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## **Gender and Water in Northeast Thailand: Inequalities and Women's Realities**

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### **Abstract**

The water world is socially constructed, reflecting continuous global gender inequalities and discrimination by those who hold dominant perspectives on water. While there is a strong global acknowledgement of the roles of women in water management by the United Nations International Water for Life Decade 2005-2015, discourses on gender mainstreaming in water management are still marginalised and under-theorised. The Millennium Development Goal-7 on environmental sustainability, addressing the need of more than one billion people for a significant improvement to accessing safe drinking water and basic sanitation, stagnated without a strong political will to include gender ideology in mainstream water perspectives. This qualitative study was conducted in a sub-urban community of Northeast Thailand in 2011, exploring the gendered roles, responsibilities, and inequalities of access to and control over village water resources. Results of this study illuminate the importance of taking into account the complexity of power and negotiation in local water structures within women's social realities.

*Key Words:* Gender, Water, Inequalities, Water Tensions, Northeast Thailand

### **Background**

In the past few decades, rapid population growth, continued urbanisation and exploitation of agricultural lands have caused a threat to global water security. Water security includes elements of supplying humanity with water for drinking, hygiene and sanitation; for food and fish; for industrial resources, energy and transportation; and for natural amenities which all depend upon maintaining sustainable ecosystems (UNEP, 2009).

Access to water is a fundamental human right<sup>4</sup> and the allocation of water resources, access to water facilities and investments should be equally beneficial for all members of societies (Gündüz, 2011). The inclusion of gender mainstreaming in water resource management

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<sup>4</sup> Many business interests regard water as a commodity; yet water is indeed both a commodity and human right and herein lies a significant source of the tension.

is essential to global water security as 70% of the world's poorest, with no access to clean water and sanitation, are women and girls. Women's central roles in the provision, management and safeguarding of water have been recognised in global water and development agendas including the UN Conference on the International Drinking Water and Sanitation (1981-90); the 1992 Dublin International Conference on Water and Environment and the UN 21<sup>st</sup> Water for Life Decade; and the Millennium Development Goal-7 on clean water and sanitation (Bernadette P Resurreccion, 2008). The interconnections between the right to water and women's other basic human rights are now being slowly recognised. Denying women's right to water is also a threat to women's rights to education, employment and social development (Gündüz, 2011).

Although inadequate access to safe water affects both men and women, water scarcity, poor sanitation, and water-related illness are affecting women far more than men. Women in poor regions such as Africa and Asia collect 70% of household water, while men collect 30%. The daily burden of fetching water for families greatly affects women's health and participation in education and social development. The economic value of 'unpaid water fetching' in India is equal to 150 million workdays annually or US \$18 million (Bouwer, 2006); a significant amount that could alternatively be spent on girls' education.

In many societies, women and girls are primarily responsible for managing household water for drinking, cooking and washing, yet women continue to be excluded from water resource management (Bouwer, 2006; Ghosh, 2007; Bernadette P. Resurreccion, 2010). Moreover, women's concerns over water are often incorrectly assumed to be well represented by male household heads (Bouwer, 2006).

The dominant thinking on water infrastructure, planning and administration typically occurs through activities associated with men. Male experts, engineers, scientists and bureaucrats are dominating these sectors, and it is often perceived that this is the way it should be (Ongsakul, Resurreccion, & Sajor, 2012; Zwarteveen, 2008). The consequence of dominant masculine perspectives in irrigation, for example, often excludes women irrigators from voicing their concerns. This represents a significant lost opportunity for effective community irrigation and farming in societies where women are the proprietors of the family farm.

Together with Singapore and Malaysia, Thailand is among the top three countries in the ASEAN region on track to meet the MDG goal for drinking water (UNICEF and World Health Organization, 2008). In Thailand, a number of agencies are responsible for various aspects of water governance. The National Water Resource Committee (NWRC), formed in the 1990s, is now an important government body to promote and facilitate an integrated water management approach in Thailand. Thailand's Royal Irrigation Department (RID) is mostly responsible for providing infrastructure and managing irrigation. Thailand has recently shifted from 'single purpose' and 'engineering based' water management to an Integrated Water Resources Management (IWRM) model that promotes participatory water governance for environmental sustainability and the enhancement of community health and social wellbeing. However, despite the euphoria associated with this national water reform on paper, in practice it has unfortunately continued to reproduce gender inequality and ignore women's central roles in water security (Ongsakul et al., 2012; Bernadette P. Resurreccion, 2010).

Northeast (NE) Thailand is one of the poorest and driest regions in Thailand. It has experienced persistent and severe droughts for decades. The impact of climate change on water availability is also of considerable importance in NE Thailand and Thailand's Integrated Water Management policies due to the country's high economic dependency on agriculture and water resources. NE Thailand has one of the largest lowland paddy field areas in the country

constituting almost 5 million hectares. The lowland paddy field is the poorest form of rain-fed farm system relying on unpredictable water supply and is very drought-prone. Droughts are highly variable and unpredictable. Early season drought affects the planting time, while the late season drought affects crop maturation. Often, during a long drought season, concerns over food security and farm income force families—mostly male members—to find out-of-farm employment in nearby towns (Penning de Vries & Ruaysoongnern, 2010). Women and elders are then left to manage the household and their small farms for day-to-day subsistence.

Studies on gender mainstreaming and gender sensitive policy and programme in Thailand's water resource management had been widely overlooked until the late 2000s (Ongsakul et al., 2012; Bernadette P Resurreccion, 2008; Bernadette P. Resurreccion, 2010; B. P. Resurreccion, Real, & Pattana, 2004). Resurreccion and colleagues (2004) examined the application of the participatory approach in an Asian Development Bank project with Thailand's water resource sector. They found that while this project promoted a bottom-up participatory management approach, it failed to recognise the role of local power and gender differences in participatory water management. Recently, Ongsakul et al. (2012) noted that the dominant masculine culture in both traditional and new water bureaucracies had continued to promote gender inequality. This then becomes a structural barrier to women's participation in national water resource management. The assumption that active participation of women in collective water management will ensure gender equity is therefore arguably a false premise. The challenge of ensuring women's participation, and access to water for all, is therefore not as straightforward as it seems. Thai women's social hierarchies, norms of proper behaviours and conventions of marriage all potentially limit women's participation (Cleaver & Hamada, 2010). We argue here that while studies on water administration and management systems are important, more research is needed to capture the influence of social and cultural context on gender inequalities in water resource management.

## Research

This research was part of a larger 3-year research project entitled Holistic Approach on Water Management in the Communities of Namphong Basin, supported by the Higher Education Research Promotion and National Research University Project of Thailand. This gender arm of the research aimed to include an understanding of gender roles and relationships and how these affected and were affected by water needs in promoting greater water sustainability and resource efficiency.

The chosen field site for this study was a peri-urban farming community of Thai heritage and Isaan ethnicity living in Ban Koke (pseudonym) of Tambon sub-district in Northeast [NE] Thailand. This village was selected based on its representation of the agricultural area of Namphong Basin. The community of this village also shares a similarity of social structure, ways of life, ethnicity and customs to other villages of NE Thailand. Ban Koke is only 20 km or 30 minutes by road from Khon Kaen central. This community is over 100 years old (as told by the villagers) and originated from 5-6 families who migrated from the RoiEt and UbonRachathani area near the border of Laos. This community comprises 12 villages with a total population of 9,700. The official leader of the village is the *kamnan* who is the official government representative, elected by the villagers. The original settlers in this community lived in grass houses and farmed rice, vegetables and livestock (cows, buffaloes and chickens). Nowadays, the houses are built of brick with modern designs. Villagers are of close-knit families. They are

related to each other and most of them have lived their entire lives in this community. At first observation it appears to be a community of elderly folks, but by evening, the community comes alive when students return from school, and adults return home from work in the rice fields or nearby towns. Most households have small gardens to grow their own vegetables and fruits.

The average household income was between 20,000-30,000 Baht/month (US \$670-\$1,000). Sources of income included farm produce, small businesses (e.g. convenience stores), and casual employment at the villages or working for family businesses in Khon Kaen central. In non-planting seasons, female and male adult family members may work in nearby town as seasonal labourers.

Public transports available in the communities were mostly *song taos* (smaller, open-back, two row trucks) and buses. At peak hours buses can be overcrowded with students and workers. Other transportation includes pick up cars, motorbikes, and two-man motor vehicles. The villagers transport goods between villages using pick up cars or carts attached to their motorbikes. Some of those goods include ice cream, fruits and vegetable, meats, and knickknacks to be sold in the markets. Many villagers own pick up cars or motorbikes.

The field research was conducted during the rice planting season between May to September 2011. Participants were recruited by using purposive sampling whereby villagers who, at the time of the research, were involved in water management both directly or indirectly were invited to participate and share their experiences. Participants included 82 lay-residents (Female=57; Male=25), 34 local leaders (e.g. local Buddhist monks, public health volunteers and members of local women's groups) (F=29; M=5) and 16 local administrators (F=3; M=13). All respondents were Buddhist and were literate. The majority of lay-respondents were farmers or seasonal workers. Participants were between 30-61 years old. Most of them were married. The data were collected by observations, informal dialogue, group interviews and in-depth interviews in Isaan dialect. Isaan refers to a variation of Thai language mostly spoken in NE Thailand. It is an Austro-Thai language that is closely related to Lao. The NE Thailand population is a blend of ethnicities from Laos PDR, Cambodia and other surrounding areas. Those interviewed individually were 16 local administrators and 3 monks and 18 residents. Five group discussions were formed to include women members of community and women's groups. All interviews were tape-recorded and transcribed and were later translated into Thai and English. Identifying details and names of participants are excluded from this article to ensure anonymity.

### *Community Water Resources*

In Ban Koke community, water sources included rain, roof run-off, farm run-on water, groundwater and public surface water, which are used for different purposes, reflecting Thailand's adoption of multiple use water system [MUS] (Penning de Vries & Ruaysoongnern, 2010). Water treatment plants were located in three villages. Nearly all households had water tanks outside the homes to collect rain water. The tanks were washed at least once a year. Tank water is generally sufficient to supply drinking water for a family throughout the year. Most villagers use rain water for drinking. Some however, may also think that rainwater is not suitable for drinking and they purchase drinking water gallons from nearby stores.

### *Gender Inequality in Domestic Water Consumption*

Gender inequality in water consumption is produced and reproduced through household relationships and structural household arrangements in which women are the ones primarily responsible for looking after children and households (Ongsakul et al., 2012). Villagers were

very articulate in explaining patterns of water consumption amongst household members. Women were consistently reported as the main water users, followed by teenagers, men and the elderly. Within Thailand's gender norms, a woman's primary role and responsibility is to be a good housewife. This follows Buddhist teachings on women's merits, which are related to their biological state as mothers or *mae* first, then as dedicated wives, as good daughters-in-law and finally as good community members (Hanks, 1962; Ockey, 1999). Hence women are responsible for more domestic roles than other household members, which necessitates that they take more responsibility for managing household water, and are also the main water users of the household. Women in this study explained that they needed water for cooking, washing dishes and clothes, and cleaning houses. Most did not have the luxury of labour saving devices such as washing machines, dishwashers or vacuum cleaners. Women noted that it was hard to run errands and complete household chores in Thailand's hot weather, and often they needed to shower more than three times a day to keep them feeling fresh:

...as for me, after (I) wake up, I go to the bathroom, clean myself then go to the temple. After that I wash clothes. If I am sweating [from washing clothes by hand] then I'll take a shower again. At 4:00 in the afternoon, I have another shower again as I like to keep myself clean. I wash the dishes then take a shower in the evening before going to bed. I take a shower 4 times a day. Women have more roles related to water consumption than men; it could be 30-40% of water consumed by men and 60-70% by women. (woman villager, interview, Thailand, 19 September 2011)

The underlying inequalities in water consumption between men and women were due to different needs and priorities. Women's highest water priority was for daily drinking, cooking, washing and household maintenance while men prioritized water for farming. During a prolonged drought however, males' duties for irrigation water often became women's duties when the male household members left the village for out-of-farm employment. In this instance, the idea of family survival, shared interest and family interdependence is arguably tied up with inequality of water use.

#### *Gender Inequality in Control over Local Water*

Women's activities are closely related to water, and women therefore are the first ones who often note changes in water quality or other water related problems. A group discussion with women villagers revealed that there have been significant water problems in the village.

Question: What sort of water problems have you ever had?

Woman 1: I observed at that time that our water was discolouring...it was light yellow and it had a strange smell. I complained about it to my husband and told him to communicate it to the village water committee.

Woman 2: Yes...my mother (75 years old) and my child got skin rash due to that poor tap water. I complained but no one was listening. I want an improved water quality... but I don't know what to do and how.

Question: How did this problem get solved?

Woman 3: Well...men are often ignorant...the design of plumbing or pipes and all are not friendly and helping us doing domestic work. They also ignored a

woman's body [size, physical strength]...women don't climb up to fix things. Women can also do fixing small problems like broken tap or lines, we often have to fix it too! But we are not as strong as men...

Question: How did the discoloured water problem get fixed?

W1: Whether water is clear or turbid, men never care as we do...since they don't use water as we do. We women [together] had a meeting and brought the sample to show to the Mayor. Then he solved this problem. It resulted from our [women] voices.

Woman 2: Both men and women use water...whether water is good or bad, women first to say it.

(group discussion with female villagers, Thailand, 25 June 2011)

An alternative group discussion with male community members revealed that men had different perceptions of women's abilities to solve water problems. Women were perceived to be incapable of solving technical water problems and as needing men to do the fixing work for them:

Men 1: When there was a problem with turbid water, women asked men to fix it; women don't fix it, [they] only blamed or complained.

Men 2: Yes, women like to say 'Just fix it. That's not difficult.'

Men 3: When water is dirty, women first will say it but they are not likely to present it [to the committee], they ask men to present. But if it is a severe problem, they [women] would group themselves and present in a meeting.

(a group discussion with male villagers, Thailand 25 June 2011)

The role of women as the guardians of water was widely acknowledged by the community. Fixing domestic water problems (e.g. fixing broken or leaky pipes or discoloured water) becomes a 'grey area' of responsibility. Men are likely to see that domestic water is women's main responsibility and secondary to men's; women see themselves being disadvantaged in fixing male-engineered water structures or plumbing equipment and rely on men to fix broken taps or pipes and climb up and clean the water tank. Within women's social reality, poor water quality brings extra domestic and financial burden to women. For example, women in this study had to take their family members to the health clinics due to water-induced rashes. The cost for transportation to clinics and health care was a burden to women as they have to manage the family budget. This study also suggested that when no formal support was received from male head of households, women were able to be proactive in solving domestic water problems utilizing their informal social network.

### *Gender Inequality in Public Participation*

In every culture, women and men are bound to comply with cultural or societal gender norms which they must hold up and measure themselves against. As such, women are often endorsed with exaggerated feminine ideals, which often accommodate the preferences and interests of men. For example, in many cultures, women are expected to: display more social than technical competence; accept childcare and marriage as their main responsibility as opposed to participation in the job market; and adapt to men's desires rather than fulfilling their own (Ongsakul et al., 2012).

Thailand was of the first countries in the world to give women the right to vote in 1932. Yet little has changed in relation to women's low participation in public administration or the judiciary system, as in 2011 only 15-17% of women participated in these domains. Women's participation in local governance is even lower at 9.4% (UNWomen, 2013). In Buddhism, in order to maintain the social harmony all activities are ranked, with religious activities being the first rank followed by political and economic last. Men are privileged in religious and political activities; women are left with the burden of economic activity and the "worldly" aspects of life. Thai women have been prominent in trading and business for many decades (Bowie, 2008; Ockey, 1999). In 2011 women's representation in private sector trade was twice as high as in the public sector; 36% of business leaders registered with the Ministry of Commerce were women (UNWomen, 2013). Thai hierarchies of social participation have arguably impeded women's chances to participate in politics. Individual and group discussion with women village administrators and leaders confirmed the dominant perception of female leaders being inferior to male leaders. Women's lack of participation in public systems can be explained through three themes. First, it was difficult for women to apply or to become a committee member because of their household and often farming duties:

Question: Why are there not many women leaders here?

Woman1: [a female assistant of the village leader]:...a female leader has to work twice as hard as her male counterpart to prove herself so that she can do her job as well as the male leader. In order to achieve the same quality or amount of work, a man does 5 things and a woman needs to do 10 things. Thus we see more women become assistants of male bureaucrats than leaders.

Q: Is it that hard?

W2 [a member of a village women's group]: It is not just that...we women don't apply to be a committee member although we could. It is because we have too much work at home and sometimes in the farm too.

(Focus group discussion, Thailand, 15 May 2011)

Secondly, many public meetings were held at in the evening or night time, when women were mostly tied up with childcare and household duties:

...in our society, meetings are held at night time. The village head should be a man because he can work at night. When there's a ceremony at night time, the village head makes sure about the safety and security of the ceremony.

(a male member of village committee, interview, Thailand, 8 August 2011)

Thirdly, although women welcomed the chance to be members of a village committee, they lacked the confidence to speak up in a male-dominated meeting. Male leaders are favored over female leaders. *Kamnan* or subdistrict head and village heads are usually males.

If a woman participates in the committee, she can only present...that's all she can do. But sometimes she might also want to share her ideas and give out her opinions...but they were not confident. I want to see more women participating in management... right now most of them were men. Although women don't have as

much energy as men or they are not as physically strong as men, but sometimes women have better ideas than men.

(a female community leader, focus group discussion, Thailand, September 2011)

A group discussion with village administrators further confirmed that women tended to choose men as leaders because they believed that public leadership roles are more suitable for men than women. The municipality also trusted men more than women in these roles. These social preferences regarding formal leadership at the municipal and village levels, however, might also work to women's benefit by allowing them to avoid time-consuming public meetings and to focus on managing their already heavy work burden.

### *Gender Inequality in Local Water Governance*

The predominance of male leadership in water governance and expert sectors, and the subsequent gender inequalities, trickle down in the micro-politics of local water management at the municipal and village level (Ongsakul et al., 2012). Results of this study suggest that both women and men villagers were perceptive of domestic tensions in water resource management due to the different roles and responsibilities women and men have in their society. In this study, a local municipality which was dominated by men, they claimed higher authority and power over local water resource management. The management of the tap water sector, water treatment and water infrastructure are the responsibility of municipal administrators, while the *kamnan* or the village heads are assigned to look after the safety of the villagers. All of these leaders were males:

The fact of decentralization is the village committee which includes the kamnan, the village heads and their assistants are responsible for keeping peace and security in the village; keeping drugs away and other things. Those for public use...tap water; road construction is our local administrators' job. Government budget is provided to the municipality and local administrators. It's not right to have the village head working on these...we are the ones in charge. That's not easy. If a kamnan wants to manage the tap water but they don't have the money? They can but it is not good enough. They (only) can manage 100 000–200 000 Thai baht [US \$6600] (at the most) but often we need millions of baths to solve a water problem.

(a male municipality leader, interview, Thailand, 12 August 2011)

Unfortunately the attitudes of local administrators in water management are shortsighted as they failed to acknowledge the villagers' skills, abilities, and local leadership networks in managing local water structures and resources. On a few occasions, villagers with support from village leaders had been very proactive in fixing local water problems, which may have taken longer to be fixed had it involved the municipality:

When water problems occur...we are working together to fix the problems. When villagers see there is a problem, the ones they can rely are our men...broken pipes and other problems with pipes. The village head man will lead the villagers to fix it. He has someone to contact and he gets a car from the municipality. Women are not as good (physically stronger) than men...but women can do this sort of

contacting officials...the things that are difficult (for women to do) are the fixing things.

(a male villager, interview, Thailand, 18 August 2011)

This suggests that community members are resourceful in solving local water problems and that the municipality has failed to acknowledge it. Community agencies, networks and capabilities are essential to support integrated water resource management, and this fact should not be ignored. This study noted that tensions in local water management were driven by failure to accommodate a more flexible and gender-sensitive approach in local water governance across municipality and local village systems. While the municipality claimed their rights to water management over the villagers, male villagers then challenged women's capacities and participation in local water management. Women were placed at the bottom of a hierarchy of local water authority and thus they continued to be marginalized.

## **Discussion**

Disregarding the effort to promote an integrated water resources management (IWRM) system, the national and local water bureaucracies in Thailand are still very much needs-driven, male-dominated and engineering-based. Results of this study concur with previous studies examining women's participation in Thailand's water resource management (Ongsakul et al., 2012; Bernadette P Resurreccion, 2008). Women's central role in water security and women's roles as the primary water consumers are overlooked by dominating patriarchal norms in water institutions. Women are perceived as less competent, having no technical skills and as being inferior leaders in water governance. The predominance of male engineers, experts and technocrats further imbalances gender inequalities in accessing public water and services (Ongsakul et al., 2012).

This study showed that women, due to segregated social norms, had close proximity not only to water, but also to fields and farms. Women have great interest in domestic water for their wellbeing and the wellbeing of other family members. An inequality in water usage is based on interdependent family relationships, and often it requires practical common sense to understand it. Yet it is still a product of segregation of roles between men and women. Lacking access to safe water and clean sanitation places enormous burden on women's time, energy, and identity (Bouwer, 2006; Ghosh, 2007; Guslits & Phartiyal, 2010). Lacking access to water can also potentially threaten women's primary identity as a home-maker.

This study concurs with the finding of Ongsakul et al. (2012) who noted a strong domination of masculine traditions in the Thailand bureaucracy within the water sector. As such Thailand's Royal Irrigation Department (RID) has always been dominated by large groups of male engineers, and over time its members have become most important experts and agents within the water organization. This has reproduced an organizational culture of male-oriented values, standards and performance in other water departments. The domination of male bureaucracies has trickled down to the village water governance, in which male agencies and opinions are considered superior to women's concerns over household water. Women's voices and participation in local water structures continued to be marginalised.

This study also noted that women were active agents of domestic water management. Women have been at the forefront of solving local water problems utilizing their informal social support networks and connections. Indeed, women within their domestic constraints were able to

proactively rectify domestic water problems outside the formal male-dominated structure. This concurs with the finding of Resurreccion et al. (2010) who argued that we can only promote women's participation in the decision-making once we acknowledge the broader social contexts, connection, power and negotiation that play in women's social realities. The practice of matrilineal marriage in Thai society is in fact making Thai women 'invisibly strong' politically and economically in their society. In Northeast Thailand, women also play an important role in household management. Daughters are generally preferred over sons, and they receive the advantage in terms of property rights and inherit part of a family land. Sons usually inherit cattle or buffaloes or other mobile capital. After marriage, usually couples will move in with the wives' parents, and women therefore are able to maintain close relationships with each other to strengthen the matrilineal kinship. The dominant patriarchal political structure and the Buddhist teachings however subvert the potential of matrilineal norms. Hence, women's hesitation to participate in the public domain is not a reflection of women's inferiority or lack of confidence. It could be that women were not comfortable with the patriarchal system embedded in the government and leaderships systems (Bowie, 2008; Ockey, 1999) or that women within their social constraints used a 'deliberate' strategy to elect male leaders to avoid time-consuming meetings that are unsupportive of women's circumstances (Cleaver & Hamada, 2010). At the same time, Buddhist dogmas, rituals, culture and dhamma teachings shape the fundamental nature of reality of men and women (Keyes, 1984).

This study found that municipal approaches to water governance were narrow, focusing on male technocrats and experts and the service delivery paradigm (i.e. water committee, technologies and water tariffs) and were not supportive of achieving more gender equitable outcomes. Again, local water structures and decision-making need not only understand the ways resources are allocated through law, policies and legislation or the mechanism of the resource allocation, but also the roles that different community segments play in influencing water outcomes that are gender equitable (Cleaver & Hamada, 2010).

Women in this study were placed at the lowest position in the hierarchical water order. For the transformation from a male-dominated to more gender equitable policy and practice, there needs to be change taking place at all levels. The national water bureaucracy needs to challenge existing traditional water governance and truly move toward more participatory practices that involve gender mainstreaming policies and programs.

The micro-politics of water management at the village level have disregarded the local practice and local water agencies and overlooked women's social capital. Women villagers in this study had indeed been eminent agents in solving water problems at local levels. The development in water leadership and community water agencies at the village level needs to proactively engage with the social realities of the villagers. The community needs to be mobilized and to work together to develop a more 'flexible' mechanism to utilize their resources, negotiate priorities across different interest groups with the interest of promoting equity. Once again, water is a basic human right and access to adequate quantity and quality of clean water needs to be guaranteed for all. Women's central roles in water consumption, management, and water conservation are present. Future water security cannot afford to continue ignoring this reality. This calls for serious reforms towards a more participatory and flexible bureaucracy which include the introduction of highly focused and distinctive gender policies in both the traditional and new generation water agencies (i.e. Royal Irrigation Department/IRD and Water Resource Department/WRD) in Thailand. Gender-sensitive policies need to address gender differences in water resource management and provide guidelines for the development of gender-

responsive capacity building programs for key decision makers, to gradually increase the number of gender-sensitive staff within the water bureaucracy. Changes in a more gender-responsive water management also need to shift from 'techno-centric' and 'irrigation-centric' perspectives toward a more socially-responsive, integrated and participatory approach encompassing gender equality and women's participation. Women's interests, voices and participation in domestic water management need also to be facilitated at the community level. Likewise, local water-user-groups need to be more flexible and informal, and proactively removing barriers for female farmers or female water-user-groups in participating. Following Ongsakul and colleagues (2012), there is much to be done and that can be done in mainstreaming gender equality inside the water sectors in Thailand; changes, however, need to co-evolve with major reforms in broader fields of the behaviour of historically conventional state bureaucracy in Thailand.

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