSGs supported by NGO A.

EPI, Individual Interviews, and Empowerment in WatSan

EPI results (access to WatSan, access to WatSan planning groups, and access to WatSan management groups) are compared to results from individual interviews (self-worth, capacity, and transformation) for an enhanced comprehension of the empowerment process for women in relation to WatSan. Women respondents have a mean of EPI ratings at 2.66. Using this as a starting point for understanding empowerment potential, one might assume women are relatively well positioned for experiencing the empowerment process in relation to WatSan. The higher mean of EPI ratings makes sense because NGO A has been working in the WatSan sector for about twenty years. Access to WatSan, through loans from SHGs and WSGs, was mentioned as part of the empowerment process in individual interviews. This represents increased self-worth related to access to WatSan and WatSan decision-making on the **household** level. Access to WatSan planning groups, through participation of women in SHGs and WGs, was mentioned as part of the empowerment process in individual interviews. Women participants were able to plan WatSan connections on the **household** level by taking loans and constructing water connections and toilets. Access to WatSan management groups, through participation of women in SHGs and WGs, was mentioned as part of the empowerment process in individual interviews. They were able to manage WatSan through attending WatSan trainings and sharing WatSan awareness on the **community** level.

Given this preliminary examination of the empowerment process within NGO A, there are three particular areas of interest. First, participation of women in planning or managing WatSan systems on a political level was not mentioned during individual interviews with women. One woman mentioned the ability of SHGs to get grants and subsides for other purposes, but not related to WatSan. This does not imply women participants in SHGs and WSGs do not participate in the political realm regarding WatSan, but it is something to consider for further exploration. In all regards, NGO A staff said SHGs attend local government meetings to talk about WatSan, and WSGs present official letters to PRIs about WatSan problems. Second, all topics related to themes of the empowerment process are in association with participation in an SHG or WSG. There is a monthly fee to participate in both of these groups. This might allow some women in the community to participate in the

empowerment process but leaves out portions of the community unable to pay or without time to participate. Third, themes of self-worth were found least in review of individual interviews . There are only 12 references to self-worth themes in individual interviews with women compared to 31 references for capacity and 27 references for transformation. References to self-worth were mentioned most in connection with financial empowerment on the household level through microcredit for non-WatSan purposes. These results could be from the way that individual interviews were set-up (see Appendix A) or the criteria for understanding self-worth (as defined in Table 3). More research would be helpful to understand if women felt self-worth related or unrelated to the WatSan program in this village.

Gender Equality Overview

Themes of gender equality/inequality were coded in individual interviews conducted with women and men in the main village. These themes were classified by gender equality/inequality occurring in the past and gender equality/inequality occurring in the present. The following topics were mentioned by participants - education, financial, land ownership, production economy, sanitation, and water (in no particular order) - under themes of gender equality/inequality. Themes of gender inequality occurring in the past were mentioned more (6 topics mentioned among all interviews) than themes of gender inequality occurring in the present (4 topics mentioned among all interviews). Themes of gender equality occurring in the past were not mentioned, and themes of gender equality occurring in the present were mentioned (10 topics mentioned among all interviews) (Figure 4). This might indicate occurrences of gender inequality are slowly decreasing over time as seen by participants in individual interviews. It also could show that gender equality is slowly increasing over time as experienced by participants. It is necessary to understand subjects of comments related to gender equality/inequality to see which topics are increasing or decreasing.

Figure 4. Gender Equality Themes in Individual Interviews - NGO A

Gender Equality Themes in Individual Interviews
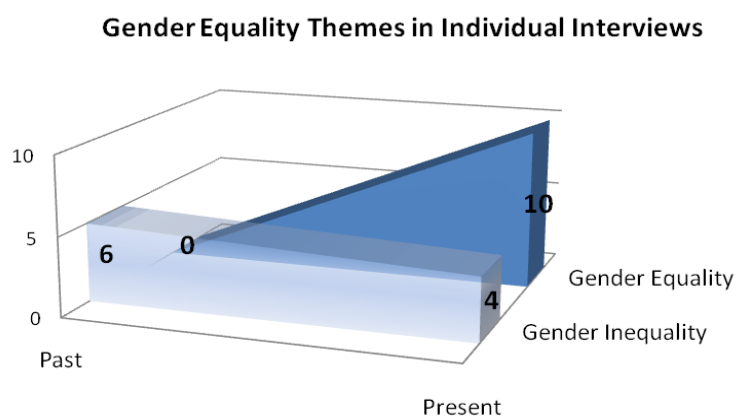
The two topics of greatest decrease in gender inequality were related to financial decisions on the household level and fetching water on the household level. Two women mentioned financial inequality on the household level occurring in the past and no one mentioned it occurring in the present. Two women said they were treated like "slaves" by husbands concerning household finances. One of them declared:

> It was poverty what first drove us because every little thing we had to depend on was our husbands. When the children wanted to buy something to eat we had to say, sorry I don't have money I'll have to ask your father to give you money so the male dependency in the family was also taking its toll.

Two women mentioned having female family members fetch water in the past. This does not indicate more men are fetching water now. The occurrence of this response is most likely because the question was not directly asked in all interviews or fewer people are fetching water due to WatSan projects in the village.

The one topic of greatest increase in gender equality occurring in the present was related to participation of women in the production economy. This was mentioned by four participants in individual interviews. One woman ran a store in the village for supplemental income. One man says, "Yes, supplemental income, but mostly my wife takes care of that." Another woman had a daughter who works at a nearby company:

> Now one of my daughters works for WholeCity Company which manufactures lingerie

and all that stuff. So because the family was also suffering she stayed after her studies, schooling, she completed her schooling and went on to work for WholeCity which manufactures undergarments and all that stuff. So she is working with them and she is taking care of agriculture.

As common in the community, one woman "is also doing farm labor work on a daily basis." The other two topics of greatest increase in gender equality occurring in the present were related to financial decisions on the household level and sanitation awareness by men and women. One woman said:

And we all know that when we come to a place where we can look up to this particular entity for a brand new source of help to alleviate ourselves from this poverty. So, they looked at the SHG as a new source of revenue for them, so that they can earn at the same time they can spend, which was not possible earlier. So that's one reason...

Some male participants were aware and concerned about the challenges of OD for women:

And one such meeting, I recall how people spoke about women. They go through so much pain when they go through open defecation. And the challenge was thrown back to the men of the community saying don't think you think it is your own idle, it is your wife, your daughter, your sister, your mother, or somebody who is a part of your family who goes and sits and does this act (attending the nature's calling) open. And not only that, but every time they have to go (in the day, in the mornings, by the field-side or by the road-side, even the nights) all kinds of vehicles pass by and it rattles with the lights on they have to stand up. So the process can hamper the free flow of defecation in a woman, and that can result to a lot of - what do you say - sickness in the woman's body. Especially in her uterus and all that.

Empowerment and Gender Equality in WatSan

This section will seek to understand if empowerment of women directed gender equality in relation to WatSan in the main village according to participants in individual interviews. Themes of gender equality for water were not mentioned as occurring in the past or present. Themes of gender equality for sanitation were mentioned as improving over time by two individuals. They were mentioned in terms of having better access to sanitation sources, and men being aware of challenges of OD for women. NGO A helps provide better access to sanitation through loans for building toilets, and NGO A offered trainings in which some men were learning of OD challenges for women. It would appear that gender equality, through

perceptions of participants in individual interviews, occurred through interventions of NGO A. Hence, gender equality occurred through top-down efforts that subsequently promoted empowerment of women. It seems empowerment of women was necessary to sustain the WatSan program and help promote gender equality for WatSan on household and community levels. Women were participating in the empowerment process by accessing loans for WatSan and sharing WatSan awareness in the community. It could be assumed that NGO A's interventions did influence gender equality in WatSan through top-down approaches, but the empowerment of women continued to influence gender equality in WatSan using approaches put in-place by NGO A.

Sampling Strategy and Limitations

Twenty-seven respondents associated with NGO A (17 women and 10 men) completed household surveys. Six participants completed individual interviews in the main village (3 women and 3 men). For the most part, participants in individual interviews were picked by NGO A and represent individuals receiving WatSan benefits. The translator was a male employee of NGO A for individual interviews. This may have resulted in women a) feeling uncomfortable communicating with a male employee about WatSan, b) the male employee interpreting responses with his perspective of WatSan program goals, or c) information about empowerment and gender equality being lost in translation. As a final point, the small number of people participating in individual interviews makes this a non-statistical sample. It is difficult to generalize these data beyond the scope of participants.

CASE STUDY NGO B
Overview of Organization and WatSan Approaches

NGO B was launched in 1947 by a woman and a partner to promote development in rural areas and empowerment of rural people. This organization has five central objectives of social welfare, education, health care, rural industries, and village involvement. In the beginning, they offered medical services, opened homes for children, and assisted villages in establishing micro-industries. More recently, they began helping villages gain capacity to maintain and manage WatSan systems. From 2006 to 2008, they received funding from a

charitable organization in India to support water programs in twelve villages. From 2009 to 2011, they received funding from the same charitable organization to support sanitation programs in five villages.

NGO B acknowledges, in organizational values and project documentation, the significance of empowerment for women and gender equality. This establishment was founded by a woman, and she always emphasized serving women and children. NGO B embraces the concept of Swaraj[15] which means "self-rule" as put forward by Mahatma Gandhi. This concept encompasses self-help, local tradition, and non-violence. Their mission statement concentrates on advancing healthcare and education, allowing people to find and enhance strengths, and supporting livelihoods through self-management. In WatSan project documentation, NGO B describes empowering women and gender equality in WatSan planning and implementation.

NGO B's main goal for WatSan initiatives from 2006 to 2011 is to create programs that improve WatSan access and are managed by villages into perpetuity. They describe these as self-managed WatSan systems. NGO B fosters self-managed WatSan systems by creating proper use and maintenance schemes, and facilitating technical and financial management. They create proper use and maintenance schemes by repairing water structures, raising WatSan awareness, and forming and training WatSan CBOs. They support technical and financial management by collecting a portion of capital costs for WatSan repairs, encouraging stand-post water-tax collection, and providing loans for toilets. Based on this research and observations, their strategies for WatSan programs include repairing water structures; improving WatSan awareness in villages; forming and training CBOs for WatSan; and encouraging financial sustainability of WatSan systems through village involvement.

NGO B repaired water structures in villages through funding provided by a charitable organization with a portion of costs covered by villages. NGO B repaired water storage structures. They renewed other parts of water conveyance systems including pipelines, gate

---

[15]   Mahatma Gandhi was an influential leader in the Indian independence movement liberating India from British colonization. He pioneered concepts of non-violence for social causes and swaraj or "self-rule". It could be argued that the concept of Swaraj exemplifies the concept of empowerment.

valves, stand-posts, motors, hand-pumps, open-wells, and motors. NGO B also constructed fencing around water systems, and they welded shut pit taps (i.e., illegal entries to water supplies) to normalize water flow and pressure to legal water-access points

NGO B held a variety of awareness activities and trainings for villages. They hosted general informational sessions on challenges for women related to sanitation, waste-water disposal, and solid-waste disposal. NGO B offered other awareness activities on water quality and water storage. Also, they oriented younger students to WatSan through programs at schools. They distributed personal hygiene kits with tissues, soap, nail clippers, and combs to selected classrooms of primary-school students.

NGO B formed and trained CBOs for WatSan. They encouraged establishment of three primary groups. VWSCs, the first group, are responsible for planning, monitoring, and financial management of water systems. VWSCs are located in each panchayat with 20 elected members, and there is a 33 percent reservation for women members. Water Groups (WGs), the second group, are responsible for WatSan management by monitoring local water points, promoting hygienic use of waste-water, and reporting problems to VWSCs. WGs are located in each village with 15 members (mostly women from SHGs). Technical Groups (TGs), the third group, are responsible for O&M of WatSan systems. TGs have six members and are located in each village. All three of these groups are interlinked with SHGs and PRIs. NGO B offers trainings to all CBOs. TGs receive technical trainings on hand-pumps, power pumps, and plumbing. Other CBOs receive non-technical trainings on project orientation, VWSC training, WG training, financial management, and general management.

NGO B encourages villages to take financial responsibility of WatSan systems. For WatSan repairs, they solicit 10 percent of capital costs from villages. SHG members collect this money from the people. NGO B tried to solicit a water-tax at stand-posts of Rs. 5 (USD .11) each month. They also encouraged people to pay their individual water-connection fee of Rs. 30 (USD .64) each month. For sanitation, NGO B distributes loans from a revolving fund for toilet construction. They distribute five loans at a time in a village. Most toilets are constructed at a cost of Rs. 4,000 (USD 86.10). Because the government sometimes offers a Rs. 2,200 (USD 47.35) subsidy for toilet construction, NGO B provides loans from the revolving fund at Rs.

1,800 (USD 38.74). Individuals repay these loans over a period of six months at Rs. 300 (USD 6.46) a month.

Village Implementation, Empowerment, and Gender Equality

Village Background

Individual interviews and household surveys were conducted in one main village[16] that received WatSan interventions from NGO B through this study. This village is located in a panchayat with nine other villages. The chief occupation here is agriculture. Crops include grapes, flowers, and onions. Households have annual incomes around Rs. 7,000-1,10,000 (USD 150-2,350). The religion of most families is Hindu. The religion of one family is Christian. Castes in the village are MBC, Other Backward Caste[17] (OBC), and SC delineations. SCs live together on one side of the village, and MBCs and OBCs live together on the other side of the village. There are 77 houses built with different materials including concrete, mud, thatched-roofed, or tiled-roof. There are also colony houses. The total population is about 276 individuals.

Since the village was settled in the 1950s, the water situation has been challenging. Soon after people moved here, an open-well was dug by the government. Water levels began to drop after one or two decades. There were commonly fights over water at this open-well. MBCs did not like SCs to use the well. A bore-well with a hand-pump was eventually drilled. This bore-well supplied water to the entire village. The quantity of water was sporadic, and there were many fights over water at this hand-pump. The bore-well was also connected to a groundwater level reservoir (GLR) in the middle of the village. The GLR has a large cement tank with spigots. There is some water available in the GLR, but it is bad-quality water and only used for washing and bathing. For the most part, water at the hand-pump decreased significantly.

---

[16]   Household surveys were also conducted in one nearby village.

[17]   OBCs are castes identified by state government as encountering prevalent economic, social or education difficulties. They are offered special government programs, schemes, and reservations to help alleviate them from their disadvantaged positions in society. They are considered better off than SCs and worse off than MBCs in caste hierarchy.

Gradually, water conditions in the village began to improve. One Sintex (small tank) was connected to the bore-well and two overhead tanks (OHTs) were built for water storage. The OHTs are connected to a water source from nearby mountains. Water quality in the OHTs is superior to water quality of the bore-well. OHTs are the main water supply for the village. In 1999, the governments built five stand-posts. Around seven years ago, people started building individual water connections. Today, there are around 42 individual water connections and 5 stand-posts. Approximately five families share each stand-post, and everyone else has individual connections. Water is available once every three days for less than two hours.

Sanitation conditions were always rough and continue to remain difficult. There were practically no toilets 30 years ago. Everyone would defecate in fields, in an empty canal, or in distant forests. Toilets were built over the last few years. There were 20 toilets in the vicinity of the village before NGO B started WatSan programs, and they assisted with construction of 30 additional toilets. Many toilets were erected using revolving loans from NGO B. This village planned to build a community toilet near the canal, but the plan was abandoned.

Several types of CBOs were created in this village to respond to a lack of WatSan and widespread poverty, but awareness of these groups is mixed. Participants in individual interviews were quite aware of SHGs. NGO B supports three SHGs in this village for income-generation and WatSan activities. SHGs do not usually distribute WatSan loans, but they work on WatSan projects. For example, two SHG members went around and collected a Rs. 15,000 (USD 322.86) contribution for WatSan renovations. There are also SHGs not supported by NGO B in the village. Most SHGs are formed of MBC or OBC people with relatively few SC people. Participants in individual interviews were not very aware of new groups, WGs and VWSCs, created by NGO B for WatSan planning and management. NGO B helped form one WG in this village. This group is supposed to consist of women SHG members. One woman thought she was a member of the WG, but she said it was a group to take loans for home improvements or other purposes. She seemed confused. NGO B helped form one VWSC in this panchayat. The majority of participants in individual interviews had no awareness of this group.

Empowerment Potential

The EPI indicates levels of access to WatSan, access to WatSan planning groups, and access to WatSan management groups for respondents. The ability to access these components allow people greater potential for engaging in the empowerment process. EPI information was collected from household surveys in the main village and two nearby villages. The EPI does not define types of participation in WatSan planning and management by respondents (i.e., it does not tell us if women have active or nominal participation in decision-making). The EPI does find mean values of respondents with access to WatSan, access to WatSan planning groups, and access to WatSan management groups. This can give us a general idea of empowerment potential related to WatSan for respondents in the villages.

A mean of EPI ratings for all respondents, women and men, in two villages receiving WatSan interventions from NGO B equals 1.53 (Table 6). This might show respondents from NGO B have worse access to WatSan, access to WatSan planning groups, and access to WatSan management groups. A mean of EPI ratings of women is minimally higher at 1.64 than a mean of EPI ratings of men at 1.36. This could indicate women respondents felt they took part in a WatSan planning group or a WatSan management group through an SHG or WG. A mean of EPI ratings for SCs is 1.79 when compared with non-SCs at 1.36. It is unclear why SCs have a higher mean of EPI ratings because there are few SHGs for SCs (and as a result few SCs on WGs).

Table 6. Empowerment Potential by Population Category - NGO B

Population Category	Mean Rating
Females	1.64
Males	1.36
SCs	1.79
Non-SCs	1.36
Total of NGO B	1.53

Mean of EPI ratings were compared for respondents across different individual incomes. Respondents with annual incomes less than Rs. 18,000 (USD 383.47) had the highest mean of EPI ratings at 1.71 (Table 7). Respondents with annual incomes greater than Rs. 55,000 (USD

1171.71) had the lowest mean of EPI ratings at 1.33. It is difficult to decipher these results. During semi-structured interviews, several individuals in the village said they had no desire to participate in WatSan planning groups or WatSan management groups which would reduce the index scores of those groups.

Table 7. Empowerment Potential by Annual Income - NGO B

Annual Income in Rs.	Mean Rating
<18,000	1.71
19,000-36,000	1.25
37,000-54,000	1.63
>55,000	1.33

Empowerment: Self-Worth, Capacity, and Transformation

Individual interviews were conducted with thirteen people - seven women and six men - in the main village. Participants were asked to talk about the history of WatSan changes in the village and expand upon these topics. Afterwards, individual interviews with women were coded for self-worth, capacity, and transformation to understand the empowerment process. The least talked about theme was self-worth (referenced 16 times from 6 sources). The most discussed theme was capacity (referenced 29 times from 6 sources) with transformation following (referenced 19 times from 6 sources) (Figure 5). There was one woman who did not mention themes of the empowerment process. The three themes were analyzed to see how they were related and unrelated to WatSan programs

Figure 5. Empowerment Themes in Individual Interviews - NGO B

Empowerment Themes in Individual Interviews
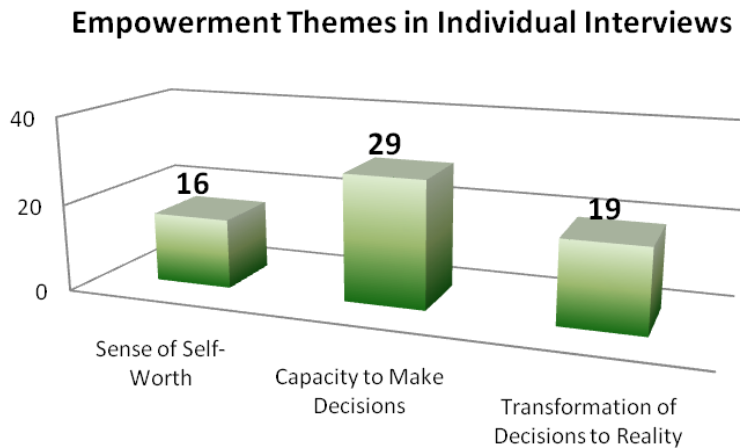
Self-Worth

Themes of self-worth were related to water access and water quantity. Women were happy or felt great satisfaction to have closer access points and more reliable quantities of water. These two comments show general sentiment:

> …when I was young, I was pretty much in poverty and I had problems for water and everything, but now I am slowly **coming up in life** so… actually, there is excess water now.

> When I was very young, it was very difficult. Even if we found dead animals like snakes and all, in the water, we would still just filter the water and drink it because it was so unavailable. But, now, the water situation is **very good**.

Another woman is pleased to have her own connection to avoid fighting with neighbors. Several people mentioned past and current disputes over water. This SC woman describes reasons she wanted an individual connection:

> It's much better now than it was because now like I have a good water system and all that, and I have built a house and property and all that. So I am now **happier** than when it was twelve years ago, and I had to go to that hand-pump and like pump water, and a bad water supply and all that… Yeah I'm **happy** with it. There is still water that comes through my tap even after they turned it off… I got it because I

didn't want to get into fights with my neighbors because like waiting for water, and I didn't want to go into a public tap because all I used to get was like four pots of water.

Less so, themes of self-worth were alluded to during comments of non-WatSan development projects in the village. One MBC woman was proud of her government funded cook-stove, and an another OBC woman was happy for better roads. Interestingly, when the MBC woman describes pride for her cook-stove, she talks unenthusiastically about the SC community. She said:

> No, the refill is three hundred and twenty five rupees every time we want to refill it [the fuel container for the cookstove]. So, you know, the forward community (which is all these kinds of people), is the kind of community that's focused on, like, **having a better life** whereas if you visited the SCs, they're like even if they have money and government jobs they still don't really care to, like, live up. And they just live like in smaller houses with just less of a care of living up and having a better lifestyle.

Themes of self-worth were least declared in relation to sanitation. One woman repeatedly espoused benefits of toilets. She was a young SHG member from the MBC community who shared a toilet between her joint-family[18] of three families. They are the only joint-family in the village to share a toilet. She comments:

> Because people were all cultivating and they weren't allowing us to go to the fields. So **we would feel awkward going into someone's cultivated field. So we would much rather have a toilet**… We had a variety of reasons for building the toilet before they were built… it's a good thing because we don't have to go through difficulties like going out at night, and having difficulties going in the night, and being swarmed by insects, or also we have this belief like when women are having their menstrual cycle, some uh… spirits would come and catch us kind of thing. So now that doesn't happen. And we can cook well, like if we are cooking or need to do something there is a toilet close by. So it's accessible and we don't have to worry about our work stopping.

Capacity

Themes of capacity were consistently mentioned in connection with talking to government officials about water issues. Though this capacity was usually expressed in a one-one-one

---

18   A joint-family (or HUF) under law is a multi-generational family living in the same home or vicinity sharing resources, decision-making, and income. This type of family is formed with a father, mother, and their adult sons with wives and children. Unmarried daughters or widows will also live in a joint-family arrangement.

situation talking directly to the vice-president of the PRI as he walked through the village. Women usually refer to him as president not vice-president. He was the president of the PRI in the past, but now an SC woman from another village was required by the government to fill the role. Women state:

> He was here even yesterday morning. So he comes and visits us from time to time. So we have access to him…**We ask him everything**, even if there are family problems, and he fixes everything.

> Even now, I have to keep asking for the water to be opened up. So, that kind of changes, I would be happy… I have to go fight for the water, the tank… **I'll have to tell the president**, the president has to go and get the open-well access open.

One woman said SHGs were effective at communicating with the panchayat as a whole.

> So basically all of the SHGs got together and told the village they needed better water supply, and so then that guy would go and talk to the right people in the government and they would just get it done… Only like two or three people have joined, but most people are **used to the SHG as a kind of way to talk to the president**.

One MBC woman's family wrote a letter to Parliament about water problems: "I, my family, we wrote a petition saying we were having a water problem and the people [the government] restored it." Another woman attends Gram Sabha (village meetings) but does not speak up, "I don't generally participate. I listen to what is being said and come back."

The second most mentioned theme of capacity was related to accessing loans for non-WatSan financial purposes through SHGs and WGs. One woman says she joined an SHG because "…it's easy access to loans." Women use these loans for "food duration [food supply] and all that, then they borrow from the SHG and repay" or "anything for house and expenses and that kind of thing." Lastly, one woman says she is able to take out loans from a WG. She states:

> I'm a member of the Water Group. What it does, we are able to save 55 rupees a month, and then take out loans whenever anybody wants… I don't know why it's called that [a Water Group]. I don't know those details. **I go there. I pay whatever money I can. And I'm able to access loans from it**.

The three least discussed themes of capacity were related to WatSan training and awareness, WatSan household decisions, and loans for toilet construction from NGO B. One SC woman

said, "So a couple of months ago NGO B had a meeting talking about awareness, and about itself and the work and all that, and all of the Scheduled Caste had to be there." NGO B helps people build toilets by providing technical information, "NGO B helped us built it." A couple of women have increased capacity to make household WatSan decisions. One MBC woman even tries to have her husband fetch water:

> I have an individual water connection, and I actually loathe to, even to now, get this water that's easily accessible. I kind of loathe to it. Because I like, I don't want to exert myself anymore. I don't need to exert myself, and I don't have to exert myself. **So I kind of try to get this guy to go, my husband, to go and get my water because I now have an individual connection.**

One SC woman has increased capacity through these loans for toilets, but states she has been waiting awhile to receive her loan:

> **It all because of this new funding that we are able to build toilets.** So we want a toilet, but five people have gotten it. So we are waiting on the money to come back from some people so that they can be put into my loan. So I'm first in line to build a toilet.

Transformation

Themes of transformation were mostly related to women making water decisions through communication with government officials. This overlaps with capacity themes mentioned previously. Women participants in individual interviews do not appear to feel shy to talk to the vice-president, and they believe he is able to help them transform decisions to reality. This comment summarizes common thoughts, "Yes we talk to him directly, and then he does whatever we tell him." Another MBC woman felt her petition to Parliament requesting better access to water made a difference. "Yeah, all this change started happening only because we wrote the petition," she says. Another MBC woman states SHGs are able to communicate with the PRI on WatSan decisions:

> So basically all of the SHGs got together and told the village they needed better water supply, and so then that guy would go and talk to the right people in the government and **they would just get it done.**

The second most found theme of transformation was related to the ability to take loans for non-WatSan related purposed. This results in the increased ability to transform financial decisions into reality on the household level. One woman states, "I am able to access money when I want it, for lower interest."

The least mentioned theme of transformation was in connection with influencing WatSan decisions in the household. Two women decided to have water connections in the house, and two women decided to have toilets in the house. They were able to initiate these WatSan changes in the household:

> She has a big family so she didn't want all those problems, and that's why she wanted to **put in an individual connection**.

One woman participant in individual interviews received her loan for building a toilet from NGO B, "So they took a loan from NGO B [to build a toilet]."

Summary: Self-Worth, Capacity, and Transformation

A summary of individual interviews show women take part in the empowerment process as measured through self-worth, capacity, and transformation indicators at household, community, and political levels. Unlike NGO A, there were not two primary topics that pervaded all three themes of the empowerment process. Instead, themes of self-worth had two unique components while themes of capacity and transformation shared other concepts. Themes of self-worth revolved around women participants being happy with increased water access and water quantity through water schemes provided by the government and renewed by NGO B. This allowed them to experience a part of the empowerment process related to WatSan access at the **household** level. Self-worth feelings were also linked to development projects, receiving government cook-stoves and better roads, by women participants. This shows women participants experience a part of the empowerment process through access to other types of resources (non-WatSan) on **household** and **community** levels, respectively. For capacity and transformation, two topics were mentioned in the same way for both themes. The most mentioned topic was capacity to talk to government groups (i.e., the vice-president of the PRI) about water concerns. This might symbolize a degree of empowerment

on the **political** level. Nonetheless, it is important to remember women participants usually speak to the vice-president one-on-one as he lives in their village. Thus, frequent mentions of speaking to him do not necessarily signify women are more empowered in Gram Sabha or the political arena. In fact, one woman attends Gram Sabha but does not speak at meetings. On the other hand, it could signify a level of empowerment at the **community** level. Women are able to walk around the community freely, and they feel bold enough to voice their needs to the vice-president. The second most mentioned topic was the ability to access loans from SHGs for financial purposes at the **household** level for a variety of non-WatSan purposes. Women often use these loans for home improvement or to buy food for the household.

EPI, Individual Interviews, and Empowerment in WatSan

EPI results (access to WatSan, access to WatSan planning groups, and access to WatSan management groups) are compared to results from individual interviews (self-worth, agency, and achievements) for an enhanced comprehension of the empowerment process for women in relation to WatSan. Women respondents have a mean of EPI ratings of 1.64. Using this as a starting point for understanding empowerment potential, one might assume women are not fully positioned for experiencing the empowerment process in relation to WatSan. The lower mean of EPI ratings are likely a reflection of NGO B's short time (i.e., from 2006 for water and from 2009 for sanitation) of implementing WatSan interventions in villages. In regard to access to WatSan, women participants showed self-worth with the ability to access water at the **household** level. Water projects were initiated by the government with later renovations by NGO B. Access to WatSan planning groups was mentioned less among women participants than access to WatSan. One SC woman said she attended a meeting on WatSan awareness held by NGO B because all SCs were required to attend. This might represent an increased degree of sharing WatSan information at the **community** level, but this was mentioned infrequently during interviews with women. Access to WatSan management groups was mentioned primarily through communication with the president of the PRI in a one-on-one scenario. This represents an increased level of empowerment on the **political** level, but it is unclear if women have influence in the larger political arena.

Given this broad examination of the empowerment process within NGO B, there are four particular areas of interest. First, empowerment of women on a political level is mentioned through themes of capacity and transformation but principally through one-on-one communication with the vice-president of the PRI. This might not necessarily represent increased empowerment of women on the political level in relation to WatSan, but may reflect empowerment at the community level. One woman did say SHGs are used as a way to communicate with PRIs in regards to WatSan. Second, if SHGs are used as a way to communicate with PRIs about WatSan or to access loans for non-WatSan purposes, there are few SHGs available for SCs in this village. This might exclude SCs from being able to participate in WatSan decision-making on community or political levels. Third, groups for WatSan planning and management (i.e., WGs or VWSCs) were rarely mentioned in individual interviews. Most women participants were not aware of the existence of WGs or VWSCs. One woman thought that WGs were a way to access loans for household non-WatSan purposes. Fourth, mentions of self-worth are low. There are only 16 references of self-worth themes in individual interviews with women compared to 29 references for capacity themes and 19 references for transformation themes. References to self-worth were mentioned most in connection with water access and water quantity. These results could be from the way that individual interviews were set-up (see Appendix A) or the criteria for understanding self-worth (as defined in Table 3). More research would be helpful to understand if women felt self-worth related or unrelated to the WatSan program in this village.

Gender Equality Overview

Themes of gender equality/inequality were coded in individual interviews conducted with women and men. These themes were classified by gender equality/inequality occurring in the past and gender equality/inequality occurring in the present. The following topics were mentioned by participants - education, financial, land ownership, politics, production economy, sanitation, and water (in no particular order) - under themes of gender equality/inequality. Themes of gender inequality occurring in the past were mentioned less (10 topics mentioned among all interviews) than themes of gender inequality occurring in the present (15 topics mentioned among all interviews). Themes of gender equality occurring in the past were mentioned less (2 topics mentioned among all interviews) than themes of

gender equality occurring in the present (14 topics mentioned among all interviews). This might indicate some forms of gender inequality are increasing and some forms of gender equality are increasing according to perceptions of participants in individual interviews (Figure 6). It is necessary to understand subjects of those comments to see how gender equality and gender inequality are increasing according to participants in individual interviews.

Figure 6. Gender Equality Themes in Individual Interviews - NGO B
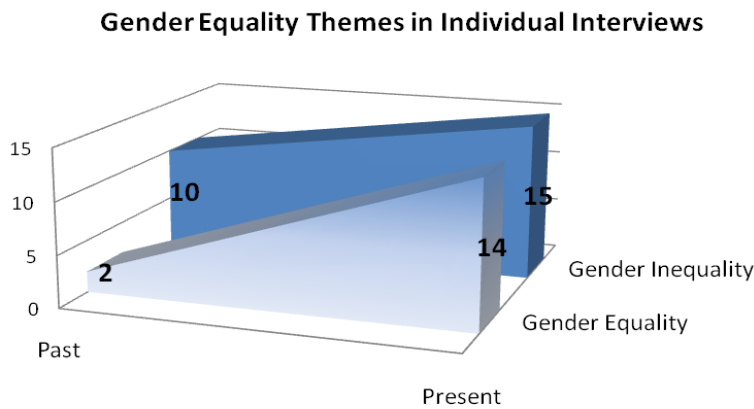
Areas experiencing the greatest increase in gender inequality over time, according to participants of individual interviews, were overwhelming related to politics. This was mentioned by three different people during individual interviews. These participants mentioned the existence of a male "president" in the gram panchayat, but he is only the vice-president of the panchayat. Therefore, this was coded as gender inequality. A woman SC member from a nearby village is now the president of the panchayat. The following statement by an MBC woman represents the sentiment. She kept referring to the male from her village as president of the PRI, but then acknowledges he is not the president but vice-president of the PRI.

> Now only this woman is taking over. But even now he's the man that… so I really like this man. I think he's a very proactive, very effective leader. We're all skeptical about what will happen now that he's no longer a leader and since leadership has changed whether the same proactive thing will continue. We are very skeptical.

In actuality, there is a woman SC president as required by state regulations. It is important to acknowledge the male vice-president is from the village where individual interviews were conducted. Likewise, the re-occurrence of this theme might not represent gender inequality, but pride and support in having a PRI president from their own village. This theme could be more closely examined to understand if women and men think women should be in leadership positions in government. Areas experiencing the greatest increase in gender equality, according to participants in individual interviews, were related to politics and sanitation. Political themes were related to attending Gram Sabha. Two people talked about SHGs being very involved in Gram Sabha. One woman states "most people are used to the SHG as a kind of way to talk to the president." Another man acknowledges, "the member, or the head of the SHG, always comes to the Gram Sabha to raise petitions." One woman says she attends Gram Sabha meetings, but does not participate. Sanitation themes were related to access and increased awareness. Women look as if they influence the toilet-building process, and men became more aware of the challenges for OD for women along the way.

> His daughter-in-law piloted the entire project. I asked him if he had a toilet. His response was, "my daughter-in-law has a toilet."

> For women, it is a difficulty practicing OD. They'll have to go long distances to find a private place. For men, it doesn't make a difference. But for women, it is important that they have…

Empowerment and Gender Equality in WatSan

This section will seek to understand if empowerment of women directed gender equality in relation to WatSan in the main village according to participants in individual interviews. Themes of gender equality and water were mentioned as occurring in the past. One MBC woman said her father and mother used to fetch water, and an SC man said his whole family used to fetch water. Themes of gender equality and water in the present were related to women and men fetching water and men realizing hardships encountered by women fetching water. It is difficult to decipher how some women began to encourage both male and females to help fetch water in the villages. This might have occurred independently of NGO B's efforts and was influenced by increased access to water. This improved access was brought about by governmental efforts. This overlaps with the empowerment process because women who

have help fetching water have increased capacity to make decisions on the household level and are able to transform those decisions to reality. Themes of gender equality and sanitation were mentioned as improving over time. Themes of gender equality and sanitation occurring in the present were related to women initiating construction of toilets and men realizing hardships for women from OD. Gender equality and sanitation in the village was largely initiated by NGO B. Their efforts have encouraged men to become more aware of OD challenges for women and helped women initiate toilet-building. In summary, gender equality might occur through bottom-up efforts for water, and top-down efforts for sanitation. Yet, the lines are skewed and difficult to define. Like NGO A, it could be assumed that NGO B's interventions did influence gender equality in WatSan through top-down approaches, but the empowerment of women continued to influence gender equality in WatSan using approaches put in-place by NGO B.

Sampling Strategy and Limitations

Eighteen respondents completed household surveys associated with NGO B (11 women and 7 men) in the main village and one nearby village. Thirteen participants completed individual interviews in the main village (7 women and 6 men). For both household surveys and individual interviews, participants were chosen through a purposive technique to obtain a diverse sample of the village population. It was a goal to conduct household surveys and individual interviews with an equal number of women and men from a variety of house types within village boundaries. No person completed both a household survey and an individual interview. For household surveys, two separate translators were used. Both of these translators were women. Neither of these translators worked for NGO B. One of these women continued as translator for individual interviews in the main village. On rare occasions during individual interviews, there was some translation difficulty. This is because a rural dialect is used in the village, and a few words were unknown to the translator. Moreover, the small sample number of women participating in individual interviews makes this a non-statistical sample. It is difficult to generalize these data beyond the scope of participants. Nonetheless, this project might provide a useful preliminary model for future research on empowerment of women and gender equality.

DISCUSSION

Common Strengths

Both organizations strive for an empowerment and gender equality approach in WatSan programs. They have adopted empowerment and gender equality as policy goals. This allows each NGO to focus on women and marginalized populations in WatSan programs. Each NGO realizes the importance of creating self-sustaining, decentralized WatSan systems managed by rural villages. These efforts are in conformity with Swajaldhara, the Total Sanitation Campaign, and the national movement towards decentralization of WatSan with a focus on inclusion of women and marginalized populations. Each organization endeavors to engage the entire village in PRAs before implementation of WatSan activities in the villages. In PRAs, they strive to include all people in planning WatSan systems. This provides an entry-point into the empowerment process for people in villages. Both organizations use CBOs (SHGs, WSGs, VWSCs, and WGs) as a vehicle for empowerment. Narayan (2005) maintains that collective groups are useful for advancing empowerment and can help build confidence and promote positive change disempowered communities. Approaches used by these NGOs further the empowerment process on some levels. SHGs, WSGs, and WGs lead to financial empowerment at household and community levels for members. SHGs in NGO A and NGO B are a way to engage in the empowerment process on the political level (through grants and subsidies for development projects and through better communication on WatSan issues at PRIs, correspondingly). Both organizations engage in WatSan awareness activities on gender equality and WatSan issues. They try to link CBOs and PRIs in WatSan efforts. In summary, each NGO employs approaches to promote empowerment and gender equality in WatSan. As stated by Oxaal and Baden (1997), organizations encourage individual empowerment through participation, skill building, decision-making, and control over resources. They can help collective empowerment by funding women's organizations, promoting political participation, and fostering dialogue.

Common Challenges and Opportunities

Each organization has certainly come a long way in fostering the empowerment process and gender equality in each village as evidenced by the EPI and individual interviews. Nevertheless, there might be opportunities for increased empowerment and gender equality in relation to WatSan projects and programs implemented by both NGOs. Challenges and opportunities are identified on three scales: 1) internal to organizational structure of NGO A or NGO B, 2) external related to projects or programs implemented by NGO A or NGO B, or 3) correlated to data collected during this study.

1a. Challenge - Empowerment and Gender Equality Measurement (Internal)

Each NGO identifies empowerment of women and gender equality as goals, but neither organization has conducted measurements of the empowerment process besides documentation of individual case studies. Both NGO A and NGO B collect sex-disaggregated data. Sex-disaggregated measurements are useful for understanding gender equality, but they are not effective for evaluating the process of empowerment.

1b. Opportunity - Empowerment and Gender Equality Measurement (Internal)

Monitoring and evaluation methods for empowerment and gender equality could be created. Empowerment and gender equality should first be defined within the organization (Batiwala, 1993). Methods to monitor empowerment might include surveys to collect data over two points of time to understand WatSan decision-making. (Malhotra, 2002). Qualitative methods should be used with quantitative surveys. Individual interviews or life histories are helpful qualitative methods for understanding the empowerment process (ibid). Indicators of empowerment should be devised for specific projects and programs (Oxaal & Baden, 1997). Measuring empowerment in WatSan should include indicators specific to the WatSan arena.

2a. Challenge – Trainings or Awareness Activities on Empowerment and Gender Equality (Internal and External)

Internally, each NGO strives to educate staff about the importance of involving women and marginalized populations in WatSan access, planning, and management. Still, there was often confusion about the concept of gender equality when speaking with staff of NGO A and NGO B. Most staff solely equated gender equality with a women-centric approach to WatSan projects and programs.

Externally, each NGO offers some WatSan trainings in villages that cover gender imbalances regarding WatSan, but there were men in individual interviews against the idea of having toilets (especially in villages served by NGO B). In individual interviews conducted in villages receiving interventions by both NGOs, women seemed to bear more burdens for managing WatSan in the households.

2b. Opportunities – Trainings or Awareness Activities on Empowerment and Gender Equality (Internal and External)

Internally, both NGOs offer education and awareness activities for staff outlining benefits of gender-equality approaches to WatSan management, but these activities are rarely offered in any standardized format. NGOs are often thought of as agents of change to encourage empowerment and bring awareness of existing gender inequality (Batiwala, 1993). It might be beneficial for both organizations to have a local gender specialist provide gender and empowerment trainings for staff.

Externally, both NGOs are offering WatSan trainings that review inequalities between women and men, but there remain gender inequalities regarding specific WatSan issues (as strongly evidenced with NGO B). The NGOs might consider giving additional trainings that focus on those specific inequalities. For example, NGO B might provide additional training in a few villages on difficulties of OD faced by women. Many development organizations have improved access to resources for women, but they have not created programs which allow

women to better understand inequality between women and men, between rich and poor, etc. (Batiwala, 1993).

3a. Challenge - CBOs for WatSan Planning and Management (External)

Both organizations promote groups (SHGs, WSGs, WG, VWSCs) for women to engage in the empowerment process through participation in WatSan programs, but there are a variety of factors which prohibit some of these groups from reaching marginalized individuals. Payment is required to be on SHGs and WSGs with NGO A. Payment is required to be on SHGs with NGO B. SHGs are divided by caste in NGO A and NGO B. Fortunately, there are SHGs for SCs in the village with NGO A, but there are few SHGs for SCs in the village with NGO B. If SHGs are used to engage women in the empowerment process for WatSan and there are exclusionary factors related to finances or caste, some women are unable to participate in the empowerment process related to WatSan.

3b. Opportunity - CBOs for WatSan Planning and Management (External)

A variety of approaches might encourage more women and marginalized populations to participate in groups. Each NGO probably already knows the most appropriate ways for improving participation, but there may be other techniques for soliciting greater participation. One possibility would be to form financially-tiered SHGs. These groups might allow low-income people to participate in planning and managing WatSan systems as this is one goal of SHGs (especially in NGO A). Another idea is to ensure there are SHGs for SCs and BCs equally in each village. This way, some women are not excluded from participation in an SHG (especially in NGO B). In NGO B, there was a lack of awareness of the existence of WatSan groups in individual interviews. A few people said they did not like to participate in groups because of time constraints. Before forming WatSan groups in villages, possibly people could be asked what might encourage them to participate in such groups.

4a. Challenge - Low Political Involvement by Women as Identified in Individual Interviews (Data)

Both organizations have few references, in individual interviews, of women participating in the political realm in relation to WatSan. In NGO A, women in individual interviews only talk about participating in the political realm through receiving subsidies and grants or writing letters to PRIs on water issues. In NGO B, women in individual interviews discuss participating in the political realm through talking directly to the PRI vice-president or through SHGs speaking at PRI meetings. In NGO B, there was one woman who said she did not speak at Gram Sabha. In NGO B, the woman president of the PRI is not recognized as president by many people (women and men).

4b. Opportunity - Low Political Involvement by Women as Identified in Individual Interviews (Data)

Low political involvement by women in WatSan might be examined in greater depth. Each NGO could attend Gram Sabha to see if women are participating in WatSan planning and management. They might talk with PRI representatives about advantages of including women in these activities. They might talk with women and men in the community about the importance of including women in these activities. If they find there is opposition to including women in political endeavors related to WatSan, they could offer trainings for women, men, and PRIs covering benefits of collaboration and participatory decision-making.

5a. Challenge - Few Self-Worth Themes in Individual Interviews (Data)

Both organizations have few references of self-worth in individual interviews conducted with women in villages. With NGO A, mentions of self-worth were mostly related to financial independence in the household. With NGO B, mentions of self-worth were mostly related to water access. It is not clear why mentions of self-worth were low with women participants of interviews in villages.

5b. Opportunity - Few Self-Worth Themes in Individual Interviews (Data)

Few mentions of self-worth may have stemmed from the way individual interviews were conducted or because of cultural norms correlated with expressing feelings of self-worth. In understanding empowerment, it would be valuable to know if women in these villages feel a sense of self-worth. How is it expressed? Why is it expressed?

IDEAS FOR FURTHER RESEARCH

A similar framework for comprehending empowerment potential and the empowerment process in relation to WatSan could be used in the future, but several adaptations would improve this framework. A revised framework for understanding empowerment potential and the empowerment process might include the following facets:

1. The EPI should never be used alone and always with qualitative methods such as individual interviews or focus groups to ensure that the empowerment process (resources, agency, and outcomes) is fully explored.
2. Before measuring empowerment, it would be useful to examine organizational documentation to identify pre-existing indicators of empowerment. Did organizations proclaim empowerment through WatSan participation? Did organizations declare empowerment in relation with increased WatSan access? What people (marginalized populations or women) is the organization associating with assertions of empowerment in relation to WatSan?
3. The EPI and individual interviews could be conducted pre- and post-project with the *same* individuals. It might be informative if post-project assessments were completed one year after the organization exited the village to understand long-lasting effects of WatSan interventions on the empowerment process.
4. The EPI can be used to understand the resources aspect of the empowerment process, but a sample of respondents should be collected in a random, non-purposive manner. A population (a village or group of villages) should be identified and each household of the population listed. While creating a list of the population, it is important to include outlying areas (where most marginalized populations might live) and

transient, landless people. Then a random - and statistically significant - sample could be chosen from that population (the list of households). An EPI survey could be conducted with those individuals. Upon reaching each household, it would be useful to get an equal number of men and women respondents depending on final goals. The questionnaire could be as simple as follows:

    a. Collect demographic data on respondent: gender, age, caste, race or ethnicity, income or wealth, religion, etc.

    b. Ask the respondent if they have water access (individual or shared).

    c. Ask the respondent if they have sanitation access (individual or shared).

    d. Ask the respondent if they have access to a WatSan planning group (SHG, VWSC, WG, WSG, TG, PRI, general trainings, etc.). Make sure they name the specific type of group.

    e. Ask the respondent if they have access to a WatSan management group (SHG, VWSC, WG, WSG, TG, PRI, general trainings, etc.). Make sure they name the specific type of group.

5. After EPI information is collected, individual interviews should be held with the *same* person. Individual interviews will provide information on the agency and achievements components of the empowerment process. It is important to conduct the EPI and the individual interviews with the same person so the empowerment process can be reasonably legitimated from resources to agency to achievements. These can be semi-structured interviews structure including (but not limited to) the following questions:

    f. What kind of water connection do you have? Who decided to build this connection in the household? How has this affected your life?

    g. What kind of sanitation connection do you have? Who decided to build this connection in the household? How has this affected your life?

    h. Have you participated in planning the water system in any capacity?

    i. IF YES: How did you do this? Was this with a group? Was it alone? Did you feel that your voice was heard in the planning process? Would you participate in this type of planning process again? Why? Why not? Did you encounter any barriers to planning the system? What kind? What were your contributions to the group? What kind of goals did you achieve?

j. IF NO: Why not? Did you feel that there were barriers to your participation? What kind of barriers?

k. Have you participated in planning the sanitation system in any capacity?

l. IF YES: How did you do this? Was this with a group? Was it alone? Did you feel that your voice was heard in the planning process? Would you participate in this type of planning process again? Why? Why not? Did you encounter any barriers to planning the system? What kind? What were your contributions to the group? What kinds of goals did you achieve?

m. IF NO: Why not? Did you feel that there were barriers to your participation? What kind of barriers?

6. After conducting individual interviews to understand empowerment, one can go back and code this data for sense of self-worth, capacity to make decisions, and transform decisions into reality. Comparing these themes to the EPI index will allow the researcher to understand how and if empowerment is happening through WatSan programs put in-place by organizations. In addition, it might be useful to link empowerment agency to quantitative empowerment achievements.

REFERENCES

Ahmed, S. (2001). Empowering Rural Women? Policies, Institutions, and Gendered Outcomes in Natural Resources Management. *Development in Practice*, *11*(4), 535-537.

Ahmed, S. (2005a). Why is Gender Equity a Concern for Water Management? In S. Ahmed (Ed.), *Flowing Upstream: Empowering Women through Water Management Initiatives in India* (211-233). Ahmedabad: Centre for Environment Education.

Ahmed, S. (2005b). Flowing Upstream: Towards Gender Just, Equitable, and Empowering Water Management. In S. Ahmed (Ed.), *Flowing Upstream: Empowering Women through Water Management Initiatives in India* (1-50). Ahmedabad: Centre for Environment Education.

Ananda, J, Crase, L., & Pagan, P. G. (2006). A Preliminary Assessment of Water Institutions in India: An Institutional Design Perspective. *Review of Policy Research*, 23(4), 927-953.

Asian Development Bank (ADB). (n.d). Gender Checklist: Water Supply and Sanitation. Retrieved on September 1, 2009 from http://www.adb.org/Documents/Manuals/Gender_Checklists/Water/.

Batiwala, S. (1993). *Empowerment of Women in South Asia: Concepts and Practices*. New Delhi: Vision Wordtronic Ltd.

Barlett, A. (2007). Plans or People: what are our priorities for rural development? *Rural Development News, 1*, 52-59.

Bernard, H.R. (2002). *Research Methods in Anthropology* (3rd ed.) Walnut Creek, CA: AltaMira Press.

Census of India. (2001). Retrieved on 1 June 2010 from http://www.censusindia.net.

Chaplin, S. (1999). Cities, sewers and poverty: India's politics of sanitation. *Environment and Urbanization, 11*, 145-158.

Government of India. (2010). Department of Drinking Water. Retrieved on 5 June 2010 from http://ddws.nic.in/Sector%20Reforms/overview_pop.htm.

Humphrey, J. (2007). Forty Years of Development Research: Transformations and Reformations. *IDS Bulletin, 38*(2), 14-19.

Ivens, S. (2008). Does Increased Water Access Empower Women? *Development, 51*, 63-67.

Jain, D. (2005). *Women, development, and the UN: a sixty-year quest for equality and justice*. Bloomington: Indiana University Press.

Johnson, R.B. & Onwuegbuzie, A.J. (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come. *Educational Researcher, 33*(7), 14-26.

Joshi, D. & Fawcett, B. (2001). Water Projects and Women's Empowerment. *Paper presented at the 27th WEDC Conference, People and Systems for Water, Sanitation, and Health.* Lusaka.

Joshi, D. & Fawcett, B. (2005). The Role of Water in an Unequal Social Order in India. In A. Coles & T. Wallace (Eds.), *Gender, Water and Development (pp 39-56).* Oxford: Berg.

Joshi, D. (2005). Misunderstanding Gender in Water: Addressing or Reproducing Exclusion. In A. Coles & T. Wallace (Eds.), *Gender, Water and Development* (pp 139-153). Oxford: Berg.

Kabeer, N. (1994). *Reversed realities: gender hierarchies in development thought.* New York: Verso.

Kabeer, N. (1999). Resources, Agency, Achievements: Reflections on the Measurement of Women's Empowerment. *Development and Change, 30(3),* 435-464.

Kapadia, K. (2002). *The violence of development: the politics of identity, gender and social inequalities in India.* New York: Zed Books.

Lidonde, R. (2004). *Scaling Up School Sanitation and Hygiene Promotion and Gender Concerns.* School Sanitation and Hygiene Education Symposium. The Way Forward: Construction is not Enough! June 8-10, 2004. Delft, The Netherlands.

Narayan, D. (2005). Conceptual Framework and Methodological Challenges. In Narayan, D. (Ed.) *Measuring Empowerment: Cross-Disciplinary Perspectives* (pp 3-38). Washington DC: World Bank.

Narasimhan, S. (2002, July 1). Sanitation: The hidden gender problem. India Together. Retrieved on September 1, 2009 from http://www.indiatogether.org/women/health/sanitation0702.htm.

Malhotra, A., Schuler, S.R., & Boender, C. (2002). *Measuring Women's Empowerment as a Variable in International Development.* Background Paper Prepared for the World Bank Workshop on Poverty and Gender: New Perspectives (pp. 1-10).

March, C., Smyth, I., & Mukhopadhyay, M. (1999). *A Guide to Gender-Analysis Frameworks.* Oxford: Oxfam.

Miles, M. (1994). *Qualitative data analysis: an expanded sourcebook* (2nd ed). Thousand Oaks: Sage Publications.

Moser, C. (1993). *Gender planning and development: theory, practice, and training.* New York: Routledge.

Oxaal, Z. & Baden, B. (1997). Gender and empowerment: definitions, approaches, and implications for policy. Briefing prepared for the Swedish International Development Cooperation Agency (SIDA). Report No. 40.

Palaniappan, M. (2009). Millennium Development Goals: Charting Progress and the Way Forward. In Gleick, P.H. (Ed.), *The World's Water 2008-2009: The Biennial Report on Freshwater Resources* (pp 57-77). Washington, DC: Island Press.

Perkins, D.D. & Zimmerman, M.A. (1995). Empowerment Theory, Research, and Application. *American Journal of Community Psychology, 23*(5), 569-579.

Rathgeber, E. M. (1990). WID, WAD, GAD: Trends in Research and Practice. *The Journal of Developing Areas*, *24*(4), 489-502.

Reinharz, S. (1992). Feminist Multiple Methods Research. *Feminist Methods in Social Research* (pp 197-213). New York: Oxford University Press.

Rist, G. (2007) Development as a Buzzword, *Development in Practice, 17*(4-5), 485-491.

Robson, C. (2002). *Real world research: a resource for social scientists and practitioner-researchers* (2nd ed). Oxford: Blackwell Publishers.

Rocheleau, D. (1995). Maps, Numbers, Text, and Context: Mixing Methods in Feminist Political Ecology. *The Professional Geographer, 47*(4), 458.

Rowlands, J. (1996). Empowerment Examined. In D. Eade (Eds.), *Development and Social Diversity* (pp 86-92). Oxfam: Oxford.

Sharma, A. (2006). Crossbreeding Institutions, Breeding Struggle: Women's Empowerment, Neoliberal Governmentality, and State (Re)Formation in India. *Cultural Anthropology, 21(1)*, 60-95.

Sijbesma, C., & Postma, L. (2008). Quantification of qualitative data in the water sector: the challenges. Water International, 33(2),150.

Singh, N. (2006). Women's Participation in Local Water Governance: Understanding Institutional Contradictions. *Gender Technology and Development, 10*(1), 61-76.

UNICEF. (2008). Gender equality. Retrieved June 1, 2010 from http://www.unicef.org/gender/.

UN Water. (2006). *Gender, Water and Sanitation: A Policy Brief*. Retrieved March 25, 2009 from http://www.unwater.org/downloads/unwpolbrief230606.pdf.

Wallace, T. & Coles, A. (2005). Introduction. In A. Coles & T. Wallace (Eds.), *Gender, Water and Development (pp 1-19). Oxford: Berg.*

Warner, R. L. (1999). Gender, Development, and the Environment. In D.L. Soden & B.S. Steel (Eds.), *Handbook of Global Environmental Policy and Administration (pp 265-279).* New York: Marcel Dekker, Inc.

Wijk-Sijbesma, C. van (1998). Gender in Water Resources Management, Water Supply, and Sanitation: Roles and Realities Revisited. Technical Series 33(E). The Hague: International Reference Centre on Water and Sanitation.

APPENDIX A Example of Semi-Structured Interview Questions

1. Where are you from? Where did you grow up? What was life like for you when you were a child?
2. What was the village like when you first moved here (if you moved here later)?
3. How were water and sanitation conditions in the village then?
4. How have things changed for water conditions since then? How have things changed for sanitation conditions since then?
5. Are you a member of any groups (SHGs or AWASH committees) that work on water and sanitation conditions in your community? How do these groups work on water and sanitation conditions in your community?
6. Why do you feel motivated to work to help the community on water and sanitation?
7. What are the successes of the water and sanitation projects in the village?
8. What are the problems with the water and sanitation projects in the village?
9. Who has better (worst) access to the water in this community?
10. Who has better (worst) access to sanitation in this community?
11. Who helped plan the [water supply or sanitation] project?
12. Who manages the [water supply or sanitation] project?
13. Is there anything else that you would like to say about this project?

We hope to understand if water projects affect different people differently. If you could tell us a little bit about your background, it will help us better understand who has access to water resources and who does not have access to water resources. If you do not want to answer any of these questions, you may skip any question.

1. What is your name?
2. What is your age?
3. Are you married?
4. Have you had any schooling?
5. What is your income?
6. What is your wealth?
7. What is your caste?
8. What is your ethnicity?
9. What is your religion?

APPENDIX B   Demographics of Individual Interview Participants with NGO A

Gender	Caste	Age	Education	Annual Income	Marriage	Religion	WatSan Group	Sanitation Access	Water Access
Male	MBC	51-60	12	-	Married	Hindu	WatSan	Individual Toilet	-
Female	SC	41-50	7	-	Married	Hindu	SHG	Individual Toilet	Individual Connection
Female	MBC	18-20	-	-	Married	Hindu	WatSan	Individual Toilet	Individual Connection
Female	MBC	51-60	-	-	Married	Hindu	SHG	Individual Toilet	Individual Connection
Male	MBC	31-40	-	-	Married	Hindu	WatSan	Individual Toilet	Individual Connection
Male	MBC	41-50	-	-	Married	Hindu	WatSan	Individual Toilet	Individual Connection

APPENDIX C   Demographics of Individual Interview Participants with NGO B

Gender	Caste	Age	Education	Annual Income	Marriage	Religion	WatSan Group	Sanitation Access	Water Access
Female	BC	31-40	0	1,440	Married	Hindu	SHG	Open Defecation	Community Stand-Post
Male	MBC	51-60	0	20,000	Married	Hindu	None	Open Defecation	Individual Connection
Female	MBC	21-30	10	20,000	Married	Hindu	SHG	Community Toilet	Individual Connection
Female	SC	31-40	9	-	Married	Hindu	None	Open Defecation	Individual Connection
Female	OBC	31-40	9	-	Married	Hindu	SHG	Open Defecation	Community Stand-Post
Male	BC	51-60	11	180,000	Married	Hindu	None	Individual Toilet	Individual Connection
Male	SC	21-30	7	8,400	Unmarried	Hindu	None	Open Defecation	Individual Connection
Male	SC	31-40	7	42,000	Married	Hindu	None	Open Defecation	Individual Connection
Male	SC	31-40	6	13,000	Married	Hindu	None	Open Defecation	Community Stand-Post
Female	SC	21-30	6	0	Married	Hindu	None	Open Defecation	Community Stand-Post
Male	MBC	51-60	0	3,000	Married	Hindu	None	Individual Toilet	Community Stand-Post
Female	MBC	31-40	-	12,000	Married	Hindu	WatSan	Individual Toilet	Individual Connection
Female	MBC	-	0	12,000	Married	Hindu	None	Open Defecation	Community Stand-Post