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GENDER MAINSTREAMING IN A WATER INTERVENTION

Women's experiences in Sre Chea Commune in rural Cambodia

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TANSKANEN, TIIA: Gender mainstreaming in a water intervention – Experiences in Sre Chea Commune in rural Cambodia

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ABSTRACT

Water is an essential need for human well-being and development. It shapes lives and livelihoods especially for people with limited access to water. In developing countries, water related activities often fall on the responsibility of women, taking up hours of their daily work. Though women's role in household water management is central, their views are habitually left out in the design and implementation of water projects and interventions. Gender mainstreaming has gained growing emphasis on the development agenda. It aims to integrate gender perspective in any planned action and include women as active agents in development projects. Critics claim that effects of the policy emphasis remain weak, as gender issues tend to be reduced into a technicality, rather than genuinely challenging the prevailing power hierarchies and division of labor. Also, the ways of understanding the concept of gender and how it is interconnected with other levels of social division reflect in the effects that a water intervention has on a local community. To understand the local realities, this study brings women's experiences into the spotlight by means of a case study, and contemplates the policy of gender mainstreaming from their perspective.

This case study focuses on a water project in rural Cambodia, and strives to reveal experiences and perspectives of the local women in the Sre Chea Chheung Khan Commune. The study examines firstly how the women have participated in the planning and implementation of the water supply project, and secondly what changes there has been in the everyday lives of the women due to the water supply system. The main data comprises of thirteen individual interviews with local women. In addition, secondary data includes two group interviews and two individual interviews with the village chief and the non-governmental organization, RainWater Cambodia (RWC) that was responsible for carrying out the project. All the interviews except for the RWC were conducted with an interpreter. The study draws on ethnographic methodology and feminist perspective, the latter being central in sensitizing to imparting thoughts and experiences of the local women. To bring out the voice of the interviewees, the data is analyzed using inductive content analysis. The theoretical framework of strategic and practical gender needs is applied in the discussion.

The women's participation in the project remained nominal, despite of their strong interest in the commune's development issues. There are different levels of barriers for women's participation. Responsibilities within the household, such as child-rearing, pose challenges for women to engage in project activities. More importantly, women do not necessarily recognize the value of their knowledge in the planning and therefore do not pursue an active role in the decision-making. Both the project background documents and the women see the water project foremost contributing to women's practical gender needs, facilitating their daily practices. High expectations are placed for the new water technology facilitating everyday routines, yet the benefits are vulnerable when shortcomings occur in the provision of water. The ways how a water technology embeds to local lives are varied, as are the changes it brings to the women's daily lives.

Striving for the gender mainstreaming goals requires understanding on the prevailing gender relations and challenging the assumed homogeneity of women or men. Working on micro scale, there are no universal frameworks to reach sustainable water projects or to mainstream gender, which is why the locals must be in the center of defining the local needs. In project planning, addressing strategic needs in addition to the practical ones is central, not only to meet the equality goals that gender mainstreaming emphasizes, but also to efficiently fulfill practical needs. Sustainable and equitable solutions are built bottom-up, giving space to different kinds of knowledge and marginalized views. Development practitioners need to acknowledge the importance of meaningful participation and understand both technical and social features that water projects entail. Sustainably executed water projects require critical reflection from the planner's side, manifold expertise and adequate resources.

Keywords: water, women, gender mainstreaming, development project, Cambodia, strategic and practical gender needs

TAMPEREEN YLIOPISTO, Johtamiskorkeakoulu, Ympäristöpolitiikka ja aluetiede

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TIIVISTELMÄ

Vesi on hyvinvoinnin ja kehityksen elinehto. Vesi määrittää elämää ja toimeentuloa etenkin heillä, joilla on käytössään vettä vain rajallisesti. Kehityksessa naiset ovat usein vastuussa veteen liittyvistä askareista, mikä vie suuren osan päivän työtunneista. Vaikka naisten rooli kotitalouksien vesihuollossa on keskeinen, heidän näkökulmansa jäävät usein huomiotta vesiprojektien ja kehityshankkeiden suunnittelussa ja toteutuksessa. Sukupuolinäkökulman valtavirtaistaminen (gender mainstreaming) on kehityspolitiikassa ja -ohjelmissa yhä näkyvämpi painopiste. Sen tavoitteena on sisällyttää sukupuolinäkökulma kaikkeen suunnitteluun ja saada myös naiset mukaan kehityshankkeisiin aktiivisina toimijoina. Poliitiikan painopisteen vaikutusten on kuitenkin kritisoitu jäävän heikoiksi. Sukupuoliedustavuuden väitetään tyypistyvän helposti tekniseksi toimenpiteeksi vallitsevien valta-asetelmien ja työnjaon haastamisen sijaan. Myös se, kuinka gender-käsite ja sen yhteydet muihin sosiaalisiin rooleihin ymmärretään, heijastuu hankkeiden tuloksiin ja vaikutuksiin paikallisille yhteisöille. Tämä työ pyrkii tapaustutkimuksen avulla ymmärtämään paikallisia näkökulmia ja tuomaan esille naisten kokemuksia, pohtien sukupuolinäkökulman valtavirtaistamispolitiikkaa heidän näkökulmastaan.

Tämä tapaustutkimus tarkastelee vesiprojektia Kambodzhan maaseudulla ja pyrkii avaamaan paikallisten naisten kokemuksia ja näkökulmia Sre Chea Chheung Khan -kunnassa. Tutkimus tarkastelee yhtäältä kuinka naiset ovat osallistuneet vesihankkeen suunnitteluun ja toteutukseen, ja toisaalta millaisia muutoksia vesijakelujärjestelmällä on ollut heidän arjessaan. Aineisto koostuu kolmestatoista haastattelusta paikallisten naisten kanssa. Lisäksi toissijaisena aineistona toimii kaksi ryhmähaastattelua sekä yksilöhaastattelut kyläpäällikön sekä hankkeen toteuttamisesta vastuussa olleen RainWater Cambodia -kansalaisjärjestön (RWC) kanssa. Kaikki paitsi RWC:n edustajan haastattelu on toteutettu tulkin avustuksella. Tutkimus nojaa etnografiseen metodologiaan ja feministiseen tutkimusotteeseen, joista jälkimmäisellä on tärkeä rooli paikallisten naisten ajatusten ja kokemusten välittämisessä. Aineistolähtöinen sisällönanalyysi analyysimenetelmänä antaa painoarvoa haastateltavien puheenvuoroille. Diskussio-osiossa hyödynnetään strategic- ja practical gender needs -käsitteitä teoreettisena viitekehityksenä.

Naisten osallistuminen projektissa on ollut nimellistä, vaikka haastateltavat osoittavat kiinnostusta kunnan kehityskysymyksiin. Eritasoiset esteet vaikeuttavat naisten osallistumista. Vastuut kodin ja esimerkiksi lastenhoidossa tuovat haasteita naisten osallistumiselle projektin aktiviteetteihin. Vielä merkittävämpää on se, että naiset eivät välttämättä tunnista kokemustensa ja tietonsa arvoa suunnittelulle, eivätkä pyri aktiiviseen rooliin päätöksenteossa. Sekä projektin taustadokumentit että naiset itse näkevät vesiprojektin ennen kaikkea edistävän naisten käytännöntarpeita (practical gender needs), helpottaen heidän arkielämäänsä. Odotukset ovat korkealla, kun vesijakelujärjestelmän toivotaan helpottavan päivittäisiä rutiineja. Vikojen ja vastoinkäymisten haitatessa vedenjakelua hyödyt jäävät kuitenkin haavoittuvaisiksi. Vesiteknologia mukautuu paikallisten elämään eri tavoin, ja sen tuomat muutokset ovat myös moninaisia.

Sukupuolinäkökulman valtavirtaistamisen tavoitteisiin pyrkiminen vaatii ymmärrystä sukupuolten välisistä suhteista sekä naisten ja miesten kategorisen homogeenisyyden kyseenalaistamista. Paikallisesti tasa-arvotavoitteita tai kestäviä vesiprojekteja ei saavuteta universaalilla ohjekirjalla, minkä vuoksi paikallisten rooli yhteisön tarpeiden määrittäjänä on keskeinen. Strategisia tarpeita on tuettava projektisuunnittelussa käytännötarpeiden lisäksi. Tämä on tärkeää sekä tasa-arvotavoitteiden toteutumisen että käytännön tarpeiden edistämisen kannalta. Kestävät ja tasa-arvoiset ratkaisut rakentuvat alhaalta ylöspäin, antaen tilaa erityyppiselle tietämykselle ja heikossa asemassa oleville ryhmille. Kehitysalan toimijoiden tulee tiedostaa merkityksellisen osallistamisen arvo ja ymmärtää vesihankkeisiin liittyviä sekä sosiaalisia että teknisiä ominaisuuksia. Kestävästi toteutetut vesihankkeet vaativat suunnittelijoilta kriittistä itse-reflektiota, monenlaista asiantuntijuutta sekä riittäviä resursseja.

Avainsanat: vesi, naiset, sukupuolinäkökulman valtavirtaistaminen, kehitysyhteistyöprojekti, Kambodzha, strategic & practical gender needs

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1 INTRODUCTION

Water is an essential need for human well-being and development, and it shapes lives and livelihoods especially for people who have limited access. Access to pure drinking water was recognized a fundamental human right by the United Nations General Assembly in 2010. Yet, over 844 million people in the world lack access to even basic drinking water (WHO - World Health Organization & UNICEF - United Nations Children's Fund 2017, 3). The burden of water collection in developing countries traditionally falls on the responsibility of women and girls, who bear the main responsibility for water haulage in 8 out of 10 households without water on premises (WHO & UNICEF 2017, 11). Improved access to water is claimed to be central in transforming women's lives as well as for enhancing gender equality (Ivens 2008; UNDP - United Nations Development Programme 2006).

Over the last few decades, women's participation in public decision-making regarding water management is given priority in several conference declarations, programs and projects (Ivens 2008). It was after the Beijing declaration of 1995, when *gender mainstreaming* started to get increasingly more emphasis in development cooperation policies and in the international community (Mukhopadhyay 2014, 356). The term is widely advocated in policy papers and declarations, and according to the United Nations Economic and Social Council's (ECOSOC) definition, it stands for making women's and men's concerns and experiences central in all activities, striving to include gender perspective in all policy and decision-making, to ultimately pursue gender equality (ECOSOC agreed conclusion 1997/2). Nonetheless, there has been critics on the growing emphasis on gender mainstreaming, as it is claimed to be easily ignored or reduced into a technical exercise, when it comes to practice (Mukhopadhyay 2007; Walby 2005). There is further criticism that women's knowledge and participation is still not wholly included in planning processes, despite of their central role in water management (Ivens 2008).

Water interventions by means of labor-saving technologies and infrastructure are often presented as a solution to free women's time from unpaid work to productive activities, and consequently strengthening their status in the communities. However, it is argued that the time may not convert to support women's position and empowerment, especially if they have not been engaged in the planning and implementation of water projects. (Joshi & Fawcett 2001; Singh 2006.) Furthermore, when gender sensitive planning is put into practice there are still many restrictions that have been noted to affect women's participation: they are not fully engaged in the planning of water projects, since often household responsibilities restrict them from taking part in meetings or management groups (Moser 1989, 1801; Regmi & Fawcett 1999, 65). As water is regarded a means to overcome gender

inequalities, sustainably executed water projects ought to work as a platform for women to participate in the processes and strengthen their status in their families and communities (Regmi & Fawcett 1999).

Most water programs are claimed to focus on women's needs in their domestic role, aiming to ease their life with practical benefits that come with a better access to water and sanitation. Despite of the growing demand for engaging women in planning activities and decision-making processes, participation does not necessarily guarantee strategic improvements, like empowerment or greater gender equality (Ahmed & Zwartveen 2012; Ivens 2008; Mayoux 1995). The concepts of practical and strategic gender needs (Molyneux 1985; Moser 1989) provide one theoretical tool to examine development projects and analyze their consequences on local lives. Gender equality is stated as the ultimate goal of gender mainstreaming (ECOSOC 1997/2), indicating the importance of strategic goals in addition to practical improvements.

It must be noted, that in societies with a limited access to water, changes in water acquisition and improved access to safe water mean changes in the daily practices and local livelihoods. Therefore, water supply development projects implemented on a local scale bring changes to the locals' everyday lives, routines and domestic practices. It is argued that greater awareness of social impacts should be taken into a closer consideration when planning water development projects, especially in developing countries. (Joshi & Zwartveen 2012.) To that end, it is vital to examine and understand the social realities of the people affected by the change, to carry out water supply projects in a sustainable way. Comprehension of cultural and social aspects in the local communities are regarded indispensable for the success of such projects (ibid.). To understand why development projects fail to genuinely meet equality goals and why women yet tend to be left out in the planning, it is valuable to take development projects into scrutiny, and with the understanding enlightened by local experiences, dig into the planning processes and women's thoughts in a real-life context. With this micro-level case study, representing one development project in rural Cambodia, I aim to draw a detailed picture of a water supply project that has a gender mainstreaming target, and to illustrate the complex development dynamics from one angle.

1.1 Research questions

This study delves into the experiences of Cambodian women on changes due to a water supply system project in the rural commune of Sre Chea. I also examine women's participation in this partly community-managed water supply system project, providing insight to women's experiences by way

of a case study. Cambodia is a Southeast Asian developing country, where water related routines characterize the daily lives especially for the rural people. Being one of the least developed countries in the world, Cambodian people rely much on surface water or unimproved sources of water for water acquisition. (WHO & UNICEF 2017, 57; 60-61.) The studied case is a drinking water project in a rural Cambodian commune called Sre Chea, and it is funded by a grant program called EEP (Energy and Environment Partnership) Mekong. The case offers an example of a development project with a gender mainstreaming goal. What makes the project relevant in a Finnish viewpoint, is that EEP is a development program financed by the Ministry for Foreign Affairs of Finland, and it is to contribute to the high-level policy targets that place value on gender mainstreaming (FORMIN - Ministry for Foreign Affairs of Finland 2016). Similarly, in Finnish development policy, gender is defined one of the cross-cutting issues which should be addressed throughout development cooperation projects and interventions (FORMIN webpage 2017). It is however uncertain how the cross-cutting issues and the objectives of gender mainstreaming actually translate into planning practices. Tuominen's (2011, 42) examination on EEP Mekong program suggests that considering gender being a cross-cutting issue in Finnish Development policy and acknowledged in the EEP program, gender-aspects are given relatively little attention in the EEP Mekong. This study digs into the local level impacts of one project funded by EEP Mekong, and analyzes the effects on the everyday life point of view of the local women.

With ethnographic methodology, using semi-structured interviews and participant observation, the purpose of this study is to examine the realities of Cambodian women and depict the changes in their lives due to a water intervention, which aims to include gender perspectives in its implementation. The qualitative approach of the study is valid as the aim is to understand the local context and unravel women's detailed perceptions and experiences, and deepen understanding on the social characteristics of the chosen development project. The case study is outlined with a gender perspective and takes women's experiences into examination. The feminist approach is important not only for highlighting the views of a marginalized group, but it also obligates to a critical self-reflection on the researcher's position and on the power relations in the research process (Oinas 2004). The aim is to provide insights on the gendered impacts in daily practices of the rural people, brought by the process, the technology and the access to the water supply system itself. This is done both by examining the local perspectives and experiences and secondly by observing tangible and visible changes in the field. In addition, it is interesting to reflect how the changes and local experiences relate to the objectives set for the project, and compare the interview data with the project background documents. However, it needs to be highlighted that this study does not attempt to evaluate the project. Neither does it cover

the entire project nor seek to generalize the experiences into universal representations, but is outlined in the stated framework and data. Hence, the focus is on women's nuanced and diverse experiences and perceptions, critically examining their participation and inclusion in the process, similarly contemplating the implications on how policy of gender mainstreaming is put into practice in the studied case. The two research questions are:

1. *How have the women participated in the planning and implementation of the water supply system project?*
2. *What changes has there been in the everyday lives of the women due to the water supply system?*

The objective is to capture experiences and recognize improvements that can be achieved with a water project, as well as to compile understanding on how to execute water projects alike in a sustainable and inclusive way.

1.2 Case project “Solar Powered Drinking Water in Kampot Province”

The studied project is named in the project background papers “*Solar Powered Drinking Water in Kampot Province*”. It was implemented in the first phase of the EEP Mekong program, which took place in 2009–2013. A Cambodian non-governmental organization, RainWater Cambodia (RWC), was the primary responsible for carrying out the project, having help from subcontractors, mainly for technical assistance. RWC is a non-profit organization, focusing on projects for clean drinking water and improved sanitation for rural communities in Cambodia. As stated in the project completion report, the project has been implemented in collaboration with the local partner Sre Chea Khang Cheung Commune Council (Sre Chea in brief). The project's budget was 69 199 euros, of which 55 471 euros were financed with EEP grant, 10 976 euros contributed by RWC and 2752 euros by the Sre Chea commune council.

The project documents state that the purpose of the project is: “*To effectively demonstrate the appropriateness of solar power for rural communities*”. The project's overall objective is stated as follows: “*This project seeks to contribute to the Royal Cambodian Governments Millennium Development Goals whereby the entire Cambodian population will have access to safe water by 2025 and electricity by 2030, and also toward the worldwide challenge of combating climate change.*”. The technical solution is a system, where a pump extracts groundwater from a borehole, pumping it into an elevated reservoir, from which the water flows through a gravity pipeline system to the

connected households (see figure 1). Up until visiting the commune in May 2016, there had been 76 households connected to the water supply system. The system extends to two villages, but mainly covers only Prey Pi village's households near the town hall.

According to the commune chief, the capacity of the system has reached its maximum, and therefore no more households can be connected to the system. This has been communicated to the locals as well. Moreover, there were solar panels installed to the commune hall and the commune's primary school to provide electricity, mainly for lighting and computer use. However, to clarify the scope of the research, the water aspect of the project is the primary focus of the study. It was partly also left for the women's interviews to designate whether there would be importance given for the electricity aspect of the project as well or not. To illuminate the focus of the project, the four outputs are presented here as they are stated in the project completion report:

1. Improved capacity of SreChea Khang Chheung commune council
2. Improved infrastructure of households and community buildings
3. Demonstration and dissemination of appropriate technology
4. Increased knowledge of Water, Sanitation, Hygiene and renewable energy in commune

The project evaluation report estimates that the number of direct beneficiaries is 550 people from the total population of 4026 commune residents. The project was carried out in 18 months from September 2011 until March 2013, after getting a three-month extension for the execution of the project. As the project completion report states, a WASHE (Water, Sanitation, Hygiene and Energy) committee was established to assure the participation and integration of the local people in the planning. The committee consists of 13 residents, 8 of them representing all four villages and the rest 5 were chosen from the commune council. Except for one committee member, all the elected representatives hold a decision-making position on village level. The committee was trained to take



Figure 1 The water flows through the blue gravity pipelines to the households from the elevated reservoir. Solar panels provide energy for the pump.

responsibility for the administration, maintenance and operation of the installed systems also after the end of the project.

The commune chief tells that the households were chosen for the project based on the location of the residence, the ones living near the road being in priority. The pipeline was constructed in phases, first connecting about 40 households, then 60 and finally up to 76 households. The system runs along the two roads branching off at the commune hall. All the connected households have been charged a connection fee of 30 USD. There were no subsidies or loans provided to low-income families. In two occasions, one-month postponement of the payment was permitted in request of the families. Households are charged based on the volume of water used. The price of the water tariff in 2013 was originally 800 riels per cubic meter, but was later increased to 1000 riels per cubic meter (1000 riels is equivalent to approximately 0.25 USD). According to the commune chief, the monthly revenues gained from the system are around 50 – 70 USD. The earnings are managed by the water committee, and used in administrative work, invoices, meetings, monitoring the system and saved for later maintenance.

The project “Solar Powered Drinking Water in Kampot Province” is a part of the EEP grant program, which is a development cooperation program initiated by the Ministry for Foreign Affairs of Finland. The Ministry finances the EEP in conjunction with the Nordic Development Fund (NDF). The two main objectives of the program are “*providing sustainable energy services to the poor and simultaneously combating climate change*” (FORMIN 2010). EEP supports feasibility studies and pilot projects that promote renewable energy and energy efficiency in the region, aiming to activate further investments in the field (FORMIN 2010). Hence, the use of solar energy in the case of the studied project can be regarded as a key element for this water project to be qualified for EEP funding.

The first EEP program was launched in Central America, and in 2009 it was replicated to the Mekong region, operating in Cambodia, Laos, Myanmar, Thailand and Vietnam. There are four cross-cutting issues defined for the EEP program: 1) poverty, 2) gender and social equality 3) environment, and 4) good governance. Being cross-cutting means that these four themes ought to be taken into consideration and assessed throughout the whole project. (FORMIN 2010.) The main interest of this study is in the gender and social equality aspect, observing what implications this policy has in practice. Moreover, the EEP Mekong program is monitored and evaluated based on the *Guidelines for Programme Design, Monitoring and Evaluation* of the Ministry for Foreign Affairs of Finland. The guidelines also recognize gender and participation as issues to be included and evaluated in the process (FORMIN 2007). The gender emphasis in the program policy makes the case an interesting

one to be observed from a gender perspective. There are four emphases named in Finnish development policy, one of which is “The rights and status of women and girls” (FORMIN webpage 2017). The requirement to promote gender equality in all public-sector actions derives also from the Lisbon Treaty that claims that mainstreaming the gender perspective ought to be enforced in all levels and stages of action (Haataja, Leinonen, & Mustakallio 2011, 7).

1.3 Description of the Sre Chea Chheung Khang commune

Cambodia is divided into 24 provinces and municipalities, which again are divided into 193 districts (*khan*). *Khans* comprise of several communes, which comprehend a number of villages. (Haslett, Jones, & Sefton 2013.) The commune of Sre Chea is situated in the South of Cambodia, in Dong Tong district, in the Kampot Province. Sre Chea is a rural commune, located about 50 kilometers Northeast of the capital of Kampot province, the city of Kampot (figure 2). Sre Chea comprises of four villages; Sophy, Prey Pi, Prean Tum and Tropeng Chroneang.



Figure 2 Map of administrative units in Cambodia. The study area is located in Kampot province, about 50 kilometers Northeast of the city of Kampot. (Source: Haslett et al. 2013, 75)

The area of the commune covers about 25 km². Sre Chea means a rice field called Chea, and Chheung Khang (the suffix was added in the name in 1979) stands for North. According to the commune chief there are about 4500 people living in the commune in 1026 households.

One central point of Sre Chea is the commune hall, which is located next to one of the community ponds. There is also a small market place in the commune and an elementary school for children. As in rural Cambodia, the main occupation in the commune is planting rice, harvesting once a year. The locals are cropping also other plants that are not so susceptible to seasonal variation. Before 2015, there was no connection to the electricity grid in the commune, when the electrical grid expanded to the proximity of the commune. Some households are connected to the grid, though most the residents still get electricity using 12V car batteries that are charged with diesel generators in a town nearby.

The main sources of water for the locals in Sre Chea are community ponds, rainwater collected with large jars and shallow hand dug wells. To save time and energy, many residents buy water in the market place or along the roads with home-delivery. The delivered water is mostly taken from community ponds. The open sources of water are vulnerable to contamination like animal feces, as animals can enter the ponds freely. As stated in the RWC's project proposal, the unsafe drinking water is a cause of many water borne diseases, such as diarrhea, in Sre Chea as well. During the visit I took notice of birds swimming in the pond and litter on the sides and floating on the water. The large jars containing water seemed to be usually left uncovered, which RWC cautions on their website can cause breeding of mosquitos and algae or pathogens (RWC webpage 2014). The Cambodian climate is dominated by the south-west monsoon cycle, meaning dry season from October to April and wet season from May to September-October. However, according to the locals, the yearly rains have come late in recent years, and during the fieldwork for this study, the rains were just starting to fall occasionally. The visit taking place in the driest moment of the year certainly highlighted the importance of water and its central role in everyday practices. Scarcity in food is most problematic at the same time of the year, as long droughts affect also food security. During the visit, the dryness of the land showed in the cracked up barren soil, dried up ponds and river channels

1.4 Gendered Cambodia

Cambodia is a country that has gone through traumatic events during the past decades, and is still in transition after three decades of war, violent conflicts and genocide. History of civil war and Khmer Rouge regime (1975-1979) followed by a period under Vietnamese occupation (1979-1989) still has its imprint in the presence of the Cambodians. (Gottesman 2003.) After five years of civil war, the

Khmer Rouge movement seized control in 1975. The estimates for the number of deaths resulting from Khmer Rouge executions and mistreatments vary from 400 000 to over 3 million people, one million having become the most widely accepted estimate (Deac 1997, 235.) The aim of the Khmer Rouge dictatorship was to decline the nation into a self-sufficient agrarian society and bring the nation back to “year zero”. People were relocated to collective farms and forced to migrate to the country side. Most of the (both religious and secular) education and culture was deliberately demolished as well as all the previous government institutions. (Hannum 1989.) As a post-conflict state, Cambodia has had to face reconstructing its governing and education systems, as well as infrastructure that was left neglected (Blunt & Turner 2005).

Cambodia has a population of 15,8 million people (UN data webpage 2016). 79 % of the people live in rural areas, and only 8 % of the rural residents have piped water onto their premises (WHO & UNICEF 2017, 60). Looking at the change in water acquisition in the whole of Cambodia in 15 years’ perspective from 2000 to 2015, there has been a shift from using mainly surface water and other unimproved sources to other improved sources and water piped onto premises. There remains a notable gap in the water acquisition in urban and rural areas, as the figure for piped water on premises in urban areas is 72 %. (WHO & UNICEF 2017.) With one third of the people living below the poverty line, Cambodia counts among the poorest countries in Southeast Asia. Women are a slight majority of the population, and make up the majority of the country’s poor. Over 90 % of the country’s poor live in rural areas and depend on agriculture as their livelihood. (UN Women 2011.)

Despite the reconstruction and progress in many fields, Cambodia remains a patriarchal and hierarchical society (USAID 2006). UN Women (2011) states that women’s advancement is still hindered by the lack of economic possibilities, high rates of illiteracy, as well as gender-based violence. There is still a substantial gap in the illiteracy rates between men and women in Cambodia. Adult (25 years and above) female literacy rate sits at 68 % as the same figure for men is 82 %. (Cambodia National Report for Rio+20 2012, 116.) Moreover, there are clear gender dimensions in poverty and vulnerability. In addition to lower education levels, women tend to have lower access to information and assets. Despite of having many responsibilities within households and communities, they tend to have less say on different levels of decision-making. (Ministry of Environment of Cambodia and UNDP Cambodia 2011, 67.) Asian Development Bank’s report claims that traditionally women’s status has been regarded inferior to that of men (ADB - Asian Development Bank 2012). However, there has been legal and political actions to improve the situation and progress gender equality. Ministry of Women’s Affairs (MOWA) and the Cambodia National Council for Women (CNCW) are working to advance gender mainstreaming in all policies and eradicating

discrimination. Yet, there has been critics on the MOWA's mandate not covering the common governmental responsibility, and on the lack of actual power and funding. (UN Women 2016.) UN Women in Cambodia emphasizes women's stronger participation in politics and decision-making on different levels, together with increasing women's livelihood opportunities (UN Women 2011).

Furthermore, a clearly gendered division of labor prevails in Cambodia, creating disparities between men and women in different sectors of life and labor. One major inequality is that women are less involved in economic activities, and have traditionally been considered of lower status in the labor market. Furthermore, the burden for unpaid domestic and care work is largely on women's responsibility, constraining them from participating in the paid work. (ILO & ADB 2013, 1.) Women overtake more unpaid work than men, the gap being approximated 3.5 hours per day (Ministry of Planning 2007 as cited in ILO & ADB 2013). Time-consuming domestic chores often relate to insufficient public infrastructure for potable water, energy and fuel, together with deficient child care services (ILO & ADB 2013, 49). ADB & ILO (2013) underline engaging women in the work for them to have an equal status in the labor market, to boost the economic and social development of the whole country. Nevertheless, there are some signs that the social norms are shifting, improving women's position in labor market as well as in political decision making (ADB & ILO 2013).

2 THEORETICAL BACKGROUND

This section I will start by prefacing the background of gender in development policies and gender mainstreaming, and give a brief introduction to gender mainstreaming discussion in development practices, particularly in water context. I will then move onto presenting the concepts of practical and strategic gender needs (Molyneux 1985; Moser 1989), which I will later apply in the discussion, reflecting this conceptual framework with the studied case.

To begin with, it must be said that the notion of gender has various definitions and interpretations. In the water sector, gender is claimed to be often equated with 'women' as a category (Coles & Wallace 2005, 8). Gender theory stresses that gender should not be paralleled with sex, even though they are related (Oakley 1972). In everyday language, gender is easily mixed with sex and biological characters, yet failing to understand the essence of being a woman in different cultures and times (Ahmed & Zwartveen 2012, 11). Ahmed and Zwartveen (2012) underline that gender is a social construction rather than a biological necessity. The concept of gender is useful in seeing social differences and meanings given to men and women (ibid., 12). Agarwal (1994, 51) argues that

relations of power between men and women not only cover a set of practices and ideas from roles, resources and division of labor, but associates also different abilities, behavioral patterns and personality traits to women and men. There is incoherence in the use of the term also within development researchers and practitioners, and consequently the ways it is understood results in the outcomes of development projects with gender goals. (Joshi & Zwarteven 2012, 161.) Cornwall, Harrison, & Whitehead (2007) claim that the term gender has been used for reshaping and defining development interventions for different purposes. Highlighting the struggle for interpretive power, they state that gender, as well as policy objectives and gender analysis, must be challenged within feminism (ibid.).

2.1 Gender in (water) development policies

Women in Development (WID) and Gender and Development (GAD) are theoretical approaches representing a conceptual shift in the development discourse on gender, also prefacing the discussion on gender mainstreaming (Davids, van Driel, & Parren 2014). There are various other feminist theoretical frameworks, but these two are shortly presented here to provide some background to preface the theoretical concepts, as WID and GAD can be named the two main theoretical intersections of feminism and development (Connelly, Murray Li, MacDonald, & Parpart 2000). Having increasingly more evidence that ‘development’ was having different impacts on women and men, the liberal WID approach emerged in the 1970’s as the first contemporary movement to claim the integration of women as a part of the development. In that time, water sector was one of the first to recognize the importance of women’s role and contribution in development projects (Coles & Wallace 2005, 3).

On one hand, the technology optimistic side in WID saw potential in technologies in attributing to social structures and answering gender inequalities. In terms of water projects, the main question was to assure access to everyone to the new technologies. On the other hand, the technophobic views regarded new technologies as embodiment of the patriarchy, since technologies were mainly managed and reigned by men, leading to reinforcing the discriminating structures. (Zwarteven 2012, 368-369.) The WID approach was criticized for not questioning the actual root causes for women’s repression, and for not acknowledging the importance of altering the gender power relations to improve women’s status (Mattila, Sato, Seppänen, Vainio-Mattila, & Vuola 2016, 264). In development projects, the gender perspective was mainly left for women-specific projects, or alternatively a women related component was added to larger sectoral projects (ibid., 274). Mattila et

al. (2016, 265) claim that WID had an impact on bringing gender issues on agendas in development policies, yet failed to progress women's status.

Later, the GAD approach emerged to call for attention in the gender systems and the gendered power relations (Mattila et al. 2016, 266). Where WID emphasizes women's inclusion as a measure to achieve more efficient planning processes and contribute to development in productive activities, GAD claims that women cannot be viewed as an isolated homogenous group (Moser 1993). Instead, the focus was put on gender relations and the ways in which relations between the categories of 'men' and 'women' are socially constructed, time and space specifically in different societies (Moser 1993). GAD is sometimes also referred to as "gender-aware planning" or "empowerment approach" (Connelly et al. 2000, 62). GAD looks at women and development in connection with material conditions as well as class position, similarly paying attention to the patriarchal structures defining women's subordination (ibid.). Features from the GAD approach can be seen in current development cooperation, but the use of the term is rarely used today (Mattila et al. 2016, 265). However, critics claim that GAD in practice tends to represent a top-down approach, leaving participation in agenda setting relatively thin (Cornwall 2003).

In 1981 the UN announced the International Water Supply and Sanitation Decade to bring attention drinking water and sanitation issues. During this period, the attention shifted from large-scale technocratic water solutions to small-scale community-based approaches that put value to local knowledge. Participation grew into a policy emphasis, leading to a paradigm shift in water policy, also contributing to a larger scale call for more democratic governance. (Zwarteveen & Ahmed 2012, 70-71.) Many participatory tools and methodologies were introduced for the water professionals to develop their practices to meet the new paradigm (Zwarteveen & Ahmed 2012, 71; Cleaver 1999). The new era of participation made women visible as users and managers of water. The policy attention highlighted engaging women in the planning, design and managements water projects, and especially in drinking water projects. (van Wijk-Sijbesma 2001.) Women's *empowerment*¹ was seen as a means to contribute to meeting the goals of both equity and efficiency. It is however controversial whether the recognition proceeded women's empowerment or in fact reinforced the gendered division of labor and women's role as the manager in the domestic sphere and their reproductive role. It remains dubious whether participation merely improved women's access to water or if it managed to contest

¹ According to Kabeer (1994) there is no consensus on the ways of using the concept of empowerment, but she defines it as an interest of marginalized groups for alternative ways of defining the agenda for development, based on their own grassroots experiences. In participatory projects the power however tends to stay with the authorities, despite of participatory development rhetoric (ibid., 223).

the prevailing social and gender inequities. (Zwarteveen & Ahmed 2012, 71.) For example, Mayoux (1995) criticizes that participatory management organizations often support the same hierarchies as top-down development, as inequalities in people's resources, available time and power influence the participation.

In the 1990's, neoliberal policy climate started to take over as a part of larger reform of promoting privatization (Joshi & Zwarteven 2012, 165). The emphasis was earlier on centralized projects run by governments, but now the public provision and management of water was seen too costly and inefficient. The role of the public sector shifted to enabling and regulating, rather than providing water. (Coles & Wallace 2005, 2-3.) Neo-liberal approaches in development policy added weight to efficiency objectives also concerning water and gender linkages. Involving women became a means to gain efficiency in the project implementation and succeed in completing projects with reduced costs and time. Justification for addressing gender issues was gained by emphasizing women's productive potential, cost-recovery and privatization, rather than fostering democracy and empowerment. (Joshi & Zwarteven 2012, 166.) Joshi & Zwarteven (2012, 162) claim that yet currently the dominant water paradigm puts value on economic efficiency rather than on challenging the social norms of gender inequality by genuinely having the disadvantaged people to influence the planning, design and management of water delivery systems.

2.2 Gender mainstreaming as a development strategy

Dauids et al. (2014) see gender mainstreaming as a continuum of earlier debates of the previously presented WID & GAD approaches. Especially Beijing Declaration and Platform for Action in 1995 introduced the term *gender mainstreaming* into development policy, making it a global strategy for the promotion of gender equality and a buzzword in development agendas (Mukhopadhyay 2014, 356). The Beijing Declaration emphasizes the two-strategy principle, meaning that both gender specific and gender mainstreaming projects are needed to gain results towards gender equality. It urges the inclusion of gender-perspective in all decision-making. The ECOSOC agreed conclusions 1997/2 defines gender mainstreaming as:

“the process of assessing the implications for women and men of any planned action, including legislation, policies or programmes, in all areas and at all levels. It is a strategy for making women's as well as men's concerns and experiences an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated. The ultimate goal is to achieve gender equality.” (ECOSOC 1997/2, in UN 2002)

Gender mainstreaming sets gender as a cross-cutting issue to all development cooperation, and addresses gender sensitive objectives. However, the concept of gender mainstreaming is challenging, as the term is understood in various ways in practice (Ahmed & Zwarteven 2012, 18; Walby 2005). According to feminist critiques, there is a danger that gender is “mis-streamed”, when the solution and approach are technical strategies in the name of gender mainstreaming, rather than transforming and understanding the gender inequalities on all institutional levels (Mukhopadhyay 2004). On the community level, gender mainstreaming tends to be covered as a question of numbers, with defined quotas for women’s participation in water management institutions (Ahmed & Zwarteven 2012, 19). Joshi & Zwarteven (2012, 162) point out that involving women in projects does not automatically mean understanding the local inequalities, but is an easy way to contribute to the quantifiable factors of gender mainstreaming in development interventions. To avoid this “mis-streaming” and to genuinely address inequalities in gender relations, it is essential to understand not only the local inequities, but also the time and space to challenge these realities (ibid.).

Joshi, Fawcett, & Mannan (2012, 170) state that many projects fail to take gender as equal to women, assuming them being a homogenous group with similar water needs and interests. To address the ultimate goal of gender mainstreaming, it requires understanding the complex idea of gender and how it intersects with class, age, race, religion and other social differences (ibid.). Ahmed & Zwarteven (2012, 22-23) argue that gender tends to be reduced into a technical strategy, especially as the water profession mostly builds on engineering knowledge, looking at water as “*non-social*”. The fact that gender is not in the core of water management profession, Ahmed & Zwarteven suggest (2012, 21), is a fundamental challenge for embedding gender mainstreaming in project practices. All in all, critical views claim that the gender policies contradict with ground realities, leaving the results mainly poor, as the policy of gender mainstreaming does not translate into practice (Joshi & Zwarteven 2012, 161; also Wallace & Coles 2005, 2-4).

To follow-up on gender mainstreaming efforts and results, it is a frequent practice to evaluate donor-financed projects. Yet one problem is that project evaluations tend to focus on measuring gender effects in numbers of participants, representatives or water connections, leaving the analysis superficial. The social relations are too rarely given a deeper scrutiny, to understand how the water access is used and the benefits distributed among locals. (Coles & Wallace 2005, 4.) In recent years, intersectional gender analysis has become more common, and it aims to address more closely the varying positions among and between different groups, such as ethnical groups or professions, in addition to gender (Mattila et al. 2016, 278).

2.3 Gender in drinking water practices

I will briefly introduce discussion on water intervention practices, taking a closer look at reasons why gender mainstreaming goals fail to be met. Joshi & Zwarteveen (2012) state that water projects still tend to fail serving the marginalized and contributing to the local inequalities. Therefore, it is essential to dig deeper in the gendered water relations and practices to understand the context and background of how gender shapes water use and management, and how the efforts in gender mainstreaming can be turned into good practices and equitable outcomes (Coles & Wallace 2005, 2).

To begin with, Joshi & Zwarteveen (2012, 172) underline that ‘development’, ‘progress’ or ‘empowerment’ should not be defined without those who are subjects to it. This evidently means having also women participate early on, which is problematic as they tend to be left out in the planning and design as well as implementation of water management projects. In some cases, there still prevail presumptions on the side of the planners that men represent the needs of the entire household (Lahiri-Dutt 2012, 492). In some occasions when women do participate, they may find it difficult to speak up, or their points are not genuinely taken into account (Momsen 2004, 117-118). Regmi & Fawcett (1999) list barriers for women’s participation in water management meetings; reasons can vary from social and cultural factors to lower literacy and lack of involvement in projects. For overcoming the problems, they suggest gender training and awareness raising for all, especially encouraging men to share household responsibilities with women. For example, child rearing is one major hindrance for women’s participation. Also, motivating, trainings for literary and building up their confidence, with adequate time beforehand, would be essential to prepare women for taking up new roles in development projects. Regmi & Fawcett (1999) also point out that without changing the division of labor and easing women’s workload, it is difficult to have them participate in projects with limited time resources. (ibid., 65-66.)

Similarly, Moser (1989) states that women’s triple role in production, reproduction and community management in most Third World low-income families leaves women with little energy and time in project activities. The threefold distinction derives from literature on gender from both Third and the First World (Moser 1993, 28). Reproductive work includes childbearing and rearing, which is required for maintenance and reproduction of the labor force, as Moser (1993) puts it. Productive work usually means being the secondary income earner in the household, which in rural areas tends to be agricultural work. Women’s community management work usually centers around providing resources such as water or firewood for collective consumption, instead of taking part in community decision-making, as these responsibilities are more traditionally related to men. (Moser 1993.) Regmi

& Fawcett (1999, 67) argue that women's triple role is a decisive hindrance for participating, especially when women do not have anyone to share domestic work with - even if the husband otherwise were favorable for family's women's participation. Kulkarni & Joy (2012, 104) suggest that women's participation could be best enhanced by creating informal networks or separate social spaces; enabling environment for women, rather than formal institutions. They also draw attention to the importance of civil society; women's movements and NGO's, to promote transformative agenda and challenge the gender relations (ibid.).

Additionally, when it comes to the introduction of new water delivery systems, Singh (2012, 421) points out that many studies show that the installation of a new water access does not necessarily replace other sources of water, especially when it comes to cooking and drinking. For analyzing the reasons leading to ineffective use or low levels of adoption of a new water technology, Singh's examination on fluoride and arsenic mitigation technologies comes down to the question of *appropriateness*. Appropriateness of a new water source is defined 'safe' and 'good quality', determined by four physical qualities: color, smell, taste and freshness. When a new technology fails to meet the criteria, it may lead to depending on previously used water resources. (Singh 2012, 421.)

Reflecting the micro-scale projects with the bigger picture, Ahlers & Zwartveen (2009, 418) call for linking local water struggles to global water strategies and discourses, and for feminist projects to situate their analysis in the current water reforms. They also underline the complex nature of water as a right and a natural resource (ibid.). Boelens & Zwartveen (2005) point out that right to water should not be comprehended only as a right to the resource itself, but can also cover rights to the infrastructure and the technology used to transport the water, rights related to the distribution as well as rights to the decision-making on who has the right. In comparison to other natural resources, rights to water tend to be contested at various levels as it is socially and culturally embedded, and linked to technology and infrastructure (Ahlers & Zwartveen 2009, 419). Furthermore, on household-level the rights interlace with household relations and negotiations (ibid., 418). Likewise, the rules, rights and duties related to water are tied to different non-water related rights and chores, like economic and social networks and political affairs (ibid., 412). Ahlers & Zwartveen's (2009, 411) research on water control and gender, in the context of irrigation water, applies to the drinking-water and household setting as well, as they state that having both the legal possibility and social power does not necessarily guarantee physical access to water. Technology and skills are needed to transfer the water from the source where it is needed (ibid.). On the other hand, the modes of access to and control over water vary and are differentiated by material and social divisions; cost, labor time, decision-making, etc. (Ahmed & Zwartveen 2012, 10). Also, the quality, reliability and cost of water varies

according to many factors, such as the condition of the water source, geographic distance to the source, investments in water infrastructure and one's social, economic and political position (ibid.). Ahmed and Zwarteween (2012, 11) state that "*inequities are socially embedded, ecologically shaped and technologically constructed*". Therefore, in development practices it needs to be recognized how gender relations relate to material inequalities and influence water security and individual's vulnerability.

2.4 Practical and strategic gender needs

When carrying out a gender-sensitive development interventions, and aiming to affect the prevailing gender system, the concepts of *practical gender needs* and *strategic gender needs* can be used as tools for gender analysis (Moser 1993). The concepts originate from the work of Maxine Molyneux (1985) and her threefold conceptualization of *women's interest*, *strategic gender interests* and *practical gender interests*. As in the GAD perspective, Molyneux (1985, 232) pinpoints the importance of distinguishing that women's interests refer to women as a biological (assumably homogenous) category, whereas gender interest are socially constructed set of relations and material practices. Molyneux (1985) states that women may have shared interests, but to avoid the misleading assumption of homogeneity, it is important to apply rather the concept of *gender interests*. Building on Molyneux' work, Moser (1993) explains that in a planning setting, it helps to explain how an *interest* (defined as a "*prioritized concerns*") translates into a *need* (i.e. "*means by which concerns are satisfied*"). Moser (1993) argues that the concept of gender interests by Molyneux (1985) has theoretical value for gender analysis, but in a planning setting the distinction between strategic and practical gender *needs* is of more importance. Though these concepts are occasionally used mixed, in this study I apply the concepts of strategic and practical gender needs, drawing on Moser's (1993; 1989) work. In her gender planning framework (Moser 1993, 93) (which relies on the GAD approach) one of the planning tools in gender planning methodology is *gender needs assessment* that is used for recognizing women's practical and strategic gender needs and for measuring the changes regarding these needs. It is also used to identify causes of subordination as well as barriers preventing the elimination of these causes (Moser 1993, 98).

According to Moser (1993, 38) understanding the division between women's needs, strategic gender needs and practical gender needs helps formulating tools for identifying local interests, and translating them into needs, eventually satisfying their concerns. Practical gender needs concern concrete conditions and immediate everyday practices, and addressing them help women to perform more

efficiently in their current activities (Moser 1993, 155; Connelly et al. 2000, 63). Practical needs are for example the need to provide food, water, shelter or health care (Moser 1989, 1803). Moser (1993, 88) describes practical gender needs being technical in nature, in that they help women to achieve and manage their current tasks. Strategic gender needs, on the other hand, are ones that empower people, help overcoming subordination and achieving greater equality. They are interconnected with gendered division of labor, power and control, covering issues such as legal rights, women's control over their bodies, or equal salaries. (Moser 1993, 39-40.) Strategic gender needs are defined often as 'feminist', whereas projects aimed at merely meeting women's practical gender needs are in line with women's socially accepted roles, and not similarly feminist in content (Moser 1993, 41). Rather than challenging women's subordinate position, Molyneux (1985, 233) claims, that practical gender needs arise from them. Hence, these two categories of needs are interlaced, but do not always support one another. For example, when practical gender needs are satisfied by making water acquisition easier, it might even reassert the prevailing division of labor and women's subordinate position, rather than contest it (Moser 1989, 1800).

Regmi & Fawcett (1999) stress that drinking water interventions ought to aim addressing strategic gender needs in addition to practical gender needs, not only to contribute to gender equality, but also to make sure the project helps women and men to meet their practical gender needs efficiently. They claim that Moser's concepts are familiar among the development practitioners who are trained in gender analysis, yet remain unknown for the conventional planning of water projects (*ibid.*, 62). They also point out that the engineering profession mostly consists of men, and instead of gender objectives the water professionals are trained to be concerned about the technically viable outcome of the project, rather than social impacts. Therefore, the water professionals often have a practical approach to water projects, though their work ultimately concerns achieving the twin goal of helping the people to meet their practical gender needs, as well as enabling the marginalized to improve their position. (Regmi & Fawcett 1999, 63.) Therefore Regmi & Fawcett (1999) put importance especially on the strategic gender needs, since giving attention to addressing them is the only way to ensure that also the practical gender needs are truly met, and which is why they should be incorporated in project planning more closely. Also Moser (1993, 103) stresses that planners need to be aware of women's triple role and understand women's and men's roles in society to advocate participatory planning. Lack of understanding how women balance with their time allocation can ultimately lead to project failures, excluding women from participating (*ibid.*).

In the light of previous studies, Regmi & Fawcett (1999) claim that including women in income generation activities may lead to strengthening strategic gender needs, though it does not necessarily

alter women's social status if they do not have a say on the use of the income. Income earning can also be a way to earn appreciation from the husband and thus contribute to strategic gender needs (ibid., 69). Also employing women as project staff is one way of including them in development projects, though this is less common when it comes to technical and senior positions. (Regmi & Fawcett 1999). However, Moser (1993, 168) points out that participation should not mean burdening low-income women with workloads, using them as cheap labor. Regmi & Fawcett (1999) and Hovorka (2006) pinpoint the importance of having an emancipatory agenda within a development project, to address practical and strategic gender needs throughout projects. Singh (2012, 412) claims that water represents a practical gender need for women, and on the other hand domestic water management embodies their reproductive role, as the family members are beneficiaries from it. Singh (2012) refers to the concept of appropriateness, when defining the relationship between a technology (that works as a mean to fulfil the water need), the environment and the purpose. She points out however that even if a water technology were appropriate in terms of women's gender needs, there is also the question of accessibility, which can depend on factors such as information, financing, training or availability of the technology (Singh 2012).

I decided to use the widely-noted pair of concepts of practical and strategic gender needs in this study, as they connect well to the academic discussion on gender mainstreaming and critique on the contrast between gender mainstreaming goals and ground realities. Considering the relatively narrow scope of the research, the concepts certainly provide only one angle to the problematics of gender mainstreaming. Although this is not a recent framework, I found it one to be suitable for this study, as the idea is firstly to give space to the interviewees' voices, and secondly look at their stories from a perspective that reflects the academic debate, rather than forcing the varied experiences and perceptions in a strict framework. In addition, a water intervention with gender mainstreaming targets provides an ideal example for looking at a project that has potential to provide both practical and strategic benefits by means of a basic need such as water.

3 RESEARCH METHODS AND DATA

The qualitative approach of the study suits the aim to understand the local context of the chosen case and capture women's detailed experiences. In qualitative research the focus is in comprehending a subject or a phenomenon as comprehensively as possible, instead of making statistical generalizations (Hirsjärvi, Remes, & Sajavaara 2010). Thus, the idea is not to produce a representative sample of the women in the Sre Chea community, but to reveal different individual realities of women representing different socio-economic situations and backgrounds. The study intends to bring out community's perspectives in their richness of details, focusing on individuals' experiences. On the other hand, as Töttö (2004) states, research can never reach a phenomenon in its full complexity and depth. The researcher cannot claim to be objective and distanced from the study, but rather aims emphatically to understand the subject of the research by interacting with the research subject (Hirsjärvi & Hurme 2008, 23). Similarly, the ontological assumptions on the nature of the reality in qualitative research typically base on the notion of the reality being socially constructed, and that there are as many realities as there are people interpreting it (Glesne & Peshkin 1992).

This case study draws on ethnographic methodologies, using semi-structured interviews and participant observation as methods for data collection. Ethnography is a methodology, a theory that guides the research process (Lappalainen, Hynninen, Kankkunen, Lahelma, & Tolonen 2007). Ethnographic traditions are various and the definition of the term cannot be easily simplified (Atkinson, Coffey, Delamont, Lofland & Lofland 2001). Cook and Crang (2007, 2) sum up the purpose of ethnographic methods to “*understand parts of the world more or less as they are experienced and understood in the everyday lives of people who ‘live them out’*”, which captures also the core interest of this study. Ethnographic researcher aims to understand the community's everyday life and practices (Lappalainen et al. 2007). Lappalainen (2007, 10) underlines that physical and emotional presence is what makes ethnographic research process special. Similarly, according to Atkinson et al. (2001, 5) first-hand exploration *within* the research context is a central feature of ethnography. In his noted book *The Interpretation of Cultures* anthropologist Clifford Geertz (1973) refers to ethnography as *thick description* of culture, meaning a profound and diverse examination of the researched phenomenon. The use of multiple data collection methods is key in constructing the *thickness* (ibid.). Moreover, time is a factor that brings depth and comprehensive understanding to the process. In this study, ethnographic approach is valuable drawing attention to local experiences and perceptions on water practices, as well as for understanding cultural meanings. Ethnographic research is often based on long periods of fieldwork and presence in the studied context, letting the

researcher to be absorbed into the social sphere of social positions and constructions (Tolonen & Palmu 2007, 89). However, a vast time period is evidently not possible in every research setting. In this study, given the limited resources and time in the field, combined with the scope of this research, the fieldwork period in Sre Chea commune remained relatively short. In this sense, the research does not exhibit full-scale ethnography, yet the ethnographic approach has guided the data collection and research process, and thus brings valuable insight for the study.

Moreover, as the aim is to bring out the experiences of rural women, who in previous studies are considered marginalized in a context like the one in the case project, this setting brings inevitably feminist perspective to the study. Sociologist Beverley Skeggs (1997, 23) claims that initially there was political motivation to use ethnographic methodologies to make space for the articulations and experiences of the marginalized, which is also a central feature in feminist research. Feminist ethnographers' interests lie in the gendered power relations and in the creation of gender hierarchies (Gordon, Holland & Lahelma 2001, 194). Ethnographic feminist perspective is necessary in understanding the everyday practices and marginalized individuals' subjective experiences on the development processes and their impacts. For Skeggs (1997, 23), feminist ethnography represents a theory of the research process, which aims to make the researcher's preconceptions, approach to ethics, power-relation and researcher's responsibility visible in the research process. The researcher's position needs to be particularly critically viewed and acknowledged especially in a third world context. Objectivity is not possible to be reached, as the researcher's own views and values affect the way of understanding and interpreting phenomena. (ibid, 161.)

The feminist perspective in this study is defined according to Lappalainen (2007, 10), who describes that the essence of feminist perspective is acknowledging that the information is contextual, and knowledge and ways of knowing are fastened upon places and people. On the other hand, both in ethnography and feminist research, the research process is based on a respectful and conscious way of encountering the research subject (ibid.). A researcher who is oriented in a feminist perspective not only aims to hear and listen to different voices in the field, taking different groups and individuals into consideration, but also strives for sensitivity recognizing varying interpretations presented by each individual (Tolonen & Palmu 2007, 92). Accordingly, it is important to acknowledge that the women in Sre Chea do not form a homogenous group, as all experiences are not necessarily shared, though they are referred to as an entity. Moreover, it needs to be clarified that despite comprehending the marginalized position of the women in the presented context, it is not to victimize them as a group. Therefore, it is essential that the researcher leaves room for the interviewees' views and does not over-interpret their words (Tolonen & Palmu 2007, 91). The speaking for the interviewees added to

the critical self-assessment in the researcher's position link to a discussion in the feminist research field, and in feminist and post-colonialist research have discussed power relations within the research process (ibid., 95.). Especially in the 1980's there was debate within feminism on who is entitled to do research on whom – and claim to genuinely understand “the views from below”. However, it is suggested that the key is to sensitize to the power relations and social differences in the research process, as the power relations in the field are rarely entirely equal. (Tolonen & Palmu 2007). Also in ethnographic research it is typical to contemplate the researcher's position in relation to the field to bring transparency to the interpretation (Huttunen 2010, 45).

Being a case study, this research aims to produce a comprehensive description of a phenomenon in a real-life context. Case studies typically strive to gather detailed information on one case or a few chosen cases that are related, focusing on an individual, group, community or an organization that is researched in a specific time and place (Hirsjärvi, Remes, & Sajavaara 2010, 134–135). Laine, Bamberg & Jokinen (2007, 10) list typical features of a case study, which relate well to this study as well. Firstly, a case study is a holistic analysis using various methods, and it is interested in social processes. Case studies contemplate similarities with previous studies, leaving the line between the case and the context blurred. Finally, an important justification for this case study, pointed out also by Laine et al. (ibid.), is reflecting: what can be learned from this specific case?

As for data collection methods, semi-structured interviews serve as the key method for this study, participant observation being a supplementary method. The research data consists of 17 interviews with different informants. The 13 interviews with the local women are the key data for this study. Additional individual interviews were conducted with a RWC representative in Phnom Penh and the Sre Chea commune chief in the commune. Furthermore, there were two group discussions in the commune, firstly with village leaders and WASHE committee members, and secondly with four local women to underpin the upcoming individual interviews. Participant observation offers additional insights for understanding the practices and daily lives in the studied context. Observations in the field, fieldnotes as well as project background documents work as secondary research data. The four project documents are:

- Project proposal (July 2011)
- Semi-annual progress report (April 2012)
- Project completion report (May 2013)
- Project evaluation summary (No date displayed)

The project documents were provided to me on request by the EEP Mekong personnel, except for the semi-annual progress report that I received from the RWC representative during the interview. The documents provide a comparison for the intended and evaluated effects of the project. The project proposal and completion report are compiled by RWC, and the 4-page evaluation summary is made by an external evaluator. However, it must be noted that the project background documents should not be regarded as direct implication of RWC's actions and work in practice. Further interviews with project personnel that has been working closely with the project would provide deeper understanding on the project planner's views and e.g. how they have worked on defining equality goals and objectives of the participation. It is also important to notice that this study does not give a comprehensive overview on participation or project activities carried out throughout the project, but draws a picture based on the interviewees' narratives.

3.1 Fieldwork

I visited Cambodia in May 2016, which is when all the interviews were carried out. The first interview, with a representative from RWC, took place in Phnom Penh. The interviewee did not have responsibilities in the project, but had followed the project and was named as a contact point by the director of the organization. With the help of RWC personnel, I was able to set the dates for visiting the Sre Chea commune prior to the arrival in Cambodia. The visits to the commune took place on 15 May – 18 May in 2016. I did daily visits to the commune, and was accommodated at a close-by town, Kep, during the period. The 30-kilometer trip to Sre Chea from Kep took about one hour by car. The first interview in Sre Chea was with the commune chief, who gave background information on the commune and the implementation of the project. Before focusing on the individual interviews with the local women, there was a group interview with WASHE committee members and village leaders, and another one with a small group of women. As I did not share a language in common with the interviewees, the interviews in the Sre Chea commune were conducted with the help of a Khmer speaking interpreter, with whom I communicated in English. Having an interpreter with me at all times made it possible to have also short informal conversations with passers-by, for example with people fetching water from the pond. Remarks on unformal encounters I have included in the field notes, and they are indirectly part of the gathered data as observations made in the field.

Due to the partly sensitive content of the individual interviews (such as women's position in the community), ideally the interpreter could have been female. I am aware that there is a possibility this has caused bias in the interviews, although a female interpreter (most probably from a higher socio-

economic status) would not have secured impartial data either. Therefore, I see that having a young respectful male interpreter was not a considerable risk of bias for the research.

During our stay in Sre Chea, the translator and I had a local gatekeeper showing us around and arranging the meetings with the interviewees. Having this local female guide helping us (who was also a member of the WASHE committee) was essential in reaching interviewees in the commune. In advance of my visit, I had been in contact with the commune chief with the help of RWC, and wished for having interviewees from different backgrounds and ages. Fortunately, as requested beforehand, interviewees represent various backgrounds in the community. In addition to being welcomed in interviewees homes, a gatekeeper made it easier to gain the interviewees' confidence, as we had an insider introducing us to the interviewees. Nevertheless, reaching the interviewees with the help of the relatively influential gatekeeper and commune chief, it makes it difficult to estimate whether the participants had a genuine choice of declining the interview. However, there were no evident signs of reluctance to take part in the interviews. To thank the interviewees, I left small gifts for the interviewees and their families, such as postcards and biscuits for children, as well as textbooks to be delivered for the use of the school. To avoid cultural misunderstandings or unintended offences, I had explored literature on Cambodian cultural norms and manners, and observed and discussed the culture with my Khmer acquaintances along the journey before visiting the village.

3.2 Semi-structured interviews as a method for data collection

Semi-structured interviews are a commonly used method in ethnography and social sciences in general, and they are applied as the key method for data collection in this study. Semi-structured interviews have an agenda of themes set before hand, which are discussed in the interview. Structured interviews, which are often used in surveys for instance, go through a set of questions exactly similarly with each interviewee, but semi-structured interviews allow a more open way to discuss the set themes. (Hirsjärvi & Hurme 2008, 47-48.) Semi-structured interviews put premium on the experiences of the interviewees and by giving more room to their views, reduce the role of the interviewer (*ibid.*, 48). However, in this case some level of structure in the interviews was needed, as I did not share a common language with the interviewees. Especially working with an interpreter, having a clear set of themes and questions not only made it possible for the interpreter to translate the questions precisely, but also for us with the interpreter to discuss the possible ambiguities in the translation of the questions beforehand. This is why I ruled out the option of unstructured in-depth

interviews as a method. Semi-structured interviews suited the research frame well, bringing flexibility and interactivity to the interviews as well as reliability regarding the translation.

Interviewing as a data collection method is communication between two (or more) people based on language. The interaction consists of words and the interpretations and meanings, and the researcher aims to understand how meanings are being constructed on a specific subject. However, there are new meanings created also within the interview. (Hirsjärvi & Hurme 2008, 49.) Crang & Cook (2007, 82) underline that ethnographic data is constructed intersubjectively, as the researcher and the researched construct intersubjective understanding together. In this study, the ethnographic approach has shaped the data collection regarding the interviews as well. In ethnographic interviews, Tolonen and Palmu (2007, 92) stress that the formation of the questions should not be constructed only in relation to the research literature on the phenomenon, but also considering the reflections made in the field. Every interview after another brings more understanding on the nature of the “field” and the studied context (ibid.). This proved to be critical in the fieldwork, as my tentative information on the studied case relied only on the project background documents and later also on the interview with the RWC representative. Therefore, it was clear that the interview structure and the list of question were reconsidered in the light of the observations made in the first interviews. Research literature and previous case studies were present in forming the themes and preliminary questions. I ended up making some adjustments during the interviews, omitting some questions that proved to be more irrelevant and emphasizing other themes. For example, as I started to understand that most women had not been very actively part of the planning phase, the interviews concentrated more on the use of the system and the changes it had introduced to the interviewees’ lives rather than the process of project design and participation. Neither did the electricity provision side of the project get emphasis in the interviews, and therefore most of the questions related to electricity were left out. The themes were the same in all interviews, adjusted according to the specific interviewee or group of interviewees. In the individual interviews with the local women the themes were the following: 1) Background information, 2) Access to the water supply system, 3) Participation in the project (covering information, knowledge, representative committee, taking part & making a difference), and 4) Changes. The interview structures for the individual interviews with the local women can be found in appendices 1 & 2.

Ethical issues are inevitably present in a research setting in a culturally unfamiliar environment, and the role of the researcher gets easily satirized (Crang & Cook 2007, 9). The methodological considerations allowed me to give space to the interviewees voices to some extent. However, I understand the restrictions with using an interpreter, and ideally it would be best to share a language

with the interviewees, to understand the ongoing interviews at least to some extent, not only to avoid misunderstandings but also to be able to better facilitate group discussions. In this case, instead of detailed translations more important was imparting the content, as finest nuances and meanings of the language and cultural context are inevitably lost in the translation. (ibid.) Ethnographic research is often conducted in a setting, where the researcher's native language is different from that of the informants (Huttunen 2010, 32). This aspect affects the analysis phase of the research as well, when interpretations cannot cling to linguistic nuances. In a research setting of intercultural interviewing it is of great importance to contemplate and observe the different manners of understanding the world and how the meanings or connotations that impressions hold cannot be translated or transferred from one language to another. (Shah 2004.) Shah (2004, 552) points out that cultural differences influence the construction of meanings between the interviewer and the interviewee as other additional variants, and increases possibilities of misunderstandings. Therefore, interviewing across cultures requires more caution in the two-way process of "*making meaning*" (Shah 2004). To avoid misunderstandings, I wanted to keep the questions on a very practical level and form the questions as unambiguous as possible and connected to practical everyday life.

3.2.1 Individual interviews

The local women in Sre Chea serve as the main informants in this study, being experts in their own daily lives and experiences. Ten of the thirteen interviewees have access to the water supply system and three are not connected to the system. All the interviewed women are from Prey Pi village, except for one from Sophy. The idea was to have interviewees from different socio-economic levels, representing different age generations. The women are from 27 to 72 years old, the average age being 47 years. They are all mothers and some grandmothers of their families. The years of education vary from 2 to 9 years. Four do not have any education and one informed to be illiterate. The youngest informants are primarily the ones with most education.

The local gatekeeper was helping in estimating the income levels of the interviewees, as asking it directly from the interviewees could have been considered intrusive. The income level among the interviewees is mostly mediocre, which in Sre Chea village is from 200 to 500 USD annually per household. Three interviewees have high income level, which is 750–950 USD per year, one exception having incomes of 2000 USD per year per household. Two interviewees represent low income level, one with 30–50 USD per year and the other 250–300 USD per year. A compilation on basic information on the interviewees can be found in appendix 3. The interviewees' numbering (W1–W13) is defined by the order in which the interviews were conducted. No names or pictures of

the interviewees are displayed in the study, nor close-up photos of other villagers. In the beginning of every interview, I ensured the interviewees that the data is treated anonymously. This is also to minimize the risk of bias and have an atmosphere of mutual trust when discussing also sensitive issues.

The interviews took place mostly at the interviewees' homes and home yards. People from further away had been asked beforehand to meet in the nearby houses, where a couple of interviews took place one after another. As the interview themes touch upon the interviewees' daily lives, homes bring reference to the daily life context to the interviews. Meaningful places like homes have feelings and stories fastened upon the special context, which makes the everyday life approach to water tangible. (Crang & Cook 2007, 63.) Additionally, home is a place where most probably the interviewee feels comfortable. In most cases, there were other family members present, mostly small children or sometimes our gatekeeper, following the interviews, even though the families were informed that the women are the ones being interviewed. In three interviews the husband was present, and occasionally commenting the discussion. Mostly the family members did not join the conversation much, and the presence of small children can be regarded a less significant factor to cause biased data. Household members' presence may dominate the interviewees' views (Crang & Cook 2007, 64-65). I acknowledge this to be a matter that possibly has affected the answers, leaving thoughts unsaid and making the women not able to discuss the sensitive questions as openly as in a more private setting. However, out of courtesy, the family members were not asked to leave. In cases where it was possible, the more sensitive questions could be posed when the interviewee would take us around the home yard and present the water connection in their household.

In most of the interviews time was the main restrictive factor. As a matter of courtesy not more than one hour was used for the individual interviews, as I was implied that the people should not be bothered for a long period of time. To recognize an appropriate duration for an interview required reading the interviewees expressions as they might be occupied with their daily chores. Testing different question orders and concentrating on some important themes in different interviews has given a rich data, even if I did not have time to go through all the listed questions with each interviewee. However, it became clear after a couple of interviews, which questions and themes were the most central ones in this context, mainly to be able to adjust the interviews in the time limits.

3.2.2 Focus group discussions

Focus groups bring a supplementary for the study's data. There were two group discussions carried out with two different focus groups. Firstly, with two village heads, one vice head of village and one

WASHE committee member. Both meetings took place in the commune hall. Four of the five interviewees were men and one, the committee member, was a woman. Secondly, there was a group discussion with four local women, two of whom had access to the water supply system and two did not. Also, two of them were WASHE committee members, including the one without access. The interviews took 60-70 minutes. As Crang and Cook (2007, 90) state, focus groups are a useful way of seeing how people process their experiences and thoughts on certain issues in a social context. In addition, it may help pursue ideas and conversation that would not be gained without the interaction with other people. Most importantly in this case, focus group interviews are an efficient means to get information from many people at the same time, which is often an effective option when doing research with a limited time in the field (Hirsjärvi & Hurme 2008, 63).

Group discussions as a data collecting methods do have certain restrictions. There is a possibility that some group members dominate the conversation, making it more difficult to express differing viewpoints (Crang & Cook 2007, 97). What is more, when the researcher does not have a common language with the interviewees, conducting a group discussion brings challenges for facilitating the conversation, partly transferring the responsibility for the moderation to the interpreter. Not being able to understand for example how the interviewees react to each other's comments and follow the interaction made it challenging to lead the conversation. However, there was a clear agenda of themes agreed beforehand that should be covered during the interview. The themes were similar to the ones in individual interviews (see appendices 1 & 2), but room was left for the discussion to develop. Even though it was not possible to translate the discussions thoroughly on the moment, going through the interviews afterwards with the interpreter helped to get a deeper understanding on the discussions. Nonetheless, the individual interviews are the main source of data for grasping women's nuanced personal experiences. The group discussions were helpful in getting a tentative idea on how the project has worked in practice, giving valuable insight for preparing for the individual interviews. All in all, I find that the group discussions bring a good supplement for the study's data. Especially in the women's discussion, the advantages of a shared conversation stood out especially when having the participants exchanging ideas for developing better water management in the commune. What is more, group discussions were a reasonable option for including various perspectives in the research in a rather short time, considering the time limitations in the field.

3.3 Participant observation

Observation and participation are main activities of ethnographic approach, though they are usually used together with other methods (Atkinson et al. 2001, 4–5). Participatory observation is one of the core methods for ethnographic research, used to delve into the world views and ways of everyday life of a certain community (Crang & Cook 2007, 36). Especially if there is not much knowledge on the researched field a priori, observation can help to connect the interview data to be understood more deeply in the right context (Tuomi & Sarajärvi 2009). In this research, to understand the meanings and practices that water holds in the lives of the commune residents, participant observation is a necessary method, especially as the field work took place in a culturally unfamiliar environment. The time spent in Cambodia, also outside the commune, gave me a valuable introduction to Khmer life, culture and habits, especially as I had not visited the country before.

To support the observations made daily in the commune, I was writing fieldnotes on my observations and reflections both during and after the days spent in the commune. Some ethnographers consider fieldnotes merely diaries and observations on the field, but some prefer a more structured form of making notes. Following Emerson, Fretz & Shaw (2001, 353) I wrote my notes on a daily basis, without a sustained logic or structured principle. This means that after collecting an inconsistent body of notes from the field, not all is incorporated in the research. The notes can include observations on events and scenes, but also researcher's own personal reflections and experiences. Also during the interview, I was making notes on matters that are not audible in the recordings, such as who were present and remarks on the atmosphere. Fieldnote texts work as a form of representation, reducing the observed to written words. As the researcher chooses to write about certain things and leaves out other matters, fieldnotes are unavoidably selective representations. (Emerson et al. 2001, 353-354.) In my notes, I also included general remarks on how the water and related activities are present everywhere, and on people coming to get water from the community pond by the town hall. Obviously, it is not to generalize, but to write down glimpses of observations of everyday practices. In addition, photography was an important tool for taking visual notes and capturing details and atmosphere during the visits to Sre Chea. I used it to record observations on the interviewees' homes and the water connection. I always asked permission prior to taking any photos. In this study report photographs serve foremost as illustrations. Using photography as primary research data would require a deeper immersion in photography analysis (Crang & Cook 2007, 104-106).

3.4 Inductive content analysis

In this study, I analyse the interview data using inductive content analysis. I have transcribed most of the interviews, which resulted in 11 hours of recordings and over 40 pages of transcripts. I also use photography to illustrate the analysis and transmit observations from the field, though no deeper analysis on the photography is given in this study. Inductive content analysis proceeds from empirical data towards a more conceptual view on the researched phenomenon (Tuomi & Sarajärvi 2009). It is a form of text analysis that is used to find and analyze meanings in the data and produce a thick description of the studied phenomenon (*ibid.*, 104). I have carried out the analysis following principles by Miles and Huberman (1994), who divide the stages of inductive content analysis roughly into three procedures. The first phase is data reduction. In this phase, analytical questions, that support answering the research questions, help finding expressions in the data. The expressions are deconstructed and reorganized by descriptive codes or labels. After this, the labelled data is displayed in groups, common themes or categories, and are given descriptive names. The last phase is abstraction of the data and drawing conclusions with the help of these categorizations. (Tuomi & Sarajärvi 2009, 101.)

The interview material forms the backbone for this research, and other data provides supplementation. The use of different methods and data brings value to the analysis as well, when utilizing different methods together to help to contextualize the analysis. Huttunen (2010) underlines that ethnographic research is always attached to the field, and hence should be analyzed in relation to the field and gathered data. For example, interviews can be interpreted in relation to observations made in the field and compare the bigger picture enlightened by other data (*ibid.*, 33-35). As most of the women's interview were conducted in their homes, I have gone over the recordings and transcripts of the interviews together with the photos and field notes to support the analysis. On the other hand, as Huttunen (2010) claims, the field notes made during the field work period already are tentative analysis.

Analytical questions start forming more specifically when familiarizing with the data and when the researcher has a general view on what kind of talk and discourse the data includes (Ruusuvaori, Nikander, & Hyvärinen 2010, 10). The preliminary processing of the data is not a neutral process, but is based on the epistemological and ontological understanding of the researcher, especially what phenomena are present and what is the focus of the analysis (Mason 2002, 148). Ruusuvaori et al. (2010, 15) point out that a purely inductive analysis is therefore not possible, as theoretical choices and researcher's interpretations are infused in all categorizations and researcher's analytical choices.

Yet, by striving to give up on one's own preconceptions and listening to the collected material, new ways of comprehending the data might open up (ibid., 11). This aspect is especially critical in this research with the methodological emphasis on feminist research strategy, and when encountering women living in a social reality culturally different to mine. I do not assume to be able to achieve women's personal experiences in their richness as we inevitably share different epistemological and ontological viewpoints, but I do aspire to offer an elaborate description within this research perspective. Using inductive content analysis, I let the voices of the interviewees lay the foundations and structures for the analysis, instead of using a set framework. To highlight the data and the women's experiences I have also made the decision to carry out the analysis entirely focusing on the data, and to not bring the theoretical background to the debate until the discussion chapter. During the whole research process, I have strived to deconstruct and observe my own preconceptions. While working in the field I was writing down unexpected viewpoints and own reactions on the brought up in the interviews, as well as in the analysis phase by questioning the choices made processing the data.

4 ANALYSIS AND RESULTS

In the following chapter I analyze the gathered data following the principles of inductive content analysis. I will start with prefacing how the interviewees describe their participation in the project planning and implementation, and compare their experiences to the project documents and how they discuss gender (mainstreaming) or mention women. To examine the impacts of the water supply system in the daily lives of the interviewees, I will present changes in the use of water and rearrangements in water access and use. The three categories will elaborate in more detail the changes the water delivery system has introduced. Lastly, I will list proposals for improvement and concerns that are brought up in the interviews. I aim to critically look at different perspectives, and conclude what this indicates on the outcomes of the project from the given viewpoint of the local women. I will complement the analysis with comparing the objectives according to the project documents and group interviews' remarks with the women's experienced effects. The aim is to introduce the data thoroughly, unravel varied and contradicting views, and point out how the defects in the systems have influence on the daily routines once piped water technology is introduced. The analysis section of the study seeks to give space to the perceptions and experiences the interviews bring up, which is why theoretical perspectives and academic discussion are not brought for reflections until in the discussion chapter.

4.1 Participation in the project

The interviews show that there is great interest in being aware of current topics in Sre Chea, but despite of the participation, the interviewed women's input in the project remains nominal. However, the village chief comments that women in the commune are very active in participating in the project, as well as in other activities in the commune. The interviewees show willingness to participate at least to some extent, as almost everyone mentions having participated in some meeting activity, both the ones with and without a connection to the system. The motivation to participate derives from the interest to know about the current issues in the commune, and some see it even as their responsibility as a commune resident: *"I think that I am one villager and part of the community, and I need to attend, to know what the commune will do, and their plans."* (W3). One participant in the women's group interview also mentions snacks as a pleasant benefit from attending events. Also, being able to distribute information to others is named a reason to participate in the women's group discussion. However, in general, the women seem to attend meetings foremost to be informed on the current changes, rather than actively have an influence on the commune's issues. Despite of attendance in WASHE activities, the influence of the interviewed women's participation seems to have remained fairly weak, as it mostly means being present in different kinds of trainings and events, but not actively contributing to the meetings.

In the group discussion, however, the women state that nowadays in general the women in Sre Chea participate more bravely and bring out their ideas with more confidence in the meetings. The individual interviews give a slightly less optimistic impression on their participation, as often the interviewees tell to participate in the meetings listening, but not actively taking part. Most of the interviewees have participated in the voting of the WASHE committee, but not one ran for the WASHE elections. Some women who have not attended the voting meeting, mention having their husband present in the meeting. However, one interviewee stands out with her experiences on the participation, as she has quite positive views about her possibilities to impact the project. Nonetheless, she neither did not feel confident speaking up her ideas, nor did she think that she has the competence to apply for the committee:

"I was in the voting, but I do not want to be a member, because I am illiterate, do not know how to read or write."

If you could [read and write], would you then be interested to be a member in the committee?

[laughing] "If I had attended any schools I would want be to a member also. [--] I have participated activities in the project, and I think that my participation can cause the project, more improving, better. When the system was built I tried to visit and check with the people who are in charge of the maintenance, when will it work normally, some checking." (W1)

Some interviewees describe that they have gained new knowledge in the trainings, but only few specify themes upon which they have learned. The trainings are mentioned to have covered at least hygiene, health, environment, clean water, agriculture, but it is unclear whether all the trainings were under the water project, as there have been some other development activities in Sre Chea, implemented by another external organization. Additionally, a couple of women mention having participated also in the digging of the route for the pipeline, and one of them claims that women were the ones mostly doing the digging of the pipeline trenches. A compensation of 1000 riels (0,25 USD) was paid per meter for the digging.

All in all, many have participated in project events occasionally, only once or twice. Reasons for not participating and for not applying for the committee vary. For example, poor health, inadequate education, or high age are mentioned by many: *“I was involved in the voting, choosing the committee. I do not wish to be a committee member because my eye is weak, I do not see clearly. I am quite old to be in the committee.”* (W2). Comments such as this one show, how it appears that the women have an idea of a criteria for being able to participate more actively or apply for the WASHE committee, but see that they lack the competence themselves. In addition to personal abilities or physical condition, many interviewees explain that they are busy or occupied with household responsibilities and taking care of children, and therefore are not able to participate:

“I was involved in the voting, but I do not want to be a member, because I’m quite busy and my husband goes to work, my children need some food when they come back from school, so there is a lot of work in the house I need to do.” (W12)

In some interviews, it comes across that men are the ones attending commune meetings:

“Mostly my husband attends the meeting, and during the construction also. I’m not involved in the activity. [--] Because I am busy to go to other places, that’s why my husband attends.” (W11)

Information on the meetings and trainings seems to be passed from WASHE members to the locals, and all the interviewees have been informed on the trainings mainly directly by the gatekeeper, who also arranged the interviews for this study, and is a member in the WASHE committee. The interviewees do not have complaints about the adequacy of the information, though one interviewee mentions that the reason for not attending the WASHE voting was not having information about the event. According to the semi-annual progress report, *“32% of the 848 householders in Sre Chea commune had come to join our election campaigns voting for represent members from each village to join WASHE committee [--]”*.

Prior to visiting Sre Chea commune, I was prepared to delve more into the participation in the project, and in views on the WASHE committee, but it turned out that these were issues the women did not seem to have extensively comments on. Clearly WASHE membership and decision-making in the project was not associated something that goes under women's work domain, but rather that of the men. It is interesting to notice that the role of the committee is perceived apolitical, and mainly as the responsible for maintenance and technical support, as well as for collecting the monthly water fees. When asked, the women see the committee to represent the commune as a whole. The committee is contacted mainly when there is a defect in the system. They are told to visit the households monthly to gather water fees. However, it is not clear for all the interviewees what exactly the committee is for or what its mandate is, and for some their role seems ambiguous. On the side of the project implementer, RWC, the representative of the organization says that they have tried to engage women in the planning and for applying in the WASHE committee, and have succeeded to have women in many activities. The members for the representative committee were chosen partly on gender basis, though in the lack of female applicants only 5 out of 14 representatives were women. However, the RWC interviewee emphasizes how it is difficult to activate women, as they have traditionally less decision-making power within the household and cannot act as independently as men:

“For this project, we have set clear the number of men and women to be involved in the project. But some activities, most of them are women to join the event, like awareness raising, most participant are women, but for decision-making they are still waiting for consult discussion with their household, ask the men, because they rely on their husband on decision-making, because they said that the husband is the man who earn income, so the ladies cannot decide by themselves. This is the gap for the female in the community. But still, there are some women who can make decisions by themselves, during the pipe connection or something... But it is still in Cambodia.” (RWC representative)

The RWC representative's comment also illustrates, how the power-relations within the household shape women's participation, especially if women's position is clearly subordinate to that of the man. The changing imbalance in the power-relations came across in the interviews with the women also. In most interviews, there was time to ask also about women's position in the community in general, and how the interviewee sees it has developed during the recent years. Before the fieldwork, I was not sure if it is an issue that is contemplated or recognized by the women. Nevertheless, the interviewees discussed the question presenting thoughts alike: there is a general prevailing idea in the commune that man is the head of the household in all two-parent families, and has more say in the family's decision making. Nonetheless, women's role has been under change over the recent years, letting them talk ever more freely in meetings and having more say within the household, leading to slowly improving women's position in the commune:

“Yes, there are some changes in their behavior. Knowledge, women are prouder, because they attend many meetings and raise their ideas and get some knowledge from education, broad knowledge and the idea more modernized, have changed. [--] I’m active in the meetings but have not raised much ideas, but other group, they are young and raise their ideas and attend many meetings.” (W1)

“More power, more word. Women have more voice to raise in some decision-making in the family- [--] Because they have more knowledge, are cleverer than before. Before they just followed their husband [--], but now they are clever and sometime raise ideas in the commune and the men see that you are raising some ideas. So, the women can speak directly to the man, make decision the man can follow, listen to them.” (W3)

“Seem to be, women are braver to raise their ideas. Before they seem to have limited right, even now they have limited right but it seems to have changed [--]” (W6)

When asked about women’s position in the commune, many of the answers ponder women’s position within the household, revealing the importance of women’s position in relation to their husband, also for the participation in the commune’s level. The reasons for women’s slowly strengthening position in the commune level are connected foremost to education and women’s increased knowledge. As mentioned in the first quotation (W1), even though the interviewee herself did not feel comfortable speaking out in public meeting, she sees a change in the younger generations. The gatekeeper explains that there have been some efforts to encourage women to participate in making the communes yearly budgeting or an investment plan, for example. They have had women’s discussion groups to have the women participate more freely, and gather their opinions in an environment of trust. It is clearly an issue that is recognized by the women and the commune, that women cannot necessarily participate actively or express their thoughts in public meetings. After all, it remains unclear how the women’s views are included in this specific project, but there seems to be signs on the side of the commune that women’s participation is given special attention at least to some extent. However, based on these interviews the effectiveness cannot be evaluated.

All in all, experiences on village meetings on water issues and are mostly positive, but not in the sense that they would offer a way to influence the local matters. The interviews show that the water project is not seen as a means to affect in the project, let alone the women’s role or position in the commune. The communication is seen one-way, the project implementers or the WASHE committee providing information to the interviewees, rather than the women giving an input and contributing with their knowledge. In addition, the representative decision-making body, WASHE committee, is perceived merely technical and administrative body, and the decision-making power it holds is not given importance in the interviews.

4.2 Women and gender in the project documents

In the light of the previous notions by the interviewees, I will briefly present how women and gender are present in the project documents, and how the community members' participation is mentioned. Due to the limited scope of the research I will not go detailed into the project documents, though a discourse analysis, for instance, on the project documents would give a valuable addition to the study. To sum up the gender perspective in the project background documents, the direct indications on gender goals are few. Gender is mentioned as a cross-cutting issue in the project proposal, briefly stating women's labor burden being reduced due to the project: "*reduced labour burden on women in collecting water for household use.*". Additionally, women and children are named the main beneficiaries of the project, as they are responsible for collecting water and most susceptible to diseases from contaminated drinking water. This remark on women and children is followed by an addition: "*They will benefit from project infrastructure, education and they will benefit from the improved capacity of their commune council to plan for and manage community development projects in the community.*". These are the only direct references specifically to gender issues in the project proposal. The semi-annual progress report that was provided by the interviewed RWC employee, explains and assesses the progress the project has made by April 2012, and mentions the gender balance as a criterion for electing the WASHE committee. In the project completion report the only brief reference is a remark on the gender balance of the voting in the WASHE committee elections: "*two representatives with gender equality from each village were selected*". However, the RWC representative specified that 5 of the 14 representatives were female. In the three reports by RWC, the number of beneficiaries is also presented so that male and female beneficiaries are displayed separately, in addition to the amount in total. In the 4-page evaluation summary, the external evaluator states on gender and social equality as cross-cutting issue: "*Many of the, often poor, beneficiaries and the school are female.*". The number of direct beneficiaries, divided by sex, is estimated to be 300 males and 250 females. Altogether these are the direct remarks on gender sensitivity or women in the four project documents.

Looking at the project documents more broadly, the project beneficiaries are referred mainly as households, householders, beneficiaries, the community, community members or villagers. Actors mentioned more specifically are students, teachers, children, entrepreneurs, the poor and the women in the aforementioned parts. For example, in the project proposal, there are possible risks stated for the project, and one of the risks is "*Lack of ownership from community - reducing sustainability*", and the mitigation measure follows: "*Use local services, consult and acknowledge community knowledge and customs. Commune council involvement.*" Campaign meetings are mentioned as a

way of educating and providing knowledge to the community members, and so contributing to the fourth output (Increased knowledge of Water, Sanitation, Hygiene and renewable energy in the commune). Nevertheless, it seems the community council and WASHE committee are seen to represent the whole community, as their involvement and ownership is underlined. This however is problematic regarding the gender mainstreaming goals, as women are not widely represented in the WASHE committee, and the committee consist of the decision-making elite of the commune. Commune council's capacity building is one of the project's four outputs. Locals' participation is included in the fourth output (Increased knowledge of Water, Sanitation, Hygiene and renewable energy in commune), which instead of active participation accentuates the improved knowledge and education provided to the community members:

“Water supply and energy were the highest priorities raised by householders in the community and they responded enthusiastically to the challenges analysed in the assessment. New technology was agreed as one of solutions to respond to the need of householders in Srechea community in regards to the impacts of climate change.” (Completion report)

The project documents suggest that the local participation is mostly seen as information sharing. On the other hand, the RWC representative and the documents do give importance to the local's ownership and partnership with the commune council. As in the project proposal, “*consulting*” and “*acknowledging*” community knowledge does not imply to a dialogic project development, deriving from the needs of the locals. At the same time, the commune council appears to represent the core of community knowledge. The external evaluation states on ownership & beneficiaries' satisfaction: “*The community actors and interest groups have participated actively in the project. The established WASHE committee administers and operates the installed systems. The local ownership was throughout the project good.*”.

4.3 Changes in the ways of using water

To comprehend the changes and the role that the water supply system has established in the everyday lives of the women, it is useful to look at the dynamics of how different water sources are used together and for what purposes. There are different sources and uses of water in Sre Chea, and the introduction of the new water delivery system has revised the ways of using and accessing water in the connected households. Firstly, it should be noted that the system has not substituted entirely all water sources, but is used side by side with other sources of water. Nevertheless, having a piped water connection seems to have declined especially the use of pond water for many interviewees, as it requires most energy and time to acquire. The interviewees describe how they fetch water from the community ponds nowadays less frequently due to the new water source. Yet, they are still using

mixed water sources for different purposes, and depending on the season, combining two to five different sources of water to have enough water to get by. For example, this interviewee is using the water connection together with rainwater, but during droughts she has to start carrying water from the pond again:

“The reason why I wanted to connect is because I do not want to carry the water anymore. I use the water [from the system] for animals and washing, and rainwater I use for drinking. The water from the system is only for cooking the rice, and for making food I use rainwater. So only two main sources [of water]. [--] But during this [dry] season I also take the water from the pond for the animals.” (W11)

The water supply system is seen as a supplement to the existing water sources; community ponds, rainwater harvested with large jars and some hand dug wells. Price, availability, distance to the water access, and to some extent also quality, are named the main factors for determining the use of different water sources. The new water supply system is the only source for ground water, and the other sources are either surface water or rain water. Bottled water, which can be bought with home-delivery, is also usually taken from a pond. The interviewees usually refer to the pond located next to the community hall, as that is the closest pond for them. However, there are a couple of other ponds farther away in the community. Water from community ponds is free of charge and available to everyone with almost no limitations, which has made it probably the most used source of water in the village. However, the farther one lives from the pond the more time and effort using pond water requires, or alternatively money for gasoline that is needed for transportation, if motor vehicles are available.

The commune chief explains that there are no limits to the use of water from the system, though during the driest time of the year, residents are advised to use it only for drinking, taking shower, animal watering and washing clothes – not for planting, as some have done. As for the community pond, there has been some restrictions to pumping water directly from the pond to the nearby houses, but otherwise no limitations are mentioned. Having water available on premises, free of charge, women opine to be an asset also with rainwater. Yet especially in the driest time of the year, the amount available is very limited. In addition, some mention the inadequate number of jars for collecting rainwater being a restrictive factor for rainwater to provide enough water as the only source.

All in all, the interviews show that the ways of using water are still varied, though for most interviewees the water supply system has substituted the use of pond water to some extent. However, it must be pointed out that there has not been at all, or little changes for the women who do not have access to the system. One interviewee (W4) comments that she is occasionally using her daughter’s connection to do laundry or to take a shower. The other two interviewees without a connection have not experienced changes in their water use after the construction of the new system. Another

interviewee with a connection explains that she has invited some villagers to get water from her connection. Yet she sees this problematic because it increases her costs, as she does not charge anything for the use of water: *“I wish that the houses [without a connection] get a connection to the system, because if they don’t have water I ask them to come here and it is not easy and costs some money.”* (W2). Hence, some villagers without a connection have used occasionally other’s connections, though this does not seem to be the case very widely. In the case of using other households’ water connections, the effort of carrying water is yet not necessarily reduced, if the water is still carried to one’s house.

Nonetheless, the water system has had defects that have occurred since the introduction of the system. Provision of water for many who have access is unstable and varies considerably, mainly depending on the distance to the water tower. Half of the women mention being satisfied with the provision of water, but almost each have had experienced some kinds of problems during the time they have had the connection. During the dry season, which is when the fieldwork took place too, the water is said to be insufficient for all the 76 households that are connected to the system. The water flows with low pressure to the last households at the ends of the two pipelines, occasionally leaving them without water. Frustration and disappointment in the situation comes across especially clearly in one interview with a 58-year-old woman, who is the head of her family of six, living far from water sources. At the time of the interview, it has been almost two months since the system has stopped working at her house. She explains to have gathered the money needed for the connection fee with the help of her children, to ease their daily water acquisition. They used to have a community well near their house, but it has dried out. She explains that her physical condition is not adequate for constantly carrying water, and her financial situation makes it difficult to buy water to meet their needs. Neither does she have a scooter or other appliances to facilitate the transportation of water:

“[there is water] only for the people who live around the system and not for people like me, who live quite far, we cannot get water. People who live around the system get water in this season, they can get in the morning or late afternoon, but for me, not at all. I buy a lot of water, spend a lot of money. [--] The system would have helped me a lot, since I live far from water sources and cannot carry water by myself. However, now it’s been over a month the system has not been working. I am still spending a lot buying water along the road in canisters.” (W3)

This interviewee’s story depicts, how there has been certain expectations to the system. As the outcome does not meet the expectations, it causes grief and resentment when the money gathered with great effort is not providing the utility it was expected to, and again more money is needed to obtain water for the family. What makes it even more difficult to come to terms with the situation, is the fact that the system does not serve everyone with access similarly, and often the same households

that are left without water. All in all, the general acceptance and satisfaction seems to be positive among the interviewed women who have access to the system, and most have not faced such long-lasting difficulties with the system, as the cited interviewee. Everyone with access mention having had defects of some kind, but do not show such strong frustration. In addition to shortage of water, there has also been some defects in the system itself. The commune chief explains that the system's technology is German, which is why spare parts are both expensive and time-consuming to obtain. Once the system was out of order for one month, as a spare part had to be ordered. This also led to an increase in the price of the water tariff, which came as a surprise to many interviewees:

“Not enough water during this [season], for the others. There have been some defects in the pump, not in the system but from myself to the toilet, it broke. [--] My husband repaired it. It's difficult for me, especially to take care of the animals and I need to spend money to buy water. Before that it didn't work nearly for one month, but the commune chief, they called the meeting and told that the system isn't working and it needs to be repaired, maintenance, and we need to raise the fee from 800 to 1000 real to repair the system and for maintenance.”
(W6)

Most commonly the water supply system is used for washing clothes, showering, cooking and watering animals. Considering the name of the project, *Solar Powered Drinking Water in Kampot Province*, and preliminary information provided by the background documents, it is surprising to notice that contrary to the expectations, most the women and their families do not drink the groundwater at all, or do so only in the driest time of the year when the options are few. The most common options for drinking water are rainwater and pond water. Some women tell they are getting by with the water from the system and harvested rainwater, and thus go to the pond occasionally. However, the majority boils the drinking water before consuming it, regardless whether it is rainwater, surface water from the pond or ground water from the system.

The main reason for not drinking the water from the system is the unfamiliar taste that the water has. Some say that the water is not potable, which seems to be due to the unfamiliar taste. Some suspect there are chemicals in the water. However, the gatekeeper tells that the water has been tested and is potable and free of arsenic and other harmful substances. Additionally, in the project documents it is stated that the water quality test met the standards set by the Cambodian Ministry of Industry, Mine and Energy. The experiences in the field on the quality of water are yet not contented. The interviewees describe the taste to be salty, different and strange to the point that it is difficult to drink it, even if they thought it is safe to drink:

“The water is only for clothes, washing, some showering like before. For drinking I just take [water] from the pond and rainwater. It's really difficult to drink, I used to try it but cannot.”
(W5)

“The water from the system I use only for domestic use; washing and cooking, but cannot drink it because it has some calcium, and the taste is not right. [--] Water for drinking I take from the pond. [--] We drink directly, no filter, no cooking.” (W2)

Some mention that the change the system has brought is not as substantial as they have thought, for they cannot drink the water and still need to go to the community pond to get water. One interviewee even states that she would not have connected to the system, had she known that the water is not suitable for drinking. Many interviewees do mention that the odd taste came as a surprise, and they were hoping to use the groundwater for drinking. Only some with access to piped water who drink the water from the system, yet boil it and some use traditional Khmer herbs to give it a more pleasant taste. This treatment is often done to drinking water taken from other sources as well, though a couple of interviewees mention that their families do not treat water before drinking. Suspicion and prejudice against the ground water and the system come across in various interviews. There are examples mentioned in the interviews, how the quality of the water is perceived very different from the surface water they are used to drinking. One interviewee (W6) mentions, how it makes her hair tangled and messy when used for washing. Another one explains how washing clothes requires more washing powder than usually, when using ground water from the system:

“Talking about washing clothes, it’s quite normal, but the first use of the water from the system it’s quite difficult to wash [clothes], because you need much more shampoo to wash than with the usual water. But now I’m quite familiar with that, it’s not a big problem. When you wash your clothes, you need much more washing powder than with the normal water.” (W11)

Some explain how the water is preferably not used for cooking rice, firstly because it turns the rice blue after boiling, and secondly because rice boiled with groundwater does not preserve as long a time as when using other sources of water. One interviewee is even afraid of the system’s water, as she has noticed it to break bowls and containers if water is preserved in one place for a long time. This is also why she is afraid to drink it:

“I use it just for washing, taking a shower and cooking, but not for drinking. For cooking you cannot keep the rice for long, just one day, and it’s turning blue. And for a small cup, if you keep the water a bit long it will break your cup, cause some damage. [--] Just drink the water from the well [neighbor’s] an open one, and some from the rainwater. I feel afraid of the water because like you keep the water in a storage and it damages the water, and do not drink.” (W9)

Storing ground water seems to be common among the interviewees. A couple of them claim to do it to improve the quality and taste for drinking. One interviewee (W11) also claims that around one week of storing the water prevents rice from turning blue, when the water is used for cooking. Others say they want to assure the availability of water by storing it.

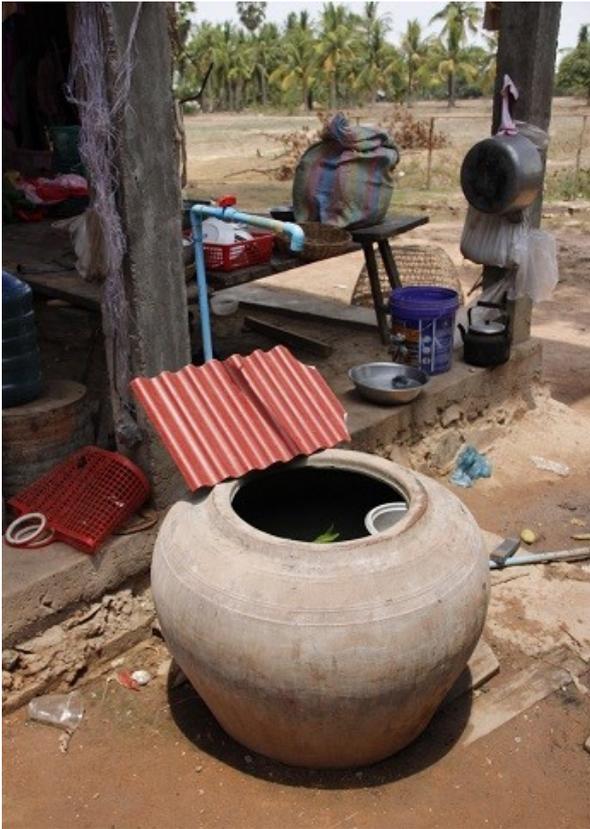


Figure 3 A connection end and a clay pot, that is commonly used for storing water.

Visiting the interviewees' households, there were some clay pots or barrels for storing water outside the houses. Some were using a cover of some sort on the pots, presumably for protection (see figure 3). It turned out that the commune is advising the locals to store the ground water for a time to be able to use it for cooking or drinking. The gatekeeper explains:

“Normal people don't have a [big pot] for storing water so they just use it [water] directly. Before they installed the system they [the commune] already tell that if you keep it or store it before using. [--] But because some families don't have the pots for storing, they use it directly and that's why cannot cook. But for drinking, it is related to the taste, not related to the quality. Before the system was installed the water was taken to a lab, it was tested already and the water is okay, that no arsenic or something like that.” (Gatekeeper)

Thus, the commune has instructed at least some villagers to treat the water prior to drinking, to improve the taste. This clearly contradicts with the information provided by RWC on their website, where stagnant water is claimed to be a great risk for spread of diseases or breeding of mosquitos' carrying dengue for example (RWC webpage 2014). The background documents emphasize the importance of safe drinking water, and do not mention that any treatment would be needed. Therefore, these new routines and ways of treating the ground water might potentially cause safety risks instead of reducing them.

4.4 Pursuing easier living with the water supply system

In this section of the analysis, I will elucidate the women's descriptions on the changes in their lives due to the water supply system. Reasons for getting access to the water supply system come down to making their lives *easier*, by omitting the burden of daily water fetching. What was highlighted in the interviews, is that clearly the most significant benefit from the water supply system is to have water available on the premises and directly on hand for different kinds of domestic use. The women tell to appreciate the convenience and how the system has the potential to make their everyday-life and routines easier and more effortless, which reflects to changes in:

- 1) Physical strain and risks
- 2) Time-use
- 3) Planning everyday life

Following the principles of deductive content analysis, these three categories originate from the gathered data. I will explain the categories in closer detail in this chapter. However, it must be considered that the changes are beneficial mainly when the system is working without problems, which has not always been the case. Correspondingly, I go through the flip side of the outcomes, bringing forward also experiences concerning occasions when the system is out of order, or when expectations are not met.

4.4.1 Physical strain and risks

Clearly one of the biggest assets the interviewees state of having from the access to the system, is the reduced burden of drudgery work and decreased risks related to water acquisition. The women perceive easier access to water a major concrete change in their lives, as they go to fetch water from the pond up to four times per day, most of them usually by foot. Having water flow directly to their homes through the gravity pipeline relieves their carrying work:

“Firstly, is that it’s much easier to take the water than before. I am quite old and I haven’t got much energy to take water, it was a lot of labor to take water but now it’s good for me.” (W2)

“I can take the water [from] inside now, no walking and carrying the water anymore. It’s just easy to take the water. Getting water is a big thing, more important thing than other things.” (W9)



Figure 4 Transportation of water with a “Cow John” tractor. A boy filling canisters with a motored pump.



Figure 5 A man and a boy getting water for a wedding celebration with a similar device as in figure 4.

Especially for elderly people, a 72-year-old woman (W9) tells, water fetching is a considerable exertion. The physical strain of getting water is burdensome especially for the elderly or people with illnesses or physical disabilities, but also particularly for single-parent heads of the family, who are in the main responsibility for acquiring water for the household. In the interviewed single-parent families the burden is shared with children, as one person might not be able to take care of the water acquisition by oneself, and the option of relying only on home-delivered water would get very costly. Interviewees whose households are not connected to the system are still using hours a day carrying water to their homes or buying it from water vendors, if their physical condition does not allow them to carry water. Though the women tell having great responsibility for water fetching, some women who have a husband, have their partner to help them with the water acquisition. In addition, children do a share of water carrying in some interviewees' families. Some women mention that it is men who usually use vehicles to transport great amounts of water at once, whereas women fetch water more often by foot, bike or scooter (figures 4-6). This was the case also when observing the community pond and the people coming to get water.

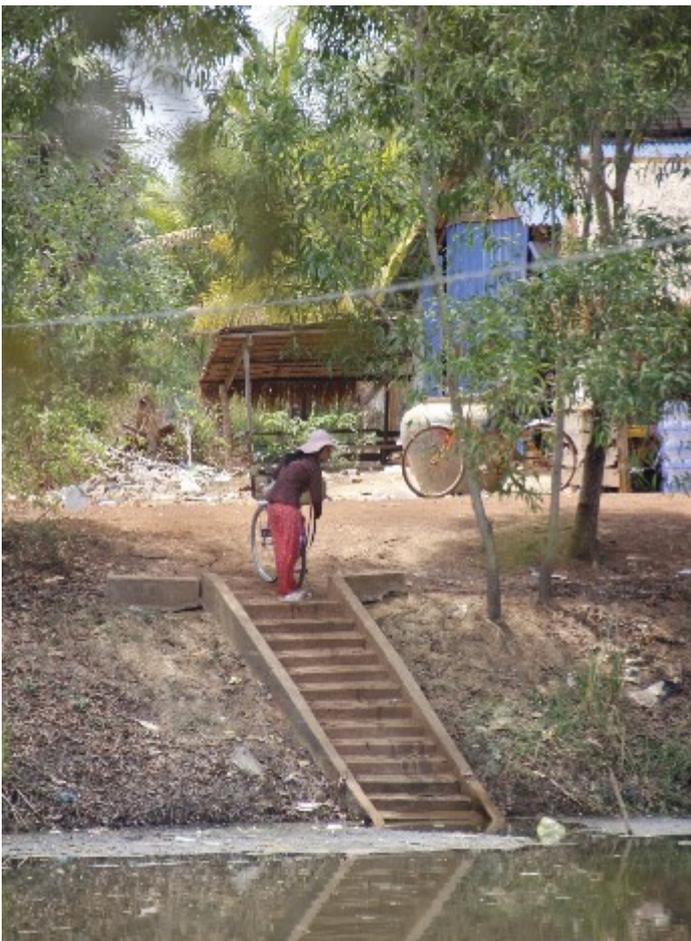


Figure 6 A woman fetching water with a canister on a bicycle.

Women alone do not have the full responsibility for water acquisition in all of the interviewees' families, but the interviews show how they often use more time and effort to get water than men. In addition, health condition can determine sharing the responsibility, as one interviewee's (W5) situation shows. She tells that her husband is in charge of the water acquisition as she is ill and has a poor physical condition. Then again, another interviewee (W8) mentions her husband having long-term illness and being unable to do heavy lifting. Therefore, household responsibilities are entirely left to her. As women are often in charge of domestic water acquisition and using more straining ways of obtaining water in the interviewees' families, piped water supply does seem to have raised expectations to ease

the physical strain of the daily chores. This, however, depends on what kind of activities replace the time that has previously been used in carrying water. The changes in time-use I will explain in more detail in the next section. Interestingly, only one interviewee describes the improved quality of the water having enhanced her family's health and says that they have had less diseases: *"It's good for hygiene, I can get water straight from the source. Before we got it from the open [pond], like that."* (W1). Otherwise the reduced health risks are associated with the straining activity of water carrying.

In addition to saving energy from carrying, there are some physical risks related to water fetching, especially for people with a poor physical condition. A 58-year-old woman (W1) tells that her children gathered the money to pay for the connection fee to protect their mother from injuries and accidents related to water fetching. They thought the steep, precarious steps are dangerous for her to pass with a heavy load (see figure 7). The same interviewee tells that she has been bitten by a snake while fetching water from the pond, and for that reason also feels now safer not being obliged to go to the pond so often. Though she is living in the very vicinity of the community pool, the children considered it important to provide an easier and a less risky way for her to get water:

"It is easy for me to get the water, rather than go to the pond and get water. I'm afraid that I will slide and fall down to the ground. [--] My children decided to build the restroom where I can shower. They decided to upgrade the toilet, the restroom, to avoid, as I am old, that I slide off the ground. Just to protect me, take care." (W1)

Additionally, the community chief mentions sexual harassment and assaults as another risk that women face in water acquisition, and one that is prevented or decreased with the help of the system. Apparently, there are villagers who do showering near the pond to save the effort of carrying the washing water to their homes. At least in the community pond, next to the community hall, there are no facilities



Figure 7 Staircase to the community pond next to the town hall

for washing in privacy. In addition, in the group discussion with village leaders (of whom all but one were men), water fetching was perceived unsafe for women. Thus, the group members agreed that the water project is beneficial especially to the commune's women, as taking water is less risky for accidents. This, however, was not an issue the women mention in the interviews. Perhaps this beneficial change stated by the commune chief either does not concern the interviewed women or if

it did, presumably, is too sensitive an issue to bring out in the interview. All the interviewed women describe how before having access to the system, they would carry water from the pond to their homes for washing themselves in privacy, but now mainly shower with piped water or take care of showering as before, carrying water to their homes. Therefore, in the case of most of the interviewed women, the location and therefore the safety of showering is seemingly as before having access to the system, though the household access relieves one hindrance from washing. Moreover, some tell to have built the water tap directly to their toilets (those who have one), which has brought great facilitation for showering (see figures 8 & 9).

However, the commune chief's comment indicates that in Sre Chea washing oneself in the proximity of the commune ponds may put girls and women at risk for sexual harassment, which is likely to concern especially women and girls living far from water sources, as the burden of water carrying increases the farther one lives. The project documents do not mention this issue or safe sanitation in general, though one of the four outputs of the project, is "*Increased knowledge of Water, Sanitation, Hygiene and renewable energy in commune*". All in all, I consider this an important remark to be studied more closely, which equally has correspondence with research literature, but which in this study cannot be contemplated in greater detail as the main data, the local women's interviews, do not discuss the issue.



Figure 8 Water connection end in a toilet



Figure 9 Showerhead in a toilet

4.4.2 Time-use

In addition to spending a lot of energy in water acquisition, the interviews show that fetching water has taken up a considerable amount of time in all of the interviewed women's daily lives. Therefore, another central change due to having water on premises, is having more time for other activities when

the need to go back and forth to the community pond to take water is less frequent. The women tell that using the time spared from water fetching chores now in household activities like taking care of animals, cultivating plants, making food for the family and child rearing. Some also mention socializing with relatives and neighbors and income generation activities. Especially in the dry season there is more time available for other activities, as rice cultivation and cropping is busiest after the rains. Visiting Sre Chea it seemed that leisure time is fairly limited for many villagers, as the interviewees seemed to be busy with household work, taking care of family and animals or organizing family festivities such as weddings or funerals:

“I can take the time to help my husband and take care of the animals or go to see my relatives. We can help each other when we are busy, like in wedding ceremonies or religious ceremonies. If you had come yesterday, you would have not seen me, because I was in my relatives’ house helping with some preparations, they have a ceremony in their house.” (W1)

Some perceive the extra time valuable because it can be used for making supplementary earnings, though not all interviewees have embarked on new productive activities. Changes in livelihood is not something directly mentioned as an effect by the water supply system, but some women tell to have started self-employment activities, such as selling cake or working occasionally in the field, harvesting corn or other crops, as they are not using so much time on water fetching anymore. Some interviewees mention selling cake at the local school, giving them around 3-5 USD earnings per day:

“I have less work than before, because I do not need to bring water from the pond, I have more free time. [--] I use the time to sell cake to the students in the school, some more income, around 3-5 dollars per day including the raw material.” (W1)

“[I use the time] to take up housework, clean up the house, take care of the animals. [--] making cake and sell it in the school. This month I may not be able to sell any cake because there are many events like weddings.

How does this effect?

We go to help the house that has the wedding, they ask me for helping and that’s why I’m busy and cannot do much other things. [--] Every day, during the schooldays. I get around 10 000 riels per day.” (W9)

On the other hand, being able to pursue more income outside the household is not possible for everyone, for example women who are tied to home with small children. This is especially challenging if the husband is working outside the commune and there are no other relatives to take care of young children. Many interviewees mention using the extra time for domestic work or helping their husband with their work. Hence, it is questionable whether the spare time actually relieves the burden of drudgery work, if the time used for water collection is replaced with other physical chores. In the group discussion, however, one interviewee tells that villagers have more time for sleeping in the morning, as there is no need to fetch water before starting the work day.

One of the four cross-cutting issues in the project proposal document is *“Improved living standards of community: through increased time for revenue producing activities due to improved health and reduced time spent collecting water”*. In the project proposal summary, there is an additional remark on increased time: *“Reduced time spent collecting water and time sick will mean increased time for revenue producing activities and increased attendance at school for children.”* Hence, in the project proposal improved health is connected to time-use and income generation. The interviews show that time for collecting water has freed time from water acquisition, and that some women have indeed been able to gain additional income. On the other hand, health per se is rarely mentioned in the interviews, and never in connection with income generation.

In addition, using piped ground water has potential in decreasing time spent in water related activities, if the drinking water is consumed without any treatments. As mentioned, usually the women tend to boil water prior to drinking, and this is commonly done to water from all sources. There are a couple of exceptions in the described practices, as one interviewee mentions drinking unboiled piped water with some herbs, and another one who does not see it necessary to treat the pond water before drinking. Wood is used as fuel for boiling water, which is the main energy source in the commune, as in rural Cambodia. Therefore, this form of the water treatment is also linked with health issues, as wood smoke is harmful to health and exposes women and their family members to constant particle pollution. As this phase of the water treatment is not omitted, the new water technology fails to save people’s time in this regard as planned, neither does it decrease health risks of particle pollution. It needs to be noted that also acquiring wood for burning requires either time or money. In the project background documents, however, there is no mention about the health or time issues in terms of water treatment and wood burning. All in all, little attention to health issues is paid in the interviews possibly because the minority of the interviewed women have changed the source for drinking water. Hence, contrary to project proposal expectations, there is little evidence on the quality of the water having affected perceptions of improved health. Nor are changes in health associated with the use of time, as the decreased water carrying burden is.

4.4.3 Planning everyday routines

Water is a central instrument for various everyday chores, and the interviews illustrate how it is key to have water at hand all times. The third category of the impact of having water on premises is having less stress on the planning of water use and not having to plan the use of water in advance. Various interviewees describe how having water from the system allows them to concentrate on other things and worry less about when and how to get water:

“We have more time to do some work outside, even the housework also, we don’t need to care about the water. We just come home from work and we have water to use, no need to worry. And we can make some money from the work outside.” (W2)

In the women’s group discussion, the women agreed that it is convenient for people who are working outside home, as they no longer have to wake up early in the morning to fetch water to have it available when they come back from work. The feeling of control and independence increases, as less planning ahead is needed. For instance, some are pleased with the possibility to provide water also for relatives who come to visit them: *“It’s good because it’s easy and it provides, sometimes when my children come to my house it’s easy to use the water.” (W1)*. One woman describes that previously she depended on neighbor’s dug well to acquire water for showering, but now can shower on her premises without much preparation:

“It’s easy to take a shower. [--] For taking a shower, before having the system I took the water from other neighbor’s house from the well, and then took the water to my house and took a shower.” (W9)

Some women describe that they nowadays have a more modern lifestyle, *“[--] like the lifestyle of the people who live in town or in the market.” (W10)*. The piped water on the premises represents development towards a more urban way of living, which requires less attention and preparation in terms of water management. However, the provision of water from the system is noticed to be unstable especially in the dry season, which is why many interviewees nevertheless store water in barrels in their yards in advance, to ensure that there is enough water for the upcoming days (figure 10).

Irregularity in the provision of the water, unstable sufficiency and changes in the price are factors that



Figure 10 Connection end on a home yard. Water stored in the barrel.

the interviewees feel that bring uncertainty to the water acquisition and upholds habits and routines related to water. This is also a major downside that is discussed in the group discussion among the four women. One woman tells, how the system has worked irregularly in many occasions, leading to

developing a routine for filling the water storage in the morning, because usually in the afternoons the water inflow would stop:

“It’s some kind of a problem in this season, not enough water. We need to store it in advance, to have water for use. [--] Just store in the toilet and another one in the storage and after one day I store again, fill again.” (W5)

Insufficiency of water also worries the interviewees, as during the ever longer dry seasons the provision of water becomes more unstable, and other water sources are needed to complement the ground water source. Lastly, the changes in the price of the water decrease the feeling of security and stability as well. This interviewee expresses her worry in the changing price:

“I wish that the price was stable, in the beginning it was 8000 riels and it has risen up to 10 000 riels. Now I just wish that 10 000 is stable because I’m quite old and cannot get much more income, it’s good for this price to stay.” (W9)

Some say that they are spending more money than before, but as this 49-year-old woman with a low income explains, the benefits and the stress-free feeling that using the system provides, is worth the expenses:

“I spend much more [money] than before. When I carried by myself and took the water from the pond I spent less than on the water from the system. [--] More expensive than the water from the pond, but makes me more easy and relaxed. [--] The connection is a bit expensive for me, and the fee for using the water is also quite high, but comparing to carrying the water by myself it’s quite easy and good for me.” (W11)

The perceptions on the value of the benefits vary. Many interviewees with access find the price of the connection and water tariff price reasonable, or even though considered high, worth the price considering the benefits gained. However, some opine that the price is high after the raise of the tariff, and the uncertainty of the price has caused stress and worry for some. In the group discussion, the women compare the price to a close-by commune where the price of a water connection was higher, and see the connection price in Sre Chea affordable. Especially the low-income families are most affected by the changes in the price. If a pump brakes, or the family has some other unexpected expenditures, such as medication, rises in the price of the water are perceived very difficult to handle in families with small income. Therefore, changes in the price increase the feelings of insecurity, especially if the increases are not communicated well in advance.

4.5 Proposals for improvement

In this last section of the analysis, I will raise concerns and suggestions for improvement that the women explicitly mention in the interviews. As partly presented previously, there are various factors

that they wish could be enhanced. Firstly, the quality of water, mostly in terms of the taste, is an issue that came as a surprise for many, and is a major restrictor for comprehensive and efficient use of water for all purposes, including drinking. Though the ground water has been tested to be potable, still the majority ends up choosing pond water for drinking purposes, even if they did not perceive the water harmful. The quality and taste was a disappointment for many, in that it decreases the potential to facilitate the everyday routines:

“My concern is, it’s good to make the water potable, when I need to spend some time getting the water from the other, for drinking. It would be good to improve the water for drinking.” (W5)

“It’s a big surprise, because when I got the connection, I thought that it will be for drinking and cooking, but after connecting, it [occurred that] cannot drink. It is clean water but I’m not quite familiar with the taste. One more thing for cooking it is changing the color. When the water is used for cooking, the rice changes color, turns blue. But maybe some people, some villagers are quite familiar, they can drink. [--] There is quite good information, but missing information like the water cannot be drank. I just wish the water can be drank even though we need to pay money, to take the water from the pond, it’s the same. We spend some money on the connection and on water also, so spend two ways.” (W6)

Despite the unfamiliar taste, many see the system useful, and there is a common wish that more people could enjoy its benefits. The interviewees repeatedly express concern about other villager’s water provision, and wish that everyone had the chance to connect and have a well-functioning connection, especially people living farther from community ponds or other water sources:

“Yes, some concerns, related to when the system does not work and I am afraid that the system will not work for some time. And worried for the people who are quite far do not get water, I feel pity. For the people who live far it is difficult to bring the water. [--] I wish that the people who are living quite far can get access to the system, even though I got the connection easily I would want that the others too. I would be very happy if the people who don’t have access to the system would get the same connection [--]” (W1)

Also, the ones without access express their strong wish to have access to the system to facilitate their water fetching:

“Yes, I would like to get the connection also, because it is easy, because when there is no water I come here [daughter’s house with a connection] but I am living quite far, if I had a dwell or some water storage... [--] because my house is quite far I would have to spend a lot of money, I have many children and no husband that’s why I need to work hard to support them.” (W4)

Some interviewees say that there is some jealousy on the side of the people without access, but many also opine that it has not caused any noticeable feelings of unfairness in the community. The three interviewees without access to the system assure that they settle for the situation and understand the reason why they cannot connect to the system, though all of them would be very eager to have a

connection. The feeling of inequity is expressed more by people who have a connection, rather than the ones who were not able to connect.

Reflecting the barriers for connecting, it is valuable to understand why some ended up without the connection, though they were willing to have one. The reasons for not connecting slightly differ for these three interviewees, though are related to unsuitable location of their household or too high costs of the connection. One interviewee (W4) tells that she did not have the possibility to get access, because the price of the connection would have risen too high in constructing the pipeline all the way to their home from the main pipeline: *“The price for the connection is quite high because I live quite far and need to spend a lot of pipe. Price for the water seem to be reasonable”* (W4). A more affordable price for connecting would be helpful in her opinion.

Another interviewee without access to the system (W8) thought the water connection to be too expensive for her family, because her husband started to have problems with his heart at the time when the system was planned, and they are having difficulties paying for his medication. They have their own hand-dug pond near the house, which they have been filling by pumping water from the nearby



Figure 11 A private hand-dug pond

community pond (figure 11). However, as the provision of water has weakened during the dry season, pumping water from the pond is restricted by the commune. In any case, the family sees it too risky to commit to paying for the system, as the priority is paying for the husband’s medication. She is still hopeful to have the connection if the income situation gets better: *“In the future I wish to connect. Now that my husband is sick we need to spend some money on medicine”* (W8).

The third woman without access (W7) explains that she was interested in getting a water connection, but did not have the possibility to connect because of the distant location of her home: *“The main reason why I didn’t get the connection to the water system is because the system just provides to this direction and that direction, so wrong direction.”* (W7). As the two pipelines run along two main roads from the community hall, and the interviewee lives in a different direction, this leaves her without the option to connect. The commune council has informed her that someday they will extend the pipeline to reach her house also, which is why she is still wishful of having access in the future.

This, however, differs from the commune chief's comment on the system having reached its maximum capacity, meaning that no more households can be added to ensure water for the present households.

As not all villagers could be connected to the system, the interviewees suggest that there could be more activities for improving and protecting other water sources. In a spontaneous group discussion, spurred for a moment in one interview, the women suggest that people without access to the system could be provided with clay pots for collecting rainwater, or the community ponds could be fenced to prevent animals from entering the water and contaminating it with faeces. In the women's group discussion, the participants suggest that the old ponds ought to be rehabilitated and more ponds dug to increase the points of access to water and increase the quality of the old ones. They also suggest getting filters to improve the ground water for drinking. Many interviewees were unanimous that other water sources could be improved in the community, to ease safe water acquisition for all.

On the other hand, the commune chief comments that feelings of injustice have not been an issue during the project, since there were water jars provided for families who could not connect to the system. Also, the project proposal envisions that extra funds gained from water tariffs would be used for community development projects, naming subsidies for household solar panels as an example. The commune chief tells that there has been help provided to the people outside the water supply system, though it remains unclear how extensive it has been:

“For people who do not connect to the system, there is not big jealousy related to this, because the Rainwater Cambodia try to help, compensate them with other things such provide big jars [for water storage], water filters” (Commune chief)

Reliability of the provision of water is another important issue the women raise in addition to the stability of the price and quality of water. The interviews show, how it is considered crucial for everyone to have a stable and secure provision of water. Additionally, they illustrate how water is comprehensively embedded in household routines and everyday living, and therefore is a commonly shared practice and issue in the village. The interviewees' experiences vary on the feeling of security; some are still worried of having enough of water after experiencing defects with the systems, and others are content with the facilitation the piped water has brought to their lives. Nonetheless, as everyone is familiar with the challenges water acquisition presents for everyday life, it is commonly wished that everyone had the possibility to get facilitation in the arduous routines.

5 DISCUSSION

In this section I examine and interpret the findings of the study in the light of theoretical framework, answering the previously presented research questions: *How have the women participated in the planning and implementation of the water supply system project?*, and *What changes has there been in the everyday lives of the women due to the water supply system?*

This study sheds light on the barriers that prevent women from participating in development projects and commune activities. It also illustrates the ways that access to water (or the lack of it) shapes the daily lives of women in rural Cambodia. Highlighted is also the burden that water chores pose to women, and how a water project is foremost seen as a practical labor-saving solution to ease daily chores. I do not aim to present a project evaluation, though I reflect the interviewees' experiences in relation to the project background documents and the gender mainstreaming goals. I will start with the first research question, presenting findings on participation, and then move onto the second research question, looking at different changes the interviews discuss due to the water supply system. I use the theoretical framework of practical and strategic gender needs by Moser (1993) as a tool to explore new angles on the gathered interview data and link it to the academic discussion presented here previously. These theoretical concepts provide one lens to examine the nature of the changes the women of Sre Chea have experienced. The next two chapters, 5.1 & 5.2 elucidate why the strategic needs are not efficiently met, and the third one, 5.3, takes practical gender needs into a closer look.

In the case of Sre Chea, the benefits of the project are emphasized mostly through practical gender needs both in the project documents and by the local women, whereas the strategic level is less present in the discussion. Moser (1993, 40) claims that though basic needs such as water, shelter and food are needed by the entire family, they are often regarded as gender needs of women. This is not done only by policy makers defining development objectives, but also by women themselves (*ibid.*). This study argues that the examined water intervention is one that aims to support women to meet their practical gender needs, helping them in their current activities within their position in the society (*cf.* Moser 1993, 94). As Moser argues, meeting strategic gender needs, on the other hand, requires transformation of the subordinate relationship between men and women (*ibid.*, 94), and there are little signs of this in the interviews. It is not to say that practical gender needs are insignificant – on the contrary, as Moser (1993, 39) points out, they can be crucial for human survival, if it comes to water provision in areas with severe droughts, for example. However, in the context of this project, the EEP Mekong grant program obligates the projects it funds to include gender and social equality as cross

cutting issues. In respect to Moser's theory, the equality goals indicate that in addition to addressing practical gender needs, answering also strategic gender needs is required.

5.1 New water management body strengthening local hierarchies

According to Moser (1993, 101), gendered consultation and participation is the most critical, albeit complex, gender planning procedure in a planning methodology that gives priority to debate and negotiation. Participation is given numerous different meanings in practice, but Moser (1993) claims that the importance of participation lies in whether it includes the transformative element of empowerment. Empowerment being central goal of strategic gender needs, the interviewees' experiences of participation shed light on the project in terms of addressing strategic gender needs. Nonetheless, the case of Sre Chea offers rather a case to reflect the barriers of participation, to understand how the obstacles could be overcome. To begin with, I will examine participation and views on the local level representative decision-making body, WASHE committee, and then move onto taking a closer look at the barriers for participation on individual level.

The WASHE committee is a representative water (and sanitation, hygiene & energy) management body, established to ensure the sustainability of the project and the commune's participation and role as key implementer in the project, as the completion report states. Interestingly, the role of this representative decision-making body on the project implementer's side is regarded as the main channel conveying the local voices (together with the commune council), yet it does not play the same role in the interviewees' viewpoint. The women see the WASHE committee foremost as a maintenance and management group for the water supply system. This case depicts, how a certain quota allocated for women remains useless if women do not apply for the representative committees. Along with Ahmed & Zwateveen (2012), I claim that quotas can serve as an important step towards better representation and visibility of women, but they alone do not lead to stronger participation, greater gender sensitivity or equity in water decision making, not to mention the ultimate goal of gender equality (also Cornwall 2003). Quotas may ensure women's representation in theory, but as this example shows, it is easily the people who already are in the decision-making positions that take up the places in community management bodies such as the WASHE committee, leaving less space for participation for newcomers (Kabeer 2005).

Therefore, as many critics state, gender mainstreaming should not be examined merely quantitatively, as something to be ticked off the check list just by having a certain share of women representatives in water management bodies (eg. De Waal 2006). Also Mukhopadhyay (2007) stresses that gender

equity goals cannot be achieved solely by increasing the number of female representatives in decision-making bodies. Neither should women in high social status be regarded to share common needs with all women, and therefore it is important to actively include people from many statuses and backgrounds in planning processes (Kabeer 2005). Also Zwarteveen and Ahmed (2012, 72) remark that although the initial idea of establishing a new representative management body is usually to open up the decision making to the public, paradoxically the access to decision-making structures seems to be centered around the ones already with decision-making power (also Mayoux 1995; Kabeer 2005). Since in Sre Chea the WASHE committee consist mostly of village chiefs and commune council members, it is controversial whether this studied water project has reinforced existing social hierarchies rather than advanced participation for the marginalized and conveyed voices of people in different positions. Therefore, representative committees should not be the only way to foster local participation. Joy, Kulkarni, Roth, & Zwarteveen (2014) call for re-politicization of water governance and the problematics of distribution of power and allocation of and access to water. This examination supports their argument that water projects affect commune-scale hierarchies and can cause further marginalization for some locals (ibid.). Therefore, distribution of power and benefits inevitably make water interventions a question of justice, as Joy et al. (2014) pinpoint.

The case of Sre Chea shows a glimpse of how a new water technology can bring changes both on individual level and alteration to social structures and sensations of equality in a community. In a society facing water scarcity, an improvement in water provision is wished to benefit people broadly. The interviewees in Sre Chea considered it very important enhancing water facilities throughout the whole village and providing easier access to water for everyone. This reminds that water provision has implications in the social sphere and affects people's feeling of justice and equity. Therefore, it is important to look at the effects a development intervention has on the community as a whole. Along with Cornwall (2003), this study calls participatory development projects for critical scrutiny on dynamics of gendered power and exclusion. From project implementer's side, it requires consideration on how the benefits and disadvantages are distributed among the entire community, and acknowledging the changes that a project might have on the local hierarchies. The critical questions are: who participates and who benefits? (Cf. Cornwall 2003.)

For example, in Sre Chea the households that are connected to the system are located near the town hall and community pond, and houses farther away do not have the possibility to connect, and are still struggling with getting their daily water. On the commune level, this sets families in an unequal position, which is reflected in the interviews, making it relevant to contemplate what kind of impacts the water project has had on the equality and power relations within the community. The decision-

making process leading to the location of the water system is not questioned nor discussed in the interview data, yet it is evident how the distribution of benefits of a water infrastructure is closely intertwined to spatial dimensions. The spatial dimensions of environmental justice are especially relevant for water, primarily because the ways water is harvested, used, stored and managed, are inevitably shaped by spatial limitations (Joy et al. 2014). This case shows how for water infrastructure, the location of one's household together with the price of the water connection can be a restrictive factor in connecting to the pipeline, and defining who get to gain access and benefit from the system. It also defines how much time and effort is used daily for water related activities, especially if there is no access to technology that would ease water fetching. Joy et al. (2014) claim that in terms of water access, spaces and places play an important role in strengthening or equalizing local hierarchies. The complex "geography of burdens and benefits" (Schroeder, Martin, Wilson, & Sen 2008) is an issue that cannot be extensively discussed within the scope of this study, but the findings portray it as one feature of decision-making power that shapes the distribution of burdens and benefits. Drawing attention to the connection between power and different forms of knowledges in planning processes, Joy et al. (2014) demand questioning the water redistributions that tend to be framed merely as naturally and technologically rational and apolitical. In water projects, siting is one example of factors that defines the distribution of benefits. Therefore, the social impacts and local experiences should not be overlooked in the decision-making.

5.2 Barriers of participation on individual level

To compile understanding on successful participation, it is important to discuss barriers for participation: why were the women in Sre Chea reluctant to apply for decision-making positions in the first place, though they shared a strong interest in the commune's issues and the water project's decision making? First, this study displays the challenges that the triple commitment in production, reproduction and community management poses for women to participate (cf. Moser 1993; Regmi & Fawcett 1999, 65). Child rearing (reproductive responsibilities) continues being a crucial factor preventing women leave their houses, as well as other tasks related to household work. Ironically, water fetching (among other tasks), as a community management commitment, prevents women expanding their community management role into decision-making on water. Moser (1993, 54) suggests that in rural communities the timing of the meetings affects women's attendance, which shows in the case of Sre Chea as well.

However, this study presents that there are even more persistent and principal reason constraining women from participating, in addition to practical factors like lack of time or energy. More

importantly, women's participation cannot be strengthened just by adjusting the triple commitment to suit the project activities, but by means of participation to question the triple commitment to begin with - and not take it as a 'natural' given. This case depicts, how first and foremost it requires profound changes in the thinking and practices, to have women (especially the poorest ones) to participate and to apply for decision-making bodies. The decision-making in project design and implementation in the WASHE committee was clearly not perceived something that goes under the women's community management domain, but rather that of men (cf. Moser 1993). There were strong signs of interest in being part of commune's development processes, but the women did not see themselves competent enough to be active and transformative agents in the development. Lack of education or knowledge and health issues were stated as reasons that women in Sre Chea mention for not participating or expressing their views in meetings. Whether they are actual reasons or expressions of more deep-rooted perceptions of gender roles, it is difficult to say. Literacy raising and education are surely a far-reaching starting point in enhancing local equities to increase women's self-esteem and perceived capacity to take part actively. Nevertheless, when carrying out a development project, it is more valuable to consider how the lack of education will not prevent anyone from participating. What is more, this study shows how women did not recognize the value of their knowledge and participation in the planning of the water project. To help this issue, Regmi & Fawcett (1999) suggest that preparing women to take new roles is one part of a development process to motivate and build up women's self-esteem. Connelly et al. (2000, 142) stress the importance of consciousness raising, to enable women to become active agents and making them aware of the potential for change and of their strategic needs. Women's groups could indeed work as safe spaces for women to share experiences or elaborate their views, but it requires making sure that these inputs are also included in the decision making, and not left as separate participation just for the sake of nominal engagement.

In addition, this study argues that the in-household relations play a crucial role not only in terms of labor-sharing but also for balancing the opportunities for participation. The triple commitment can restrict both participation and deciding on the use of the time freed from water collection. As Regmi & Fawcett (1999, 66) emphasize, for a project to efficiently meet both practical and strategic needs and achieve sustainable social development, the key is to create an environment where men are willing to share the work that is traditionally regarded that of women. On the other hand, as Cornwall (2003, 1330) reminds, women's agency to make choices based on their own values should be respected, even if they repeated their "traditional" roles. Nevertheless, if women's varied views, preferences and perceptions are left muted, it means that their (practical and strategic) gender needs are defined by someone else; project planners, commune's decision-makers, their spouses, etc. This

also connects to the question on households being often examined as units or the so-called heads of the households are regarded to represent all family members. Lahiri-Dutt (2012, 492) criticizes treating households as homogenous entities, as this lack of sensitivity can lead to project failures and result in impacting negatively on women's lives. Therefore, discerning different voices within one household is essential to avoid reinforcing exclusion.

Molyneux (1985, 233) names establishment of political equity as one possible strategic gender need. The interest in participation and community policies signals the women identifying political equity as a strategic gender need. As this example shows, if decision-making positions are not genuinely open for everyone, it impedes women achieving strategic goals of emancipation and empowerment. This study supports Moser's (1993, 27) remarks on the importance of self-esteem to achieve fundamental changes in women's emancipation. Participating in the development project in general is not necessarily seen as a means to have an impact and achieve a stronger status in communal decision-making, like gender mainstreaming goals suggest. Foremost this study shows that the objectives of participation should be shaped together with the locals and communicated clearly, accentuating the value of everyone's input regardless of social status or position. In this case, it seems that in the planning phase women's gender needs are taken for women's needs, assuming similarity of interests based on biology (cf. Moser 1989, 1803), similarly taking the women's water burden as a natural given – both by the project documents and the women themselves. Improvements in water access are often expected to automatically result in women's empowerment, without attention to their values and the local context (Cleaver 1999; Joshi & Fawcett 2001; Singh 2006). In order to achieve successful projects with long-standing and equalizing results, the community's views must be vastly included in the planning. To help the locals meet their strategic gender needs, the varied needs ought to be recognized and identified bottom-up, by the women and marginalized themselves. Otherwise the development will end up defining the "women's needs" (c. Moser 1993) top-down, thus watering down the feminist (as defined by Moser 1993) endeavors to relieve the subordinate structures and contribute to greater equality.

5.3 Practical gender needs through easier everyday-life

This study shows how the new water technology is foremost expected to lessen the burden of water related tasks and it is mainly seen as a response to *an immediate perceived necessity* (cf. Moser 1993, 40), that is, practical gender needs. The project documents state the project to bring ease to the labor burden of women and children, likely assuming that they are the ones that take up most of the water fetching. References to e.g. altering the status of women or empowerment goals are not mentioned.

This suggests the project intends to meet women's practical gender needs in their current position, as questioning the prevailing gender roles or does not come across in the project documents (cf. Moser 1993, 40). One can question, whether this presumption on the side of the project implementers unconsciously reinforces the prevailing gendered practices, effecting the outcomes of the project. Moser (1989, 1800) argues that the sexual division of labor is often seen as a reflection of the 'natural' order, which impedes recognizing women's subordinate position. First and foremost, the interviewed women themselves describe the benefits and effects of the water supply system with respect to practical gender needs: the water supply systems represent access to easier everyday-life practices for the interviewees. There are few signs of recognizing the project to work as impetus for reasserting their strategic gender needs, leaving the discussion firmly on alleviating the current chores. The three main changes they state of having access to piped water, is firstly alleviation of physical strain and risks of water fetching, secondly using less time for water carrying, and thirdly the relief of the mental burden of planning water and everyday routines. The experiences however show, how these changes, that rather reflect expectations, are not fully met in practice.

Moser (1993) claims that the alleviation of women's domestic labor and child care is critical to addressing strategic gender needs. However, it is not straightforward that the relief of water carrying results in alleviation of women's burden in domestic labor and addressing practical gender needs, let alone strategic gender needs. Based on the findings of this study, I claim along with Ivens (2008) that improved water access should not be assumed to automatically reduce the overall physical burden, because other physical chores are often taken up replacing water carrying. Previous studies show, how there is no certain pattern how the freed time is used, neither is it guaranteed that women can use the time in activities they prefer themselves (Ivens 2008).

Many development projects promote women's empowerment, assuming that women's time savings automatically convert to income generation, equating economic activity with empowerment (Cleaver 1999; Joshi & Fawcett 2001; Singh 2006). As for income generation, it can be argued whether it supports women's practical or strategic need, as this may vary from case to case. Self-employment and economic activities are easily regarded as a mean for women to gain stronger status in the community, supporting their strategic needs. Moser (1993, 69) however stresses that if employment and increase in incomes does not lead to greater autonomy, strategic gender needs are not met. Regmi & Fawcett (1999) say that earning supplementary income may be a way of earning respect from the husband and gain a stronger status within the household. On one hand, having women digging trenches for the pipeline could be regarded as using women as cheap labor (Moser 1993, 168). On the other hand, it can be seen as challenging the division of labor and providing them with an income

earning opportunity within the project. A closer examination into women's experiences in the income generation would be needed, to explicitly analyze whether or not the capacity to earn income has supported their strategic gender needs. This study however reminds, that income generation outside the household is not an option for many who are tied to their daily household responsibilities at home. Nonetheless, this study portrays how practical needs are not efficiently met, when there is uncertainty and distress related the new water access. For a water technology to efficiently address practical needs, the findings emphasize the importance of stability and reliability not only related to the provision of the water, but also the price of the tariff. Acquiring water in rural areas such as Sre Chea requires planning, and there are routines and strategies developed around water haulage. This study shows, how having running water at hand has potential in freeing women from these routines of water acquisition, but at the same time relying on a new water source sets them in a vulnerable position. To have the full benefit, the water provision must be reliable or otherwise new routines might be developed as a back-up. After establishing a new everyday rhythm and relying largely on a new water source, going back to using old means of acquiring water can be especially frustrating and stressful. On the other hand, the predictability and reliability of the price is also a significant factor in terms of assessing practical needs. When paying for a connection fee with one's limited resources, the expectations for having value to one's money are high. Additionally, it must be taken into consideration that paying for a new water access often requires giving up something else. Rises in the price of the water or other extra costs may be especially difficult to handle, or potentially even impede using the new technology. Efficient communication through the project can prevent locals from building up unrealistic expectations for the water supply system. This is fair for the locals to know what they sign up for, when they decide to invest in a water connection for example.

What must be underlined in the case of Sre Chea, is that the changes the introduction of the system has brought contradicts with not only the expectations posed by the project planners, but also those of the interviewed women. In addition to the changes, examining what has *not* changed is similarly meaningful, when comparing to the presumptions made both by the women and the project documents and research literature on comparable projects. Contrary to what was initially planned and stated in the project documents, the water from the system is mostly used for other purposes than drinking, while it is tested to be cleaner and healthier than other sources available. This is interesting, as the people using the water perceive the quality to be poorer than before. This shows, how there is a risk of general doubt and distrust to be formed towards the quality of a new water source, when physical qualities of a new source of water differ from the usual sources. The experiences of the

appropriateness of the water are critical, since the perceived quality may affect the ways of adoption of a new water source (cf. Singh 2012).

Previous field studies indicate also that usually not all the old water sources are abandoned when adopting a new one - especially when it comes to the most important uses of water: drinking and cooking (Singh 2012, 421). Following the examinations by Singh (2012, 421), color, smell and taste are generally named factors that can define selection of appropriate water source and may even lead to refusing to use a new water source. This study supports the findings by Singh (2012, 422), showing that when comparing to old water sources, the changes in the taste, odor or appearance lay grounds for rejection of a new water technology. This case indicates that even knowing the water being unharmed, is not necessarily enough to use it for drinking. As in Singh's (2006) examination, this water project has shown how a new water source can be adopted as an "add-on" solution to the existing water sources, not fulfilling the criteria the traditional water sources have. Reflecting to practical and strategic gender needs, this implies that the project has failed to efficiently fulfil the practical gender need it was initially designed to solve, as women are still carrying water and not getting the full potential they expected. It would be interesting to dig deeper into this problematic, and study more closely how the distrust is formed. Another question for future research would be to study how the prejudice towards the technology and qualities of ground water could perhaps be overcome by means of local's closer integration in the process. As the taste and quality of the water came as a surprise for many after they had chosen to connect to the system, this is a situation that could be avoided by improving the interaction and communication during the project. In project planning, these kinds of risks should be identified, and if not overcome, at least lead to reconsidering the project goals in cooperation with the locals.

All in all, this study portrays how the water technology has established different kind of roles in the lives of the interviewees, and how there are varied ways of using different water sources together with a new water source. Also (Singh 2006) stresses, how women cannot be expected to spontaneously adopt a technology uniformly. These findings show, how in planning terms, it is essential to understand that there is no defined pattern a piped water connection or some other technology embeds to local (women's) lives (cf. Joshi & Zwartveen 2012; Regmi & Fawcett 1999, Singh 2006). This brings us back to the importance of participation, and why all stakeholders, as widely as possible, should be included in the very first phases of planning a development intervention, not only to prepare for unexpected outcomes but also to ensure that the needs of the locals are efficiently met. Therefore, this study claims that addressing strategic gender needs are not important

only to reach the equality goals, but also in terms of answering practical needs in the best possible manner, as also Regmi & Fawcett (1999) point out.

The lived experiences displayed in this study illuminate the varied ways how a development project or a technology can impact peoples' lives. As Van Houweling (2015) stresses, the changes should be understood from the local perspective and cannot be generalized into universal gender mainstreaming guidelines. Water technology, as any other new technology, takes its form and integrates in the lives and social realities of the people. It is not a black box that can be installed to embed consistently in every context and community. As there are no universal solutions to culturally sensitive and sustainable projects, local solutions require comprehension on the changes the projects bring to the local lives and practices. (Ahmed & Zwartveen 2012; Singh 2006; Van Houweling 2015.) Along with Zwartveen (2012, 373) this study calls for a closer scrutiny of the "black box" of technology, to examine how the designs interact with social environments, to develop solutions that support equitable outcomes.

6 CONCLUSION

As this study shows, gender mainstreaming is a contested concept and a complicated policy target to be translated into planning practices. Gender is a deeply contextual social construct that is defined in a specific time and place, and intersects with various dimensions of social structures and power relations. Similarly, this study has revealed the problematics of carrying out research with a focus on women and constantly communicating and acknowledging that the social category is not homogenous. Advocacy on women's rights in research and development projects on one hand make the social structures and imbalances visible, but on the other hand employ and reconstruct the dualistic juxtaposition that they strive to dismantle. Therefore, the complex concept of gender is valuable covering different social layers, even though it is easily misused and oversimplified.

The first step towards contributing to gender mainstreaming goals in development interventions is understanding that women's (or men's) needs and thoughts are not necessarily shared, and defining the needs should be done by the locals themselves. Therefore, it requires a close-up look in the local realities as well as creation of spaces where marginalized groups can articulate their experiences and concerns. Conveying local's varied needs into sustainable outcomes requires tremendous sensitivity from the planning practitioners, and obligates also to sensitization to one's own conceptions and presumptions. In water projects, it is essential to understand the social nature of the micro-scale systemic change, and realizing that the technical and social dimensions of water are connected. Therefore, the planning practitioners should recognize the need for interdisciplinary understanding to capture diverse cultural, social, technical, environmental aspects of the change and the connections among the different aspects. This applies to both planners' expertise and more importantly: giving weight to the fundamental role of local knowledge in planning processes.

Behind these well-meaning buzzwords like gender mainstreaming lies the danger for misinterpretation and paying lip service to the gender equality goals by reducing the strategy into a technical exercise in practice. Knowing that there is no magical one-size fits all solution to a gender aware water project, meaningful participation is the key required for engaging the less privileged groups in the planning and implementation. Women and men as categories are needed to make the unequal structures visible, as well as the conceptions that are attached to biological sex in different cultures and contexts. Understanding of these social constructions as well as the culture-specific expectations they bear, supports facilitation of more inclusive participation in development projects. Therefore, the framework of gender brings a more comprehensive view on planning processes, covering the multifaceted factors that shape people's positions socially.

It is a dangerous misconception that women's status could be improved just among women. Gender mainstreaming and constructing a bottom-up planning perspective cannot succeed without the presence of women, but similarly men should be encouraged to be part of the workforce of mainstreaming gender. Gendered division of labor and the relations within households inevitably influence people's activity in the project, and eventually the outcomes of the projects. If participation and political influencing is not seen as a part of women's responsibility whereas the household work is tightly in their domain, it is challenging to have them included in the processes. Awareness to the social roles and unequal gender relations is needed, to achieve meaningful participation.

After all, it goes without saying that thoroughly completed pre-analysis and well-planned participation to compile in-depth understanding on the local dynamics requires resources; funding, time and expertise. Understanding the social realities in the communities is essential, but seems to be challenging in the current era of the growing demand for economic efficiency. A key question remains: how to combine a thorough analysis and diverse participation, but carry out implementations cost-efficiently? How can it be done while maintaining the project's and evaluations' focus not only on numbers, but also on qualitative impacts on social structures and gender relations? Even more critically, commitment to equitable and just solutions is needed. Policy makers, funders, project personnel and evaluators have the responsibility in different phases of the projects to ensure that the gender mainstreaming strategy actually serves for gender equality. This requires the planning practitioners critical reflection: what does gender mainstreaming actually mean in this case, and on what are the presumptions behind it? Who has the power to define the local concerns?

This study highlights the importance of broad grassroots participation and including different kinds of knowledge in planning processes. This is valuable when making sure the impacts of a water intervention are not present only while the system works. Band-aid solutions may come to use for easing local's burden temporarily, but do not provide long-lasting benefits or support for the essence of equality goals. Therefore, merely relieving the water carrying work cannot be expected to lead to women's emancipation. Women and men of all social status should be included in development interventions since the very beginning, also in contributing to shaping the ways and times of participation. It is important to strengthen the local's role as active agents in the core of forming the need, processes and objectives. Otherwise both the practical objectives as well as the strategic goals of gender mainstreaming are yet to be efficiently reached, leaving the outcomes fragile.

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APPENDICES

Appendix 1: Semi-structured interviews: women with access to the water supply system

Background information

- Name
- Age
- Number of years of education
- How many family members do you have in your household? Children/adults?
- Are you the head of the family?
(Estimation on income status with the help of the gatekeeper)

Access to the water supply system

1. Could you tell how your family decided to join the water supply system? Was there a need to sell some of your assets or take loan for paying for the connection? How do you find the prices: pipeline connection fee and water tariff? (Reasonable - too high)
2. In your opinion, how has the water supply system been working?
3. What is your opinion, who do you see that are benefitting the most from the water supply system? Are there some groups or individuals in the community that are not benefitting from the water supply system?
4. How have the possible defects in water distribution or other flaws affected your everyday life? If there have been problems in the functioning of the water supply system, how promptly has the problem been resolved? Could you give an example?

Participation in the project

Information

5. When was the first time you heard about the water supply system project? In general, how have you received information on the progress of the process?
6. Have you been satisfied with the information that you have been provided?

Knowledge

7. How has it been learning to use the water supply system? (easy - difficult?)
8. Have you gained new knowledge due to the project? E.g. climate change or hygiene/sanitation. If yes, how do you find the information? Helpful, interesting, important?
9. What is your opinion on the fact that the water system is powered by a solar pump, or does it have any significance to you?

Representative committee

10. How do you see the WASHE committee's role in the planning of the project?
11. What do you think about the work of the WASHE committee? (Satisfied - not satisfied?) Who do you see that the WASHE committee is representing? Do their decisions respond your expectations and needs?
12. Did you vote in the election of the WASHE committee? If not, why? Did you consider applying for the committee?

Taking part & Making a difference

13. Did you or someone in your family participate in the village campaign meetings, technical workshop, construction of the pipeline or other trainings concerning the construction or the project? In which meetings/workshops? Why not? Would you have been interested to? (no interests / no time?)

14. How would you describe your possibilities in influencing the project?
15. Have you had some concerns during the project? What kind of concerns? Could you describe how openly you have been able to express your concerns?
16. Have you participated in some other political or developing activity of the community?

Changes

Compare the time before you had the **water connection** to the situation you have now:

17. What do you consider that are 5 most important changes of the project in your life? Why?
18. Do you have more or less work than you did before? Why?
19. Are you using more or less money than you did before? Why?
20. Are you now using more or less time with household work? (Household work include wood collection, cooking, taking care of the animals etc.) Why? If less time is used for water collection, how do you spend the remaining time? Have you started out new activities or spend more time on some old ones?
 - New income generation activities?
 - Cultivation of plants?
 - Socializing with other villagers/women?
 - Helping the family/spouse in their daily responsibilities?
 - New daily routines or labor?
21. Do you see changes in your own or your family members' **health** comparing before and after getting access to the water supply system?
22. Has there been some inconvenient or negative changes in your life?
23. Considering the project or in general, do you see changes in the role of the women in the village over the past years?
24. In general, how has the electricity in the communal buildings changed your life? Has it changed anything in the village in general?

Appendix 2: Semi-structured interviews: women without access to the water supply system

Background information

- Name
- Age
- Number of years of education
- How many family members do you have in your household? Children/adults?
- Are you the head of the family?
- (Estimation on income status with the help of the village head)

Access

1. What were the reasons for not joining the water supply system? Would you have been interested to?
2. Have you used the water connection of some other household that is connected? How has this worked? (How often/costs?)
3. How do you find the prices of the pipeline connection fee and the water tariff? (Reasonable - too high)
4. Have you considered joining the water supply system in the future?
5. In your opinion, are there groups in the village that have been unsatisfied with the water supply project? Are there some groups in the village that have especially benefitted from water supply system?

Participation in the project

6. Have you been interested in the advancement of the water supply project? If yes, have you been satisfied with the information that you have been provided?
7. What is your opinion on the fact that the water system is powered by a solar pump?
8. How do you see the WASHE committee's role in the planning of the project? Who do you see that the WASHE committee is representing?
9. Did you vote in the election of the WASHE committee? If not, why? Did you consider applying for the committee?
10. Did you or someone in your family participate the village campaign meetings, technical workshop, construction of the pipeline or other trainings concerning the technology and the project? In which meetings/workshops? Why not? (no interests / no time?)
11. Have you gained new knowledge due to the project? E.g. climate change or hygiene/sanitation. If yes, how do you find the information? Helpful, interesting, important?
12. Have you had some concerns during the project? What kind of concerns? Could you describe how openly you have been able to express your concerns?

Changes

13. Compare the time before the project, (before there was water supply system and electricity in the community buildings) to the situation you have now:
14. In general, has the water supply system changed your life somehow? How? Has it changed anything in the village in general?
15. How do you feel about not having a water connection?
16. Has the electricity in the communal buildings changed your life somehow? How? Has it changed anything in the village in general?
17. Considering the project or in general, do you see changes in the role of the women in the village over the past years?

Appendix 3: List of the interviewed women

N	Interviewee	Village	Household's Annual Income (USD)	Household's Level of Income	Connection to the water supply system
1	Woman, 58 years	Prey Pi	250-300	Medium	Yes
2	Woman, 63 years	Prey Pi	250-500	Medium	Yes
3	Woman, 58 years	Prey Pi	200-250	Medium	Yes
4	Woman, 51 years	Prey Pi	350	Medium	No
5	Woman, 31 years	Prey Pi	500	Medium	Yes
6	Woman, 30 years	Prey Pi	500	Medium	Yes
7	Woman, 54 years	Prey Pi	200	Medium	No
8	Woman, 45 years	Prey Pi	750-950	Higher-Medium	No
9	Woman, 72 years	Sophy	30-50	Low	Yes
10	Woman about 30	Prey Pi	250-300	Medium	Yes
11	Woman, 49 years	Prey Pi	250-330	Low	Yes
12	Woman, 37 years	Prey Pi	250	Medium	Yes
13	Woman, 27 years	Prey Pi	2000	Higher-Medium	Yes