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By Thai Van Nguyen & Oc Van Vo

An Giang University

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The Need for Gender Analysis in Water Supply and Management in the Vietnamese Mekong Delta

Thai Van Nguyen [α] & Oc Van Vo [σ]

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I. Introduction

In almost all countries during the last decades, there has become an issue of growing concern about the link between human beings and natural resource management – soil, water, air, flora and fauna. To achieve the aim of economic development, it is necessary to properly assess women's role in agricultural production and natural resource management and to create conditions for women to fulfil their roles. Recognizing the importance of gender issues in the developing process of the country, the Vietnamese government has worked out policies on combining socio-economic development environment and natural resources conservation, in which a gender aspect is included. In addition, considerable efforts have been made to identify the role of gender in the field, as well as to empower women and their voices, particularly in the arena of water management policies. In developing countries, women are the main users of water – for cooking, washing, sanitation and family hygiene (Aureli & Brelet 2004). Women could play a key role in water management as major stakeholders in the process of policymaking, planning and implementation, but are often excluded and regarded as merely the recipients (Singh 2004). Women are domestic water managers at the household and community levels, and hence women have the potential to become active stakeholders in processes of management and decision-making within the water sector.

Furthermore, the global policy concepts relating to rural water supply and sanitation have influenced the water policies of most developing countries, including Vietnam (Reis 2012). The Vietnamese National Rural Clean Water Supply and Sanitation Strategy addresses gender issues, particularly noting that women need to be included in water-related activities because they play a major role in the collection and use of domestic water for maintaining the hygiene and health of the family (MARD & MOC 2000). However, significant questions have been raised about how national commitments to ensuring gender equity in water-related activities influence policy implementation at local levels. For this reason, this research aimed to determine the nature and the effectiveness of the policies in terms of their impacts on Vietnamese women. A clear understanding of the policy framework is essential to determine how national policies regarding the water services sector are being implemented by local governments, and ultimately how these policies affect women's participation in water management.

Studies have indicated that social and cultural factors, including gender inequalities and lack of decision-making power, inhibit the participation of women in water resources management (Ademun 2009; Svahn 2011). Several researchers have examined key factors that act as barriers to women's participation within the water sector; however, previous researchers have not addressed the significant role played by cultural beliefs – and social structures and practices of local communities in the policy, which in turn influences both the process and the outcomes.

Drawing on qualitative information from the literature, focus group discussions, and interviews, the article aims to assess the effectiveness of existing policies regarding women and water in Vietnam, the case of women's participation in the implementation of domestic water supply programs in the Vinh Phuoc community of An Giang province of the Mekong Delta.

Author α σ: Research Center for Rural Development, An Giang University, Vietnam. e-mail: nvthai@agu.edu.vn

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Furthermore, the research examines the influence of socio-cultural factors related to gender equality on women's involvement in water management and the effectiveness of policies on female participation in DWSS issues.

II. Material and Methods

The research aims to assess the effectiveness and implications of domestic water supply programs on women in rural communities. 'What' and 'how' questions were used to understand contemporary social debates and develop relevant hypothesis for further inquiry on women and water (Yin 2003). A case study of two villages in Vinh Phuoc commune was selected in order to obtain an understanding about the social phenomenon from different stakeholders' perspectives. Therefore, using the same methods for data collection and analysis in both villages in Vinh Phuoc commune was required to show how water issues and gender are related; as a result, the data collected illustrate the effectiveness of domestic water policies that has been implementing in rural communities.

The ontological dimension of this study is constructivist (Bryman 2004). The constructive approach emphasises individuals' importance by interpreting what constitutes a fact (Hayles, 1995 cited by Ademun 2009). This constructivist approach determines the possibility of enhancing women's empowerment as social actors through physical participation of community members, including disadvantaged groups and policymakers in the arena of water management (Sprague, 1999 cited by Ademun 2009). Gender is a basic principle, which shapes the specific conditions of women and men in society (Creswell 2013). Therefore, these assumptions need to be scrutinised by empirical studies in order to examine what constitutes the effectiveness of DWSS policies and challenges of women's participation in water management activities (Bryman 2004).

The epistemological feature of this study is interpretive ideology (Bryman 2004). Its main purpose is to obtain a common understanding of societal debates and action (Creswell 2013). Knowledge can help us to understand changes in the world (Bryman 2004). However, these debates should be identified by collecting the situated data, which are local and grounded in specific social, physical, historical and cultural context (Llewelyn 2007). As a result, generalisations are made when the previously developed theory is used and analysed as a template to compare the empirical results of the research (Yin 2003).

The qualitative research method is the major mechanism to understand issues related to women and water, based on the main criteria for evaluating for DWSS policies. Qualitative information is collected through FGDs in order to measure how women can get involved in decision-making processes and implement their roles as the main water users and managers in rural water supply programs (Creswell 2013). Also, this particular research method measures women's actual involvement, which entails their capacity to implement the responsibilities and roles assigned to them throughout the domestic water supply programs without male intervention (Creswell 2013).

The two villages in Vinh Phuoc commune were selected with the assistance of the local staff from People's Committee of Vinh Phuoc and the communal water and environment officials. The researcher also read through annual reports from the provincial and local water offices to obtain an overview of socio-economic development information of these communities. The following reasons were identified for the selection of the two villages, such as Vinh Thanh and Vinh Loi (Fig. 1); i) The Vinh Thanh village had a water supply station which is funded by the UNICEF; ii) The Vinh Loi village mainly depends on groundwater from the hand pumps for domestic use, iii) The private and communal initiative were identified in the construction and management of these water sources, iv) Women play a major role in water collection, use and management at household and community levels.

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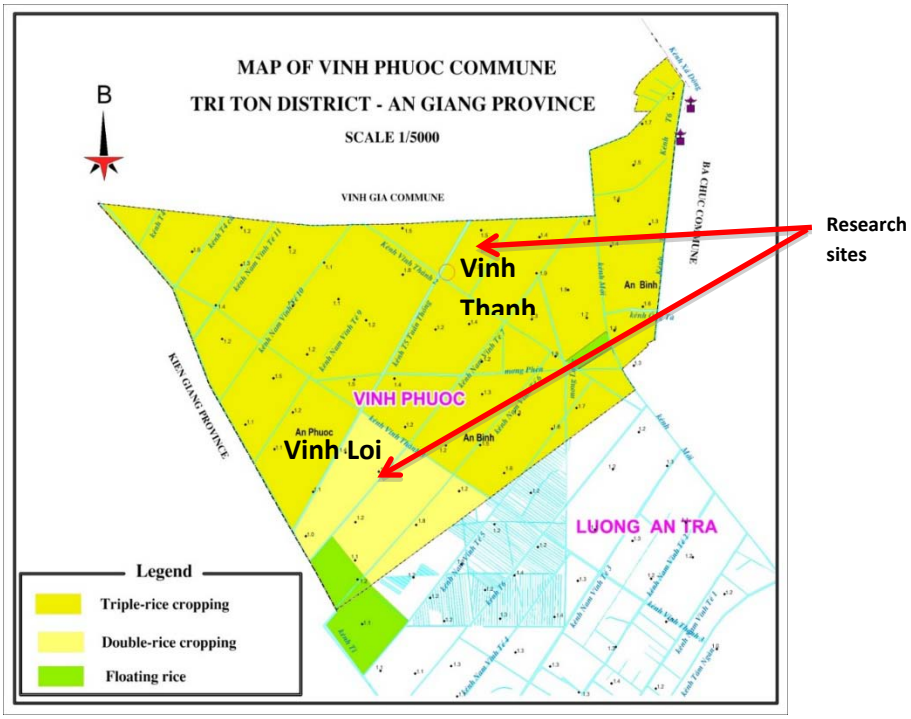

Source: Pham Duy Tien (2018)

Fig. 1: Location of study sites

III. Data Collection Methods

a) Secondary data

Secondary data is very important for understanding the background of research sites, domestic water supply services, socio-economic conditions as well as issues related to women and water. The secondary data used in this study was obtained from different sources: annual local government reports on socio-economic development, recorded information about the implementation of DWSS programs and their impacts on water users and human health, and unpublished papers and International Journal of Water Resources Development, Journal of Gender and Development. I visited provincial and local institutions to obtain the local government reports on the issues of gender and water supply programs. I went through the abstract, methodology and findings of each paper to determine whether the article follows the aims, research questions as well as the relevant paradigms and research methods.

b) Collection of empirical material

In-depth semi-structure interviews

Semi-structure interviews were carried out with the participation of government officials, including Department of Natural Resources and Environment, Centre for Rural Water Supply and Sanitation and People's Committee of Vinh Phuoc Commune regarding gender and the water services sector. The research used open-ended questions, which were designed for the participants as follows:

- The interaction between relevant stakeholders in the water supply services (How often and how they interact with the community and other stakeholders?)
- Who has the responsibility for delivering policies on the water services sector; and who report and receive the feedback from results of water-related projects.
- How effective the implementation of DWSS policies have been achieved?
- Whether policies or guidelines with regard to gender and the water sector are at provincial and local levels?

Focus group discussions (FGDs)

Women in the two communities were selected to be involved in the FGDs. The groups varied in size from 8 – 10 people. The two focus groups were carried out in the Vinh Phuoc commune with women – the water users and managers in the domestic water supply programs. FGDs were set based on a list of designed open-ended questions. The participants are allowed to add topics for discussion if they wanted to. Participatory Rural Appraisal (PRA) techniques were used to allow women to share their knowledge and experience involved in the DWSSs. The four tools were used: timeline, seasonal calendar, Venn diagram, and SWOT analysis. Such techniques give women the opportunities to express their voice about the actual implementation of

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DWSS programs and challenges of women's participation in water management activities.

IV. Results and Discussion

a) Household water use and water fetching

The water use in the household

The research findings indicated that people in Vinh Loi preferred to collect water for cooking, washing and bathing from the hand pumps near their houses, while in Vinh Thanh bathing and washing clothes are sometimes done in the canal. Generally speaking, the canal water remains the primary water source for people in both villages. Bottled water was identified as the main water source for drinking, while several households in the Vinh Thanh use piped water for cooking, washing and bathing. In the Vinh Loi, some better-off families can afford bottled water for drinking, while many poor households drink rainwater, and some drink water from hand pumps (after filtering it for seven days).

Water quality can be improved by treatment; this helps to improve human health by avoiding water-borne diseases. However, the FGD findings show that not all households in the Vinh Phuoc community treat their water before use. The main reason is that the water treatment methods currently available in the community are limited and expensive. Rural households in both villages often boil the water for drinking (other than those with access to hand pumps because they believe that these supply clean water).

Chlorination was once widely used to treat water, especially by poor people, but this method is no longer used; most households now buy bottled water instead. No FGD participants reported using solar disinfection because they believe that it takes several hours for water to settle and become clean and safe for household consumption.

Responsibility for collecting water for domestic use

The FGDs showed that women in the Vinh Phuoc community have the primary responsibility for collecting water for household use. Most women in Vinh Thanh collect water by the water taps from piped water systems and store it in domestic water tanks for later use. The participants stated that it was an easy task for them to meet water demands in the household. Women in Vinh Loi collected water from hand pumps for cooking, washing and cleaning, also storing it in private water tanks. The participants stated that men took over water collection tasks when their wives were sick or absent from the house.

As women have the main responsibility for water collection, they are first to detect water-related problems, such as the water source declining in volume, reduced water quality due to pollution or water taps breaking down. Most women in Vinh Loi said that they identify problems with the hand pumps, and then their husbands help to fix them.

Policy effectiveness and its impacts on women and water

The main sources of water supply in the Vinh Phuoc commune are communal. According to local officials, the communal water supply station provides water to 442 households living in Vinh Thanh, Vinh Loi and Vinh Thuan villages in the Vinh Phuoc commune. An estimated 90% of households in Vinh Thanh collect water from the communal water supply station while in the Vinh Loi, 70% of the households depend on traditional water sources such as hand pumps and canals. Such water sources are located close to people's homes, but the water is sometimes of poor quality and possibly unsafe.

Vinh Thanh's water supply station was built in 2006 with funds from UNICEF. In Vinh Loi, some households accessed to water from hand pumps under the support of the Research Centre for Rural Development (RCRD) in the year of 2013 (results of the Timeline – a PRA tool). Nonetheless, participants from both villages said that they were unhappy with the quality of water from the water supply services. Some participants mentioned that there is a water testing team that is responsible for the evaluation of water quality annually, but local people had not heard from this team. Similarly, little or no assessment of the water quality from hand pumps occurs in Vinh Loi. Reliability of supply, cost of water, water accessibility, quality and quantity are significant elements that help to determine how policy guidelines in relation to women and water under the National Target Program for Rural Water Supply and Sanitation (NTP) at the national level are being practised at the local level, and how these policies have impacted on the lives of people, especially women in the Vinh Phuoc community. These criteria are discussed in the following sections.

Seasonal unreliability of water sources

The FGD findings show that domestic water supply in Vinh Phuoc commune is impacted by seasonal variations, particularly in the dry seasons. In Vinh Loi, from January to March, traditional water supply sources like canals dry up, water tables fall, so hand pumps produce less and poorer-quality water, and rainwater harvesting is not productive. In Vinh Thanh, where people depend mainly on the communal water supply station. FGD participants said that though water supply station can store plenty of water for the dry season, the quality of the water was poor. Seasonal calendar – a PRA tool was used to collect the information on the reliability of water supply sources in the selected communities. Figure 2 identifies all water-related issues that households in both villages are facing over a 12-month period.

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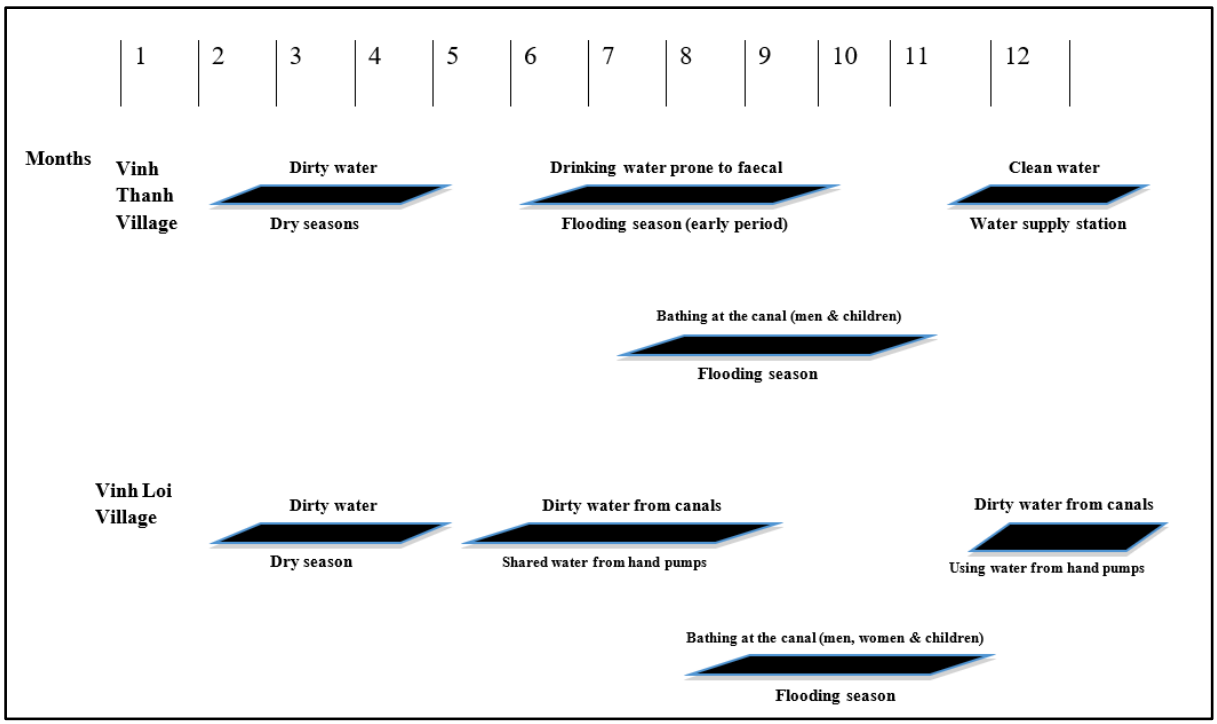

Source: Own illustration based on focus group discussion.

Fig. 2: Seasonal unreliability of the water sources in the two villages

As shown in Figure 2, seasonal unreliability powerfully affects the use of water in households. In particular, most households in both villages suffered from dirty water sources in the early flooding season. Women in Vinh Thanh stated that though they had access to a treated water supply from the water supply station the water is not suitable for drinking. For instance, the participants said that they often get diarrhoea after drinking water from water supply stations, especially in the first two months of the flooding season, even when the water is boiled first. In Vinh Loi, the canal water is dirty in this season and this affects water from hand pumps used for domestic purposes. In this period, water sources from hand pumps are shared among many households, and this also reflects the value of the communal water resources.

Women are generally identified as the group most affected by seasonal unreliability of water sources, because they carry the main responsibility for water collection, use and management in the home. Therefore, seeking alternative ways to meet the water needs of households puts a heavy burden on women.

The cost of water

Charges for water differ in the two villages. In Vinh Thanh, every household is expected to contribute a monthly fee for water supply. However, as previously noted, many households in Vinh Loi use hand pumps, so no monthly contributions are necessary. According to local officials, rural households pay for water under decision 23/2015/QD-UBND of the Provincial People's Committee. The first 10 m3 of water are priced at 4.500 VND per m3 this price applies for households in both urban and rural areas of An Giang province. The price rises to 11.000 VND per m3 for use of 10 m3 of water or more. However, poor people pay only 3.600 VND per m3 for the first 10 m3, and 4.500 VND per m3 for use between 10 and 20 m3. Although poor households pay less than rural households in general for water use, some of them cannot afford access to piped water.

The FGD findings show that women in Vinh Thanh experience great financial constraints for water use. This forces them to collect water from traditional water sources, such as canals. One woman in the Vinh Thanh's FGD said:

> *Due to limited financial assets, households often use water from canals for bathing and washing while they use piped water for cooking and drinking.*

Thus, DWSS programs that provided piped water will be unsuccessful if women cannot afford the water use and return to their old sources (canals).

Water accessibility

A SWOT analysis of water supply programs was carried out in the two selected villages (see Box 1). The researcher found that some responses from the two FGDs were similar. In particular, participants identified similar strengths, opportunities and threats; weaknesses varied with regard to the implementation of DWSS programs. Hence, this information is presented in an integrated SWOT analysis, which presents the finding of how local women take advantages of strengths and opportunities regarding water use and management to mitigate its weaknesses and threats.

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Information Box 1: SWOT analysis of water supply programs in Vinh Phuoc

STRENGTHS (S)	WEAKNESSES (W)
• Easy access to water; reduced time and effort to collect water. • More time to engage in other productive activities. • Water from water supply station and hand pumps is better quality than water from canals.	• Water from the new water sources is sometimes turbid and smells bad. • Water-borne diseases occur when there is no water treatment. • The water supply mainly depends on the power station (Vinh Thanh). • Seeking alternative sources; for instance, canals to collect water in the dry season (Vinh Loi).
OPPORTUNITIES (O).	**THREATS (T)**
• Cooperation between the local authority and donors in community-based development projects, such as floating rice conservation and water-related projects will bring benefits to local people's lives.	• More droughts will result in the water scarcity. • Being scary the flooding with very low levels in the future. • It is necessary to prepare the tanks to harvest rainwater in order to store and use in cases of severe droughts.

Source: Own illustration based on focus group discussion.

As shown in Box 1, the distance that must be travelled to collect water is no longer a problem for women in either village. Women have more time to participate in productive activities, such as rice seeding and transplanting, and small trade – activities that boost their family income. However, the water supply station represents a new source of instability in the water supply to households in Vinh Thanh. The main reason is that this water supply source is heavily reliant on the power supply station, thus when power outages occur consumers cannot access water. One woman from Vinh Thanh said:

> *The water supply is reliant on the operation of the power supply system, thus if power outages occur, especially on the weekend and in the dry season, this means households cannot have access to water sources.*

As already noted, many people in Vinh Loi collect water from hand pumps, which are very close to their houses. However, during the dry season the women in this village had to seek alternative water sources, mainly canals.

Women in the FGDs were concerned that future water scarcity would once again burden them with the responsibility to fetch water. One woman in Vinh Loi said:

> *The weather today is hotter than in the past few years; people here have experienced prolonged hot days along with flooding with very low levels and the rainfall was less than usual, and this led to dry canals up in the last year.*

People in the Vinh Phuoc community are worried about climate-change-induced water shortages that will restrict both agricultural production and daily activities, forcing them to use traditional sources, such as canals and rainwater, to meet their water needs.

The SWOT analysis indicates that women in the two selected villages experience challenges of water accessibility differently. In Vinh Thanh, the water supply station is unreliable because it depends on the power supply station; this compels women to fetch water from canals or collect rainwater for domestic use. In the Vinh Loi, women have to collect water from canals during the dry season as the water supply from hand pumps falls. Hence, DWSS programs in these villages have failed to give women (water users) stable access to water since these challenges force them to seek alternative water sources to meet their household water demands.

Water quality

It is a common observation that due to different water supply services among the two research sites, women in the Vinh Phuoc have different ways to contribute to water management activities, such as recognising water quality and therefore making decision about how best to utilise it or identifying other ways to collect water. In the Vinh Thanh, the water is supplied by the communal water supply station, and sometimes the construction itself failed to meet the desired qualities, which are culturally perceived by the local community. For instance, in the Vinh Thanh village in the Tri Ton district in An Giang Province, the water supply station supplies water that is not regarded as 'good quality' or 'safe and hygienic' water because it is coloured. One participant said:

> *The water from the water supply station is sometimes turbid and even contains alum, and the water must be boiled for drinking purposes.*

Such water is seen as unfit for drinking. Instead, the water from water supply stations is utilised for cooking, washing and bathing, while for drinking, women (except those from poor households) buy bottled water.

Similarly, the water supply from hand pumps is the main water source for households in Vinh Loi. However, such water also has limitations. Most participants agreed with this statement from a participant from Vinh Loi village:

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The taste of the water from the hand pumps is sweet which is very necessary for drinking water. However, women realise that the initial quality of the water is muddy, especially in the morning, thus they have to pump out the first 10 – 20 litres before collecting water.

Furthermore, women find it difficult that they will have to look for alternatives serving for the household water needs in the dry season when the water from hand pumps gets low and contains lots of alum. For this reason, rainwater harvesting is the main remedy for several households to meet the water demands; some can afford to buy bottled water in this instance. Therefore, this reflects that water supply from hand pumps failed to obtain the goal of sustainability in the water management programs, specifically evidenced from in the shortage of water in the scenario of climate variability.

The FGD findings show that women in both villages listed health problems associated with poor water quality in their villages, notably water-borne diseases such as dysentery and diarrhoea. These illnesses put a heavy burden on women, who are overwhelmingly the carers in their families. Poor water quality increases women's workloads, because water needs to be boiled before drinking, and this is especially hard on people who cannot afford bottled water. However, boiling has its own cost: it takes a lot of time and requires lots of firewood, which must also be collected. Thus, DWSS programs have once again failed to achieve their basic goal of providing clean and safe water to households in the Vinh Phuoc commune. Poor water quality poses health risks and increases women's workloads due to the time spent on collecting firewood and water and boiling water.

Water quantity

Households in both villages utilise water for drinking, cooking, bathing, washing clothes and other activities including watering plants and animals. The FGD data indicate that the water consumption of Vinh Loi households averages 100 litres/day, while the average water use per household in Vinh Thanh is an estimated 80 litres/day. Water needs varied depending on household size and priorities. To explain: differences in geography and water supply services drive differences in water use between the villages. Some households in Vinh Thanh live along the canal, and sometimes their water supply source is water piped from it. Most of the participants in this area said that they had to pay for water from the communal water supply station. To save money, they use piped canal water for washing, and personal hygiene. In Vinh Loi, most households rely on water from hand pumps, and a smaller proportion uses water from the canal. Households relying on the hand pumps do not pay for water use, because they are exploiting a natural underground water resource. This explains the differences in the estimated average water use per household in the two villages.

The FGD findings indicate that women in both villages experience water shortages, especially in the dry season and in times when the water from water supply sources is dirty and unsafe. To obtain sufficient water for domestic use, women often collect water from canals and harvest rainwater. However, such sources are unsafe; such as unhygienic post-harvest practices greatly affect the quality of rainwater (Wilbers et al. 2013). Thus, DWSS programs have not achieved success on the criterion of water quantity; lack of water continues to burden women with the work of fetching water from alternative sources.

b) Factors that influence women's participation in water management

Traditional norms and practices

The results show that traditional norms and practice in the Vietnamese society and particularly in the Vinh Phuoc community constitute a major barrier for women to be involved in the public sphere and specifically in water management. In this respect, socially constructed roles and male-dominated society are identified as the major traditional norms and practices that impede women's opportunities to participate in the arena of water management.

Socially constructed roles are the major obstacle affecting women's involvement in water management in Vietnam. Traditional roles refer to how men, women and children traditionally divide the daily work of life (Svahn 2011). Through many generations these roles have become norms in Vietnamese society. Because traditional roles have been norms for women over centuries, and even women think that this is the way things should be organised. Most FGD participants agreed with the following statement by one woman:

Labour division between women and men in the family is reasonable; for instance, men must go out to work, women have to fulfil household chores. Thus, water collection and allocation are women's tasks in the home, and it is fair and it is difficult to change this now.

It has been argued that traditionally constructed roles establish social behaviour within the culture of water management (Minoia 2007) that influences its level of success. To illustrate this, practices among international institutions and donors sometimes disregard the traditional norms within a cultural context (Svahn 2011). Therefore, complex cultural barriers are seen as the result of social behaviours and traditional roles that restrict women's involvement and these are often ignored when developing the practices of water management. From this perspective, traditional norms and practices may reinforce the complex gender roles that restrict women's participation in the community as well as improvements of their situation as a whole.

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Another significant barrier influencing women's involvement in water management is the dominant position of men in Vietnamese society. FGD participants stated that women's exclusion from water management is commonly due to their husbands' lack of support for their wives' engagement in such activities. Specifically, some of the women in the FGDs agreed that:

> *Men have the voice in the family, and they do not like women who often go out of the house and take part in social activities because that is not their role.*

This indicates that women in these rural communities find it difficult to gain support from male family members. However, the FGD participants also stated that while women are often excluded from activities related to water management at the community level, they also restrict their own involvement; one said:

> *It is not only men hindering women to involve in such activities and positions, women hinder themselves because they think that it is the role of men.*

Women often experience limited and different opportunities and are excluded from decision-making processes, thus their viewpoints on various issues are different from men(Stamp 1989). This can result in conflicts between men and women with regard to resource management and development processes. These conflicts may increase disparities between men and women and threaten the power balance in gender relations(Stamp 1989). Women can even face domestic violence related to water consumption, as one participant implied:

> *Women are often blamed and shouted at as their husbands find that there is not enough water for bathing when they get home after work.*

Therefore, men in this case find that women have failed to fulfil their household tasks that at times may lead to conflicts in the family, and sometimes even violence. This indicates that women's exclusion from decision making processes at both household and community levels are mainly rooted in social and cultural barriers, in which the gender roles have been conditioned over decades, and where the male is superior to the female. Power imbalances between men and women in the household and community participation activities, especially in water management are clearly discussed in the next section.

Power imbalances

It has been argued that once power imbalances in the household and the public spheres are altered, approaches designed to increase female participation will become more effective (Ivens 2008). Power imbalances exist in terms of the ownership of assets and resources in families and communities. As already mentioned, male-dominated hierarchical structures remain common in Vietnamese society, rooted in traditional norms and practices. Due to the male-dominated nature of society, women in many parts of the country lack the power to make decisions unless their husband or father gives permission. As one FGD participant stated:

> *Traditionally, the head of the house is the men, thus women must obtain the consent of men to make decisions about any activities, especially financial investment plans or business matters.*

The FGD findings also show that lack of decision-making power prevents women from participating in water management. Although women are the main manager of water in the households, they are still afraid of speaking about water-related activities in the presence of men due to the restrictive culture. Participants expressed this in statements such as:

> *When men have said something, women must be silent because they do not want to cause the conflicts in the family.*

Men in these communities own all the resources because they are the decision-makers and the head of the family. Women are not expected to oppose or argue with men and are not allowed to speak in public due to the culture. Therefore, women find it difficult to adopt leadership roles and positions in the arena of water management at both the household and community level.

Male dominance within Vietnamese society not only prevents women's involvement and empowerment in community activities but has other pernicious effects. A case study in the Vinh Phuoc commune indicates that women's participation was greatly opposed since the men were reluctant to relinquish leadership positions, especially in the water-related project management committee. Men in Vinh Phuoc are involved in the processes of designing, planning and decision-making in water projects to a much greater extent than women. As one of the Vinh Thanh FGD participants stated:

> *The water supply station was constructed with the involvement of the males in the community and male local officials. The importance of female participation in decision-making was disregarded, and that raised some major concerns for the communities.*

The male dominance within Vietnamese society strongly hinders women's engagement in the public sphere. Women will not have opportunities to participate in water management without the creation of an enabling environment.

Time allocation

The FGD findings show that time allocation is also a key barrier to women's participation in water management in the Vinh Phuoc community. This finding corresponds with the literature, which notes that due to the double workload, such as household tasks and childcare, women are often restricted in taking part in water management and water-related project activities (UN Habitat 2006 cited by Svahn 2011). The UNDP (1995) estimated that women spent 9.7 hours and men

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0.9 hours per day on fuel (mainly wood) and water collection. Girls devote more than seven times as many hours per day as adult males to such activities and 3.5 times as much as boys.

A case study in the Vinh Phuoc community found that women spent 8 – 10 hours per day on productive domestic activities, including water collection and family care tasks, while men spend much less time than women in these activities. As previously explained, this time has large opportunity costs. Women have little opportunity to engage in other productive activities, such as community development, education and income-generating activities that could improve their situation. Participants from both villages agreed with one woman's statement that:

> *Women have to take on domestic tasks, including the care of the home, of children, of families; thus they do not have much time to be involved in other activities beyond their own households.*

Due to their domestic workload, women are often unwilling to participate in water management activities. Nevertheless, the women involved in the FGDs were happy to attend the public meetings in general and meetings on water-related issues in particular. One said:

> *When women are invited to take part in local meetings, we are ready to join in, because we can sit together and share and learn from other women's experiences of daily living problems and gain new information.*

However, when the discussion turned to women's participation in decision-making positions and water management teams, women in the two communities studied did not want to be part of it. The main reason is that women believe that undertaking community activities will add to their burden, since their responsibilities for household tasks are not reduced. Ways must be found to increase women's free time and their ability to take part in water management meetings and activities at local levels.

c) A synthesis of women's participation in the DWSSs

Neither of the villages studied maintains specific water or water user committees that have the potential to take responsibility for water supply planning, operation and maintenance. Generally, local government constructs, monitors and manages the performance and progress of water supply programs. This contrasts with local officials' statements that selected local staff would be in charge of operating and maintaining the water supply system, including monitoring, assessment and repair of water treatment facilities. Issues of women's empowerment may be discussed in the local meetings, but the principle actors intend to maintain the status quo. Hence, women are seen as the beneficiaries and their views are not taken into account in the processes of operation and maintenance of the DWSSs in Vinh Phuoc.

Another factor determining women's lack of involvement in the operation and maintenance of the DWSSs is traditional norms. Vinh Thanh's women believe that the idea of them engaging in the operation and maintenance of water supply station is unconventional, thus they find it hard to adopt. The main reasons they gave were, firstly, that men are considered to have primary responsibility for the maintenance of water sources, and secondly, women trying to participate in these matters are likely to face negative attitudes because they are not expected to work outside the domestic sphere. The FGD data shows that these women do not care about water supply activities as long as the water needs of their households are met. Hence, few women living in the Vinh Thanh had any role in the maintenance of the water supply station.

As previously noted, women in these communities had no opportunities to influence decisions concerning the construction of the water supply station. The main reason is that the local government holds the power to decide where water supply systems should be installed, and who is selected for the management of this system.

Furthermore, women from these villages do not recognise the potential contribution they could make in leadership roles, partly due to cultural dimensions. As previously outlined, social norms strongly influence women's perspectives on such participation. One FGD participant in a statement supported by many others said:

> *Management of domestic water supply is female's business, such as water distribution, water fetching and payment for water costs, but we do not think that we expect to be part of the water managing team at the local because these activities and positions are proper for men rather than ours.*

Previous authors have argued that women naturally want to engage in water management activities, but in the Vinh Phuoc's case study cultural barriers prevent them from doing so.

Traditional norms and lack of confidence have been identified as the factors that prevent women's participation in water resources management in Vinh Phuoc. Women are not expected to participate in the management of programs and are not encouraged to work outside of the home in such activities. The local government made no attempt to involve women in water management programs. The corollary, and conclusion, is that efforts of policymakers to encourage women's participation in the DWSS programs and policies have been ineffective.

V. Conclusion

Policies on domestic water supply in the Vinh Phuoc commune and in An Giang province in general aim to provide water supply services, such as piped

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water systems and hand pumps to rural households. However, the policies view women as mere 'passive recipients' of the output of these water-related programs. Almost all women involved in the study are not encouraged to engage in the process of planning, implementation, maintenance and decision-making within the water sector. Households and women were merely seen as the end beneficiaries of the DWSS programs being implemented in the community.

NTP policy guidelines state that women are encouraged to participate in water management activities, ensuring that their needs and interests are met at national and local levels. However, the research found that women's needs in the actual implementation of DWSS programs, particularly in Vinh Phuoc have been generally known. In fact, assessments of the water needs of local users are not included in local government policy. Moreover, water needs were identified by the outsiders, which may differ from and be irrelevant to the actual needs of local communities. For example, the quality of drinking water has been universally identified as a crucial aim from the local government's perspectives. However, it is biased in the fact that other daily domestic water uses such as cooking and personal hygiene, which are also women's concerns. In addition, the water from water sources supply for households is perceived as the safe and hygienic drinking water under the policy framework, but this notion is divorced from the local belief about drinking water with good quality. In the case studies, women in both villages employed more than one water source, such as water from canals or rainwater, to ensure that their households' water needs were met rather than they only utilise a single source (the water supply station in Vinh Thanh and hand pumps in Vinh Loi). If the water supply station and hand pumps could fulfil the water needs of rural women in the communities, the work of women related to water fetching would be greatly reduced. Therefore, water needs and interests must be understood in relation to the social and cultural context of the community.

The participation of women in decision-making in the water service sector in particular and in community management mechanisms in general is supported by agencies at national and local levels. However, the results of the research show that there is no scope for consideration of the gender aspects in the water service sector at the local level. The FGD findings indicate that women in the communities were not given positions to participate in the activities of management, operation and maintenance, especially at the water supply station. Therefore, although women are globally recognised as the primary water managers in water-related activities, women's participation as well as their roles and responsibilities are still disregarded in the perspectives of policymakers and Vietnamese society as a whole.

In rural Vietnamese society, men are regarded as able to fix technical water-related problems, and women are socially and culturally regarded as the main collectors and managers of water in the households. Social principles do not allow women to assume responsibility for equipment maintenance in the water sector. The existing DWSS policy has failed in its intent to include women in this aspect of water management.

Women in the communities lack decision-making power in both the household and the public sphere, especially in activities of operation and maintenance of the Vinh Thanh's water supply station. The FGD data show that women are recognised as the main managers of water at both household and community levels, whereas the site location and mode of operation of the water supply station was decided by the local government, which is male-dominated. Setting up the water supply source, seen as a part of planning, is a significant issue, because this may come along with factors that influence the process of achieving the final outcomes, especially the basic concern is to make decisions on proper technology options. This indicates that a delegation of women in such an activity is limited at the local level. Thus, Vinh Phuoc's women hold little power over the process of planning, implementation, operation and maintenance of the water sources; this is due to local governance structures where males dominate, but also factors including social and cultural barriers that prevent them from being involved in this arena. These factors adversely impact on women's participation throughout the public sphere. It can be said that GAD is an analytical approach to why DWSS programs, particularly in An Giang province did not work because power imbalances and socio-cultural factors were not taken into account and addressed.

The modern water sources – the water supply station and hand pump – have failed to fully replace traditional sources such as rainwater harvesting and water from canals in the Vinh Phuoc community. Such sources provide water, which may be used for activities, such as cooking, washing and bathing, other than drinking. Hence, the DWSS programs recently implemented in Vinh Phuoc have failed to reach their basic goal of providing safe and clean water for all domestic uses. This is particularly in aspects like reliability, cost of water, accessibility, water quality and quantity. In reality, the introduction of a "modern" water source namely hand pumps in Vinh Loi still meant that women have to spend considerable time and energy fetching water from canals for household use. Similarly, the study indicated that the water supply station constructed in Vinh Thanh did not reduce the burden of local women because they continued to use alternative sources to meet water needs in times when the quality of piped water was not good and when the electricity supply failed. Therefore, Vietnamese DWSS policies or programs have been ineffective in encouraging

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women's participation in decision-making because the specific needs of women are not addressed in local communities.

References Références Referencias

1. Aureli, A. and C. Brelet (2004). Women and Water: An ethical issue. The United Nations Educational, Scientific and Cultural Organization.
2. Bryman, A. (2004). Social research methods, Oxford University Press.
3. Creswell, J. W. (2013). Qualitative inquiry and research design, choosing among five approaches, Sage publications Thousand Oaks, London, New Delhi.
4. Llewelyn, S. (2007). "A neutral feminist observer? Observation-based research and the politics of feminist knowledge making." Gender and Development 15(2): 299-310.
5. Minoia, G. (2007). "Gender Issue and Water Management in the Mediterranean Basin, Middle East and North Africa." Retrieved 20 March 2016, from http://papers.ssrn.com/sol3/papers.cfm?abstract_id=984472.
6. Singh, N. (2004). "Gender concern in water resources management: Rethinking gender initiatives in India." Gender & Local State in South Asia(16): 1-13.
7. Stamp, P. (1989). Technology, gender, and power in Africa. Canada.
8. Svahn, K. (2011). Women's Role and Participation in Water Supply Management - The Case Study of the Republic of Ghana, Uppsala University.
9. UNDP (1995). Human Development Report 1995. Oxford University Press, Inc. New Work.
10. Wilbers, G.-J., et al. (2013). "Effects of local and spatial conditions on the quality of harvested rainwater in the Mekong Delta, Vietnam." Environmental Pollution182: 225–232.
11. Yin, R. K. (2003). Case study research: design and methods. London New Delhi, Sage publications.

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