By Tihana Stojsavljevic

Frank Batten School of Leadership and Public Policy

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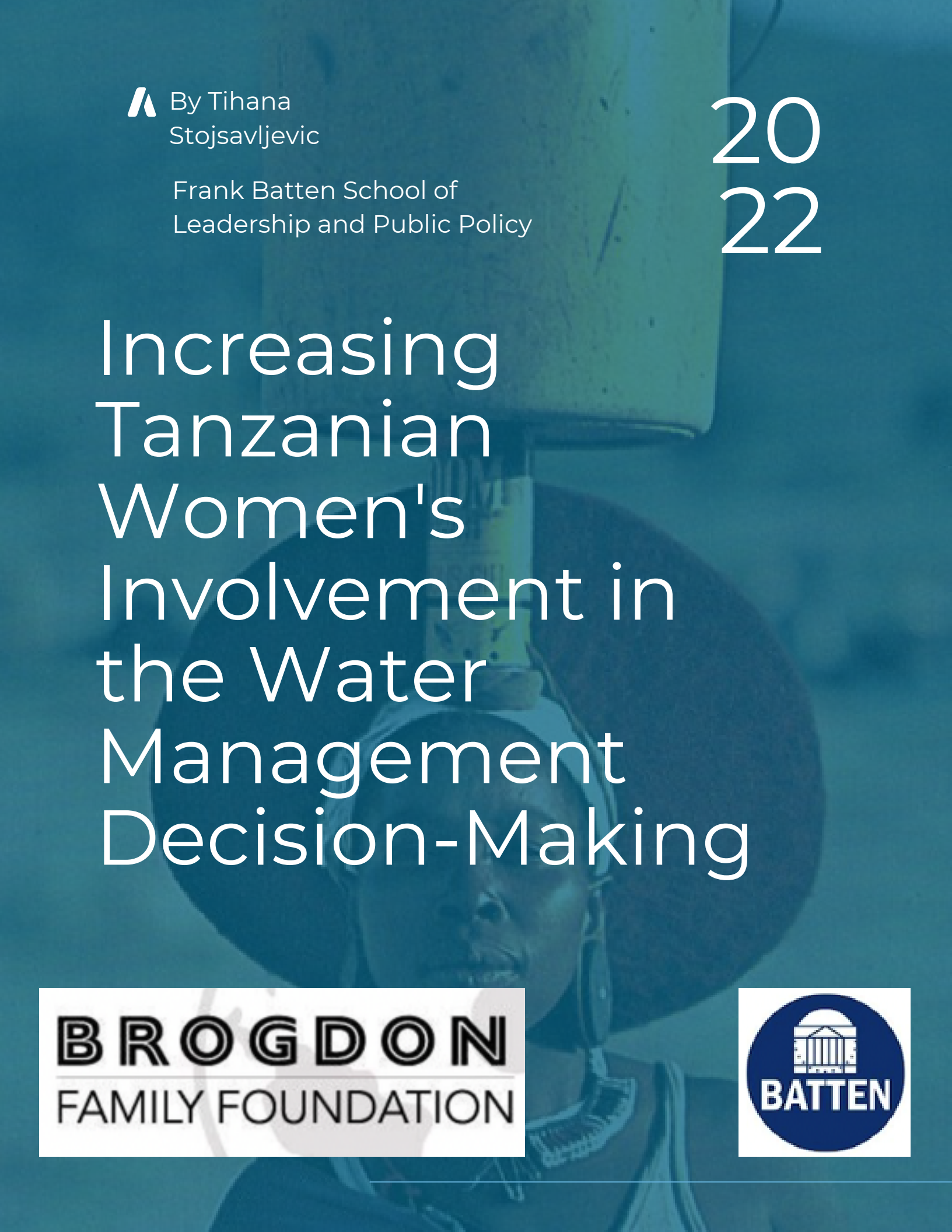
Increasing Tanzanian Women's Involvement in the Water Management Decision-Making



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“Water is Life and Sanitation is Dignity, the involvement of women in the sector is therefore important in accumulating considerable knowledge about water resources management, including water consumption, conservation, quality and storage methods. However, efforts geared towards improving the management of water as a scarce resource and extending access to safe drinking water and adequate sanitation often overshadow the central role of women in water management.”

Nomvula Mokonyane, Minister of Water and Sanitation, South Africa Gender, and Water Policies in Africa: Synthesis Report (2015)

“If one man can destroy everything, why can’t one girl change it?”

Malala Yousafzai, I Am Malala: The Girl Who Stood Up for Education and Was Shot by the Taliban

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“Women belong in all places where decisions are being made. ... It shouldn’t be that women are the exception.”
Ruth Bader Ginsburg

“The power to question is the basis of all human progress.”
Indira Gandhi, First Female Prime Minister of India

Figure 1: Map of Tanzania, United Nations Department of Peacekeeping Operations

Table of Contents

Table of Contents

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Client Overview

The Brogdon Family Foundation strives to create a more equitable world by empowering children, families, and communities to reach their full potential and thrive. The Brogdon Family Foundation believes that we all share basic human and civil rights. The Foundation is a nonprofit corporation operating through a fiscal sponsorship with Players Philanthropy Fund, a Maryland charitable trust recognized by IRS as a tax-exempt public charity under section 501(c)(3) of the Internal Revenue Code. All contributions to the Brogdon Family Foundation are tax-deductible to the fullest extent of the law.

The mission of the Brogdon Family Foundation focuses on the access to clean water and quality education as the fundamental piece to achieving equality for all people. The organization includes two major initiatives: Hoops4Humanity, and the JHA Education Project.

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Disclaimer

The author conducted this study as part of the professional education at the Frank Batten School of Leadership and Public policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgements and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

Honor Pledge

“On my honor, as a University of Virginia student, I have neither given nor received unauthorized aid on this assignment.”
Tihana Stojsavljević

ACRONYMS

ADB – Asian Development Bank
AFD – Action for Development
AMREF – African Medical and Research Foundation
CARE – Cooperative for Assistance and Relief Everywhere
CEDAW – Committee on the Elimination of Discrimination against Women
DANIDA – Danish International Development Agency
DFID – Department of Foreign and International Development
DWSSs – domestic water supply services
GELD – Gender Equitable Local Development
GIZ – Deutsche Gesellschaft fur Internationale Zusammenarbeit
IUCN – International Union for the Conservation of Nature
IWRM – integrated water resources management
LVIA – Lay Volunteers International Association
MCC – The Millennium Challenge Corporation
NAWAPO – National Water Policy
OXFAM – Oxford Committee for Famine Relief
PPP – Public-Private Partnership
SIDA – Swedish International Development Cooperation Agency
TCRS – The Center for Responsible Seafood
UNCDF– United Nations Capital Development Fund
UNICEF – United Nations Children's Fund
USAID – The United States Agency for International Development
VWC – Village Water Committee
WASH – Water, sanitation, and hygiene
WRM – Water resources Management

Table of Figures

Executive Summary

One of the undying issues in global development is the problem of access to clean-drinking water in developing nations, specifically- Tanzania. There is an ongoing need for the new approaches to make sure that rural and peri-urban communities have safe and reliable water supplies. The relevance of the community engagement is the key to ensuring the water sustainability. This involves the participation of all relevant stakeholders in determining the way water issues are dealt with in communities on a local level. Historically, there has been limited inclusion of Tanzanian women in dialogues and water management activities. However, with growth in water scarcity, there has been the raising urgency of creating and implementing a strategy to include women.

Inclusion of women in water management decision-making is one of the critical steps in order to ensure the sustainable water supply in rural communities of Tanzania. When women are formally and meaningfully included in the water management process, the project is more likely to last, and the water is more likely to be equitable distributed, even in times of water scarcity. In Tanzania, as well as other Sub-Saharan African countries, women are in charge of bringing water to their families.

As primary providers, managers, and users of water, women are often in an ideal spot to help drive productive change in the design and maintenance of water systems, water distribution, and policymaking (Thompson et Al.).

Bearing in mind the specific mandate and tools of operation, the Brogdon Family Foundation has the opportunity to lead the process for women's inclusion in the water management planning.

This APP uses three criteria to evaluate each alternative: Operational Feasibility, Cost, and Effectiveness.

This APP evaluates three alternatives:

1. Status Quo
2. Stakeholder Informing Process
3. Assembling Local Workshops

After evaluating each of these options, this APP recommends supporting Stakeholder Informing Process.

This alternative will be equally costly as the other two proposed alternatives; however, it will be the most operationally feasible in supporting women's direct involvement in the water management planning process. Through these alternatives, the Brogdon Family Foundation can also provide an opportunity for women to be as public as they would like with their participation in the decision-making process. Moreover, it is important to mention that this alternative will be effective, as it helps instigate and support long-term support of the water management process in rural Tanzania while amplifying Tanzanian women's voices.

The Problem

The climate crisis and the global COVID-19 pandemic have accelerated the urgency of providing safe drinking water services across the globe, especially in rural communities of Sub-Saharan Africa. The progress to safe drinking water is off-track with uncertain and limited data on the extent and performance of rural water service providers. Billions of people's lives and livelihoods in rural areas are less secure and their futures are increasingly uncertain due to water scarcity.

The latest global data shows the world is 'off-track' to meet the target of basic water services outside the home within a 30-minute round trip (Nilsson et. Al.). Currently, over two billion people lack the higher standard of safely managed water, which is on-site, free of contamination and available on demand.

Too many women and girls carry the burden of providing water for their families in rural and peri-urban Tanzania by walking from 30 minutes to 8 hours roundtrip, yet they are excluded or overlooked from the water management planning which harms the water sustainability in affected areas.

For women, the water crisis is personal (water.org). They are responsible for finding a resource for their family's needs to survive – for drinking, cooking, sanitation, and hygiene. Women may stand in line and wait for water, or they can walk long distances to collect the water, or even may pay exorbitant amounts of money to secure the water. In their efforts to get water for their families, they often face an impossible choice: certain death without water, or possible death due to illness from dirty water (water.org).

Today, women around the world will spend a collective 200 million hours collecting water. In addition to the time spent collecting water, millions of women may also spend significant amounts of time finding a place to go get the water. This makes up an additional 266 million hours of time each day lost because they have no toilet at home (water.org). Therefore, the crucial role women play in managing and safeguarding water at the domestic and community level, has long been unrecognized. Women and girls bear the brunt of collecting water – often from long distances and in harsh conditions – and usually bear responsibility for household hygiene and sanitation needs (WORLD BANK). Women are mostly absent as actors in managing water resources and water infrastructure, which presents both a challenge and an untapped opportunity the world over (WORLD BANK).

Background

International Efforts and the Role of Women in Water Management

In January of 1992, five hundred governmental and non-governmental water experts gathered in Dublin, Ireland at the International Conference on Water and Environment in order to discuss the future of global water governance during a process of climate change (IUCN, 2021). The guiding principles that emerged from the International Conference on Water and Environment, recognized the essential role of women in water management. Specifically, Principle 3 of the Dublin Statement established that "women play a central part in the provision, management and safeguarding of water", and therefore, positive policies need to be adopted not only to address the specific needs of women with regard to water but also to empower them to participate "at all levels in water resources programs, including decision-making and implementation" (IUCN, 2021). The statement from the international community acknowledged that although women were and are still today the primary provider of water resources in households across the globe, they are rarely involved in making decisions about the management of these water resources.

Thirty years later, the world is still far from achieving gender equity in water and sanitation (IUCN, 2021). The challenges that women are facing then with regard to water use, collection and management are now exacerbated by the catastrophic consequences of climate change. According to the United Nations Women study based on data from 61 countries, in 80% of water-deprived households, women and girls carry the burden of water collection. Water, sanitation, and hygiene (WASH) are essential to the fulfilment of women's rights as well as their economic and social development. Ensuring safe and widespread access to WASH for women and girls contributes to gender equality and their inclusion in society (IUCN, 2021). This is also critical when talking about menstrual hygiene management, which still carries significant stigma and is considered taboo in many areas across the globe (IUCN, 2021). Accordingly, until recently, menstrual hygiene was entirely overlooked in sanitation and policies programming, further excluding women and girls from public life (IUCN, 2021). In many cases, it means that, during this time, women and girls were forced to miss school or miss out on a day's income, and stay at home (IUCN, 2021).

Women exemplify a substantial piece of the stakeholders involved in everyday water use and management, but as of 2014, made up less than 17% of the WASH labor force in developing countries. The underrepresentation of women in technical jobs and leadership roles in the WASH sector can be due to cultural barriers, but also the fact that they are less likely to own the land where water springs from, can in fact hinder the efficiency of water management (IUCN, 2021). In fact, a growing amount of evidence shows that involving both women and men can "increase project effectiveness" and "improve the likelihood of sustainability", according to a UNDP study of 44 water schemes in Asia and Africa (IUCN, 2021).

At the national level, women can lead towards more inclusive water and sanitation strategies that integrate women's concerns. Overall, to fully understand the gender roles in water use and management and the challenges that women and girls face with regard to access to water and safe sanitation, it is essential to collect more and better data that is disaggregated by sex and takes into account the intersectionality with other factors (such as ethnicity, wealth, or class) that may also affect access to WASH (IUCN, 2021).

Gender Equality and Inclusion in Water Management: Why it Matters?

There is an ongoing need to include all parts of community in water resources management (WRM) and sectoral water use (including water, sanitation, and hygiene [WASH]) programs and initiatives. If all the segments of population are not included, the projects are very likely to fail (Grant, 2017). Without carefully taking into consideration the diverse needs and practices of a community, it is unlikely that results will be sustainable, and deliver the human development and economic outcomes intended originally (Grant, 2017). Inclusive water management, on the other hand, has the potential to decrease existing inequalities, increase cost–benefit ratios, uphold human rights obligations, and improve program sustainability (Grant, 2017).

Even though Principle 3 of the Dublin Principles acknowledges female roles and the need for increasing equality in water management practices, thirty years later, there is still inequality within practice. Water management projects can have a significant positive impact on women and marginalized people if well designed, but also have the potential to exacerbate existing inequalities and adversely impact women's roles and position within home and community unless specific and well-targeted measures are put in place (Grant, 2017). Therefore, developing appropriate governance frameworks and empowering communities to contribute to and make decisions about water management problems that can affect them is the key to achieving this.

Women in Water Committees

In Tanzania, as other places in Sub-Saharan Africa, women rarely have a voice in water supply and management schemes (UN Women, 2013). Instead, they take on an unequal share of domestic tasks within their households and spend a staggering amount of time fetching water from distant, disease-prone, and often dangerous places. Spending most of their time on domestic chores, women often forego a formal education, which results in even fewer opportunities for income-generating activities outside the home – creating a downward spiral known as 'time poverty'.

Amidst concerns of a growing water crisis which leaves women particularly vulnerable, UN Women and the UN Capital Development Fund (UNCDF) are implementing the Gender Equitable Local Development (GELD) pilot program in partnership with local government authorities to support equitable planning and budgeting with the aim of improved gender-responsive public goods and service delivery (UN Women, 2013). An example is the Municipal Council of Morogoro, city in Tanzania, which invited women to identify Kingolwira's most pressing needs through a series of community consultations. Drawing on women's traditional duties as the main water collectors, the discussions resulted in the formation of a water management committee consisting of five women and five men (UN Women, 2013). The meetings are being held weekly, and the women of the committee knew that they not only had to bring the source of water closer to their community, but also make sure the water would be clean, safe, and affordable (UN Women, 2013).

In a community-wide effort and with the support of local authorities, they decided to construct a small dam in the lower slopes of the Uluguru Mountains, from where the water would be piped into a nearby tank for further treatment (UN Women, 2013). As a result, seven water kiosks emerged, where safe, treated water is stored in a tank and distributed across the community. After water became accessible from every street in Kingolwira, the village has undergone a remarkable transformation: the price of ten jerry cans needed per family on a daily basis decreased from 5,000 TSZ (3 USD) to 250 TSZ (0.15 USD), while the appointed kiosk supervisors ensured an equitable distribution of water (UN Women, 2013).

The National Water Policy (henceforth NAWAPO) in Tanzania acknowledges the key roles and practical interest of women in rural water provision (Mandara et. Al., 2017). A quota system was adopted to ensure women's representation in the formal water management structures at village level, particularly in the Village Council and Water Committees. The Village Water Committee (VWC) is responsible for managing village water projects on behalf of the village and reports to the Village Council. Although the general policy describes women's representation in these structures, it has to be implemented in areas with diverse customs, norms, traditions and beliefs relating to gender (Mandara et. Al., 2017).

In many countries, having women in local water management bodies challenges the pervasive socio-cultural notion that such bodies are a public, hence male domain, and use of domestic water is a private, female matter (Mandara et. Al., 2017). Therefore, this can be explained by traditional stereotypical notions which have a bearing on gender roles that govern the division of labor and on how men and women relate in the private and public arenas. Given that "women have often been associated with the private sphere and men with the public one", incorporation of women in public decision-making spaces does not ensure that their influence will match that of men (Mandara et. Al., 2017).

The missing link of the background stated above is between the policy mechanism of the quota system and the factors that restrict women's participation in domestic governance at village level. This poses an important question whether women's representation in these structures will truly bring about positive change for women and water sustainability itself (Mandara et. Al., 2017).

Women's practical & strategic gender needs

In order to understand the climate between different stakeholders that influence the water management practices in Tanzania, it is important to include the conceptual framework that focuses on women's practical and strategic gender needs. The exchange between the needs of women and what the formal institutions can offer them.

The framework combines multiple concepts where a distinction is made between women's practical and strategic gender needs (Mandara et. Al., 2017). Practical gender needs are those that arise from the concrete conditions women experience and are a response to immediate necessities that women identify within a specific context (Mandara et. Al., 2017). On the other hand, strategic gender needs originate from women's ideological subordination to men, and they vary depending on the cultural and socio-political context within which they are formulated (Mandara et. Al., 2017).

Women's representation and participation in the local decision-making spaces to affect water governance relate to women's strategic gender needs (Mandara et. Al., 2017). In rural areas, there is a mismatch between women's domestic water needs and the governance of domestic water services, because of women's underrepresentation in the public domain where strategic decisions are made (Mandara et. Al., 2017). This leads to women's practical gender needs like domestic water being insufficiently considered; the needs are regarded as women's business that belong to private sphere, hence not of public interest (Mandara et. Al., 2017).

Combining the concepts of practical and strategic gender needs with the analysis of the interfaces between the quota system and the informal institutions that determine women's performance in the local decision-making spaces, forms the basis of the conceptual framework (see Figure 2) (Mandara et. Al., 2017).

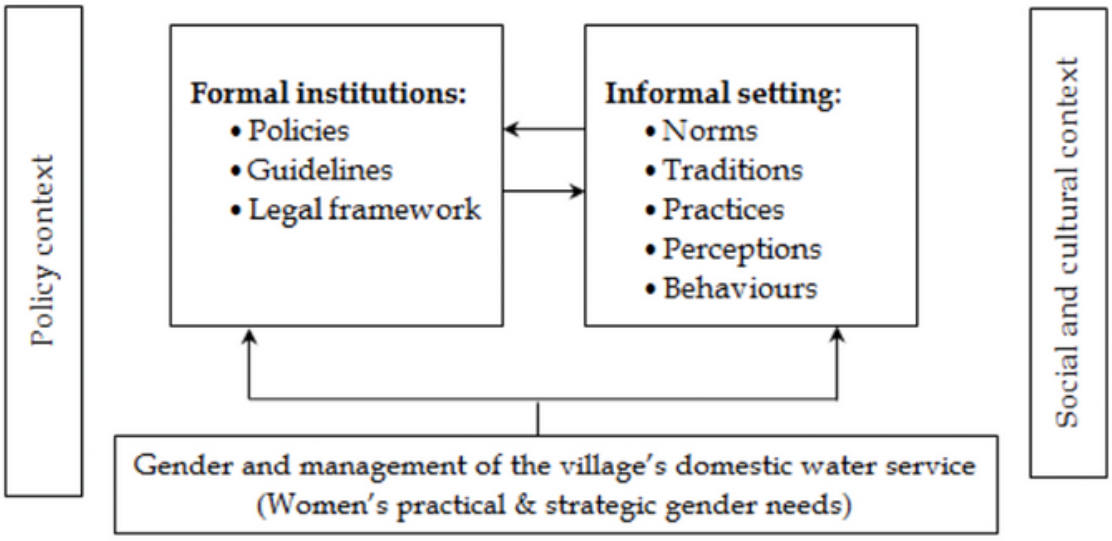

Figure 2: A Conceptual framework for understanding women's involvement in management of village water service and its formal – informal intersections, Water Alternatives – Mandara et. Al. 2017

Figure 2 displays the formal and informal structures related to women's involvement in village-level domestic water management, which are connected through the linkages between the policy frameworks that create the 'invited' decision-making spaces and the social-cultural environment that dictates access and performance in those spaces (Mandara et. Al., 2017). This interconnection implies that changes in the formal structures have a bearing on the informal structures and vice versa (Mandara et. Al., 2017).

The participation in village-level governmental bodies, including the Village Water Committees, and in specific activities relating to water projects, putting the initial capital and maintenance of water facilities for example (Mandara et. Al., 2017). There, we witness women's participation in the latter type of activities as necessary involvement to safeguard their interests in accessible and safe domestic water (Mandara et. Al., 2017). The typology of different levels of participation differentiates the passive participation, i.e., being informed of decisions at meetings, to interactive participation, where one can have a voice on the decision making and/or hold a position in local decision-making (Mandara et. Al., 2017). Gender relations are the socially constructed practices that manifest themselves in the division of labor, roles, responsibilities, and resources between men and women, based on attitudes, perceptions, and behavioral patterns (Mandara et. Al., 2017).

Water policy interventions have been designed and implemented within local community contexts. These include national policy frameworks and governmental programs as well as policies designed by the international development agencies such as UNICEF, SIDA, and DFID, the major supporters in the developing world (Singh, 2006). The non-governmental (NGO) sector, too, has been active by implementing specific types of interventions within selected areas.

Several studies have conducted on the impact of such interventions and many of these attempts to illustrate that the interventions at various levels have been effective in bringing about a substantial change in the role of women in water management with economic and health benefits (Singh, 2006). In general, these studies identify the hardships women encounter while fetching water, denial of equal water rights and resources within their societies, or they have lacked a forum or mechanism to have their voices heard in the water management decision-making (Singh, 2006).

Due to anthropological theory, and gender theory, the underlying universalistic claims about transformed roles of women in water management can be unfolded by considering the importance of 'context' behind the gender ideologies. Factors of age and generation are also very important in providing specific differentiation among women (Singh, 2006).

The Business Case for Inclusion

There are significant incentives for governments, organizations, and other stakeholders to achieve an inclusive approach to water management, including economic benefits, according to the Action Piece by Melita Grant (2017). For example, the access to water resources and safely managed water and sanitation underpins economic resilience, given that significant losses are incurred through reduced productive time, agricultural production, poor nutrition, healthcare costs, and mortality when safely managed water and sanitation services are not available (Grant, 2017). For example, safely handled water management and sanitation practices can provide an annual economic profit of around US$3 and US$6 for every dollar invested (Grant, 2017).

The private sector is increasingly engaging in water stewardship initiatives, supported by the Water CEO Mandate, UN Global Compact, and others (Grant, 2017). The stewardship agenda can be a good entry point for considering broader, water-related social issues such as inclusion (Grant, 2017). Many Efforts are under way to support the hydropower industry to take gender equality into account in planning processes in order to help companies (and government sponsors) to meet their responsibility to protect human rights and minimize harm caused by dam developments (Grant, 2017). Therefore, the economic gains are just one of the aspects related to increasing equality in societies, and more specifically in water resources management and sectoral water uses (including WASH). Human rights obligations, value for money (maximizing results), and legal elements of the business care are equally if not even more important (Grant, 2017).

Impact Section

Tanzania's Water and Sanitation

Even though our understanding of water resource problems has grown in recent years, human ability to improve decision-making is still very limited (Kotir, Brown, Marshall & Johnstone, 2016). Effective and sustainable management of water resources is the key for ensuring sustainable development. On the other hand, efforts of water resource management seem to demonstrate inappropriate practices, especially when compared to water consumption trends in developing countries in general, and sub-Saharan Africa in particular (Benova, Cumming, Gordon, Magoma & Campbell, 2014). Being a major and vital ingredient to humankind, water resources influence all sectors of society. However, there have been increased problems over time that subject water resources to a number of crises and pressures.

It is evident that poor water resources management have stimulated and sustained numerous issues related to health, socio-economic and environmental factors, which need to be solved (Benova, Cumming, Gordon, Magoma & Campbell, 2014). These issues are accelerated and magnified by the countries', communities', and individuals' struggles for economic and social development as many development initiatives are affected by water availability and vice versa (Benova, Cumming, Gordon, Magoma & Campbell, 2014). Therefore, an integrated water resources management (IWRM), is a process, a change, and an approach that mainstream water resource use and management into the national economic in an equitable manner without compromising the sustainability of vital ecosystems (Kotir, Brown, Marshall & Johnstone, 2016).

INTEGRATING GENDER IN THE PPP LEGAL AND REGULATORY FRAMEWORK

The public-private partnership (PPP) stands for the partnership between an agency of the government and the private sector in the delivery of goods and services to the public. Therefore, its legal branch is detrimental factor to building a framework where gender issues can be addressed to narrow gaps between men and women ("PUBLIC-PRIVATE-PARTNERSHIP LEGAL RESOURCE CENTER", 2022). The PPP legal framework consists of all laws and regulations that control whether and how PPPs can be implemented in a specific country.

1. International Framework

The Sustainable Development Goals are a set of 17 goals, including 169 targets adopted by world leaders in September 2015, and need to be considered when developing PPP frameworks and projects. Sustainable Development Goal 5 aims to achieve gender equality and empower all women and girls.

Convention on the Elimination of All Forms of Discrimination against Women of 18 December 1979 (CEDAW) has been ratified by 189 states. It includes an obligation to eliminate discrimination against women and to promote gender equality and women's empowerment.

2.Gender-Responsive PPP Laws, Regulations, and Policies

One of the best practices to ensure that gender is considered when PPP projects are planned is to integrate minimum standards into the respective PPP policies and legislation. Some countries have developed PPP draft policies incorporating gender standards across the PPP project cycle or included different aspects for gender equality and women's empowerment in their legal PPP framework.

·In the Lao People's Democratic Republic (LAO PDR) Decree on Public-Private Partnerships (draft, version 7 of June 2015) – The draft Decree includes gender considerations. One of the guiding principles is to ensure due diligence to mitigate negative impacts on women and children and maximize their benefit within the control of the PPPs and their implementation.

·National Government Public-Private Partnership Manual, National Government of the Philippines, draft version as of 4 August 2014 – Annex 4 of the manual sets out guidelines and procedures for integrating gender integration strategies and guidelines of other international lending institutions, such as the Asian Development Bank (ADB) or the World Bank. As part of the social assessment, PPP transactions are required to undertake a gender-responsiveness analysis to ensure that the project considers and addresses the needs of both women and men, and that the decision-making process and subsequent implementation of the project puts high priority on gender equality goals. ("PUBLIC-PRIVATE-PARTNERSHIP LEGAL RESOURCE CENTER", 2022).

3 . Gender – Responsive Sectoral Guidelines, Policies and Legislation

Policies, legislation, and sectoral guidelines that are relevant for the development, structuring and implementation of PPP infrastructure projects relating to a specific sector (e.g., transport, water, or energy projects) are increasingly incorporating a gender perspective.

Some of the examples of legal restrictions that can disadvantage women to benefit equally from the services of PPP projects, limit the employment opportunities of women and restrict participation of women-owned small and medium enterprises (SMEs) in PPP projects are provisions that:

- Require documentation to access services
- Establish registration fees, user fees, or other financial requirements to access services
- Allocate rights or entitlements on a certain educational level, or on basic literacy or numeracy
- Require collateral to obtain credit
- Allow only male relatives to inherit land
- Allow only male household members to own and transfer land
- Restrict married women from obtaining their own tax identification numbers
- Preclude women from obtaining loans without the consent or guarantee of their husband or a male relative.

Sources: Guidelines and Checklists for Gender in Public-Private Partnerships in Lao PDR (Draft); Gender, Law and Policy in ADB Operations: A Toolkit; Women, Business and the Law.

Unemployment

In general, 64% mainland Tanzanians are poor and 31.3% live in extreme poverty, according to the Multidimensional Poverty Index (UNDP and URT, 2015). Poverty is worse in rural areas, where 73% of the population live (UNDP and URT, 2015). Moreover, population growth is fastest in the rural areas. At independence in 1961, Tanzania had a population of 10.1 million and, in 2014, thanks to a population growth rate of 2.8 and 4.95 children per woman the total population had grown to almost 50 million (Index Mundi, 2014) (Van Koppen, Tarimo, Van Eeden, Vanzungu & Sumuni, 2016). In that period in time, Tanzania's rural population growth was three times as high as the growth of the urban population, despite the fact that there was a massive urbanization process happening (Van Koppen, Tarimo, Van Eeden, Vanzungu & Sumuni, 2016).

The IWRM affects most of the smallholder farmers' access to water which contributes directly to poverty alleviation and employment creation in a country where poverty and joblessness are high (Van Koppen, Tarimo, Van Eeden, Vanzungu & Sumuni, 2016). Around 1990s, there were both a government-led infrastructure development agenda and IWRM parts in place, which included a cost-recovery of state services aligning with the Structural Adjustment Programs, water management according to the dormant colonial water rights (permits) system (Van Koppen, Tarimo, Van Eeden, Vanzungu & Sumuni, 2016). Therefore, these practices became formalized in the National Water Policy from 2002, and in the Water Resources Management Act from 2009.

Unemployment is heavily driven by the lack of access to clean drinking water. United Nations estimated that three out of four jobs that make up the global workforce are either heavily or moderately dependent on water ("Water drives job creation and economic growth, says new UN report", 2021). This indicates that water shortages and problems of access to water and sanitation could limit economic growth and job creation in the coming decades ("Water drives job creation and economic growth, says new UN report", 2021). According to the UN, investment in small-scale projects providing access to safe water and basic sanitation in Africa could offer an estimated economic return of about US$28.4 billion a year, or nearly 5% of gross domestic product (GDP) of the continent. In order to visualize the magnitude of the effect, we can compare this to the United States, where such investments also seem to have a beneficial effect on employment. For example, every US$1 million invested in the country's traditional water supply and treatment infrastructure generates between 10 and 20 additional jobs. Meanwhile, the U.S. Department of Commerce's Bureau of Economic Analysis found that each job created in the local water and wastewater industry creates 3.68 indirect jobs in the national economy ("Water drives job creation and economic growth, says new UN report", 2021).

Sanitation and Hygiene in Rural areas

The National Household Budget Survey in 2007 reported that 90.4 % of households had a toilet in rural areas, but improved toilets were lower than urban area with only 2.2% of households having their personal ones and 1% with a flush toilet (Thomas, Holbro & Young, 2013). Therefore, the World Health Organization in 2008, estimated that the rural population having access to improved sanitation (including pit latrines with slab floor) was only 23%, according to the Ministry of Health and Social Welfare (Thomas, Holbro & Young, 2013). Moreover, Tanzania was also assessed at being in the establishment stage of rural sanitation provision in the country status overview. It was assessed that there has been a 2% decrease in sanitation coverage in rural areas between 1990 and 2008, according to the World Bank (Thomas, Holbro & Young, 2013).

In general, rural areas are estimated to be at 9.5% rate of having no toilet (Thomas, Holbro & Young, 2013). The proportion of people who practice open defecation in rural areas is very likely to vary between areas. An example from Kongwa District, open defecation was reported at a slightly higher rate (11.5%) by household surveyed (Thomas, Holbro & Young, 2013). When it comes to solid waste, a National Household Budget Survey estimated that 54.9% of households place their rubbish in a pit and burn it, while 42.8% threw it on the ground, according to Tanzania National Bureau of Statistics.

Community Engagement

To balance the needs of the local community members and build resiliency in the places on which utilities depends, water professionals are turning to effective community engagement, sustainability, and environmental justice strategies (Ellis 2018). Community members expect to be invited and involved in the utility decision-making processes that impact them and to receive the benefits from infrastructure investments (Ellis 2018). Therefore, water professionals are turning to the effective community engagement, sustainability, and environmental justice strategies. Some of the best practices to successfully leverage community engagement to garner public support include enhancing locations, promotion of sustainability and efficient management.

It is extremely important to take into consideration how one might impact local communities and the environment to benefit the community, course correct, when necessary, mitigate any potential harm, and make this practice the norm at every level of operation (Ellis 2018). Since no such study has been conducted in Tanzania, an example taken from the Dispensers for Safe Water program is helpful in determining the key to successful community buy-in. Dispensers for Safe Water program provides access to safe water to more than 4 million people- a vital service that every year prevents hundreds of thousands of cases of diarrhea, inducing waterborne diseases, a leading cause of child mortality (Plata & Hodges, 2021). A core component of the program is the network of over 54,000 community-elected volunteers known as promoters, a leadership role mostly held by women. In Malawi, over 80% of Dispensers for Safe Water programs are women; in Kenya over 70%.

Promoters are elected by their communities and are typically well-regarded by their neighbors, have spent most of their lives in the surrounding area, and take an active role in their communities (Plata & Hodges, 2021. Some of the duties of the promoters include teaching the community members how to properly use the dispensers and about the risks of consuming untreated water, stocking the dispensers with chlorine, and reporting to Evidence Action when the dispensers have been damaged or need maintenance. In the case of Tanzania, and this project, we would substitute dispensers with water-wells.

Criteria For Evaluation

This report assesses the viability of the outcome of each alternative based on three evaluative criteria – Operational Feasibility, Cost, and Effectiveness. Outcomes are assessed on a scale of Low/Moderate/High for each criterion, where High represents the strongest outcome for Feasibility, and Effectiveness. Low, on the other hand, is the strongest outcome for Cost (outcome where low cost is the most desirable).

	Low	Moderate	High
Operational Feasibility Effectiveness	Weakest Outcome	Moderate Outcome	Strongest Outcome
Cost	Strongest Outcome	Moderate Outcome	Weakest Outcome

For ease of comparing outcomes in the Outcomes Matrix section, the Low/Moderate/High rankings have been assigned underlying numeric values (1, 2, or 3), where a 1 corresponds with the weakest outcome and a 3 corresponds with the strongest outcome.

	Low	Moderate	High
Operational Feasibility Effectiveness	1	2	3
Cost	3	2	1

Operational Feasibility

Operational Feasibility will evaluate the ability to implement this program with current resources and within the existing timeline of the regulatory framework: are there any regulations, internal to the organization that need to be amended to allow the personnel to participate in workgroups that may be needed in the various sub-phases of the implementation. This criterion evaluates how "successful" an alternative and its outcome will be in truly addressing the problem definition and increasing female inclusion in decision-making process. Operational Feasibility will be measured across two categories: implementation and legality.

Effectiveness

The effectiveness criterion will consider the degree to which women are included in the formal process because of the alternative. The percentage of women as part of the formal council will be one metric to measure this criterion. The root of the problem is that women should be included in the decision-making regarding the water wells in Tanzania. Therefore, an effective alternative would lead to women being formally involved in those roles.

Moreover, the effectiveness criterion will also consider how the male counterparts are included and worked with to show the importance of meaningfully including women in the formal process of decision-making.

The effectiveness criterion should be measured high on the Outcomes Matrix Scale if the alternative would create a clear, uninterrupted path for Tanzanian women to formally participate in decision-making process.
The metrics of inclusion are following:

1. Fair treatment: rewarding and recognizing efforts of women to participate in the Water Council
2. Integrating difference: treating women equally as men
3. Decision-making valuing input from female stakeholders
4. Psychological safety: women feel invited to contribute and share ideas
5. Trust: honest and open communication between women and other stakeholders
6. Belonging: other stakeholders care deeply about issues affecting women regarding water and vice versa
7. Diversity: attendees at Water Council meetings are representative of those impacted by water scarcity. ("PUBLIC-PRIVATE-PARTNERSHIP LEGAL RESOURCE CENTER", 2022).

Cost
Cost evaluates the financial expenditures that the outcome of an alternative would require. The criterion assesses how directly (financial) costly the outcome of an alternative would be. The costs regarding the time and required labor have accordingly been omitted from the cost analysis. The cost criterion will record its strongest outcome while scoring low on the Outcomes Matrix Scale.

Alternatives

Alternative #1 - Status Quo

The first alternative is the status quo or maintaining The Brogdon Family Foundation activities regarding the community engagement into the well-building project. Status quo activities include the financial investment by the community – members must pay a fee of 1-3 cents per gallon of water. Moreover, The Brogdon Family Foundation organized a Water Council within each community they operate in. The funds collected by the community go towards the Water Council which then works on maintenance issues post one-year warranty period.

Engineers hired by the Brogdon Family Foundation train the local Water Council in minor repairs so that community members do not need to travel to large cities to ask for help with water wells. For about 40% of the time, the heads of the Water Council are women. Men often travel for work; therefore, women are put in position of power to manage the water wells. The implementation partner - World Serve International is a nonprofit organization, partner who hires local Tanzanians for all projects of the Brogdon Family Foundation regarding water management in Eastern Africa. This alternative is ongoing; The Brogdon Family Foundation will continue utilizing its existing tools and engaging in its current approach in water management projects, as well as assessing outcomes, on an annual basis.

Alternative #2 - Stakeholder informing process

This alternative proposes an increase of the role of women in planning the water management projects, it specifically addresses the quota of women on Water Councils and other steps in water management planning and practices. The planning of the project should include women since they are the key to a successful community engagement initiative and water sustainability.

Multinational Development Banks (MDBs), and bilateral and national development banks, and many other development organizations participate in financing and supporting infrastructure projects and programs that incorporate gender considerations ("PUBLIC-PRIVATE-PARTNERSHIP LEGAL RESOURCE CENTER", 2022). I am unaware of the process that happens on-ground for the Brogdon Family Foundation, therefore, these are some of the best practices from the literature that any NGO should be engaged in: detailed analysis of gender aspects during the preparation and appraisal stage (by collecting sex-disaggregated data, including women and men at an early stage in the community-wide consultations, and by incorporating gender aspects into the various analyses and assessments; Translation of the results in the design of projects and programs, e.g. by designing gender-responsive documents and contracts; and Utilization of meaningful performance indicators to monitor and evaluate actions designed to narrow gender gaps in water management practices ("PUBLIC-PRIVATE-PARTNERSHIP LEGAL RESOURCE CENTER", 2022).

This alternative is ongoing; the initiative would go into immediate effect and carry out regular activities of engagement. Outcomes should be assessed after the first five years of implementation and every two years after that. Local women should be in direct contact with engineers so they can participate in water management planning and decision-making. Some communities may have friction with their neighbors and women may be aware of it, therefore, creating one water well to serve them both, even though it may be the most cost-effective option, can still present troubles in the future.

Alternative #3 - Assembling local Workshops

The alternative no.3 would address the communication among communities and focus on reaching out to women and including them on workshop committees. This alternative seeks to create a strategy for local communities to have an enhanced and more consistent flow of project proposals and information within the Brogdon Family Foundation collaboration space while focusing on female inclusion and community needs. Assembling local workshops alternative would leverage the existing contact list of citizens to engage them in proactive outreach for potential opportunities in addition to creating and promoting knowledge regarding women in water management and water well maintenance practices. This alternative would address information transfer about the new water management practices and work on informing people regarding the new water well location and its maintenance. For example, a study from South Africa showed that only around 10 percent of people received drought news and information from extension officers, while around 70 percent used radio and television as the main source of information (Makaya et al., 2020). In Tanzania however, only 24 percent of people own a television (Faria, 2021), and 43 percent own a radio (Faria, 2021), compared to 80 percent of South Africans who listen to the radio daily (Bosch, 2022). Therefore, this alternative would address the lack of media available to transfer the information to Tanzanian citizens about water management and water availability nearby.

This strategy would involve the Brogdon Family Foundation and World Serve International who would organize the workshops, and regional stakeholders: teachers, engineers, volunteers, etc. who would help with the local community alignment. The strategy would be assessed annually; the workshop campaign will be happening for two weeks each year, focusing on the cultural climate of the community and its women, gathering all the information necessary regarding the water well maintenance. Regional leaders would be set in charge of information regarding water management, with a focus on the inclusion of local women in the process. It would take place in rural schools and community centers of rural Tanzania. This alternative would address the communication among communities and focus on both reaching out to women and including them on workshop committees.

ASSESSMENT OF ALTERNATIVES BY CRITERION

Alternative #1 - Status Quo

This alternative focuses on the continuation of the current trends to include women in the water management planning process. The alternative is ongoing, and it includes the efforts by both the Brogdon Family Foundation and their partner the World Serve International to actively engage the question of gender while organizing their projects.

STATUS QUO	***Operational Feasibility***	***Cost***	***Effectiveness***
Maintaining *the Brogdon Family Foundation* activities including the financial investment by the community and organization of *Water Council.*	1	$ 12,533.44 per site	2

Operational Feasibility,

Operational Feasibility is graded low since the Brogdon Family Foundation has room for growth to increase female involvement in the decision-making process regarding water management. There is no specific data regarding the percent of women being on water committees, however, the current estimate is about 40%, according to Kim Packett from the Chris Long Foundation.

Cost

The cost is calculated by adding the provided cost of the community impact assessment ($ 1,425.54) and community training ($ 2,375.90). The source of the information came from an interview with Kim Packett from the Chris Long Foundation. Administrative expenses, which include the cost of the Brogdon Family Foundation and World Serve International are $ 8,732. Therefore, the cost of the status quo is estimated to be USD 12,533.44.

Effectiveness

Effectiveness is a graded medium since the Foundation has room for growth to increase female involvement in the decision-making process regarding water management. This alternative is widely used across the NGO field regarding water management and global development practices.

Alternative #2 - Stakeholder informing process

This alternative focuses on increasing the role of women in the active planning and execution of the water management planning processes. The extent of the efforts for this alternative should be determined by the Brogdon Family Foundation. The strategy should be updated every two years and the timeline for this alternative would be immediate.

Stakeholder informing process	***Operational Feasibility***	***Cost***	***Effectiveness***
An increase in the role of women in planning the water management projects	2	$ 8,103.44 per site	3

Operational Feasibility

Alternative #2 would enable the Brogdon Family Foundation to participate in problem-solving of gender equity issues within rural Tanzania, by including more women on water committees. Since there is no specific data regarding the percentage of women, we can assume that the active pursuit and advocacy to raise female voices will help the equity issues, and therefore, improve water sustainability. This alternative would be relatively easy to implement since it would build upon the infrastructure already set in place by the Brogdon Family Foundation and the World Serve International.

Cost

The cost is calculated by adding the provided cost of the community impact assessment ($ 1,425.54) and community training ($ 2,375.90), and administrative expenses of $8,742. Moreover, the salary per week in Tanzania is calculated on a basis of 45 hours a week, or 6 working days per week, which is multiplied by two since the stakeholder informing process assessment will last for two weeks. ("Tanzania", 2022).

An average cost of the wage for two weeks of work (which is the duration of the assessment) is TZS 100,000.00, or approximately USD 43.02. We can estimate that the cost for hundred facilitators for the organization camps, data gathering, etc. would cost about USD 4,302 ("100,000 TZS to USD - Tanzanian Shillings to US Dollars Exchange Rate", 2022). To conduct the gender analysis to provide specific data, the Brogdon Family Foundation may need to engage with another partner to gather that information, which can lead to additional costs. Because these practices have not been implemented on a wide-enough scale, the cost is varied which does not allow us to provide specific data on the alternative.

Effectiveness

By following specific guidelines set in place by the Multinational Development Banks (MDBs), and many others, we can assume an increase in gender awareness and inclusion of women in water management practices.

Alternative #3 - Assembling local Workshops

This alternative would build on the existing infrastructure set by the Brogdon Family Foundation but would also enhance a more consistent flow of project proposals within the client's collaboration space to increase women's role in water management. The existing contact list of citizens gathered during the previous project planning would be leveraged for engaging them in active opportunities for creating and promoting knowledge regarding water management and well-maintenance.

Assembling Local Workshops	***Operational Feasibility***	***Cost***	***Effectiveness***
Leveraging existing contact list to assemble local workshops.	2	$ 8,884.68 per site	1

Operational Feasibility

This alternative would enable the Brogdon Family Foundation to increase the communication among the rural communities and ease the approach for the upcoming, future projects. Women would be hired as facilitators which would result in an increase in engagement Therefore, it scored a medium on the operational feasibility.

Cost

The cost is calculated by adding the expenses of the community impact assessment ($ 1,425.54) and community training ($ 2,375.90), The salary per week in Tanzania is calculated on a basis of 45 hours a week, or 6 working days per week ("Tanzania", 2022). For alternative no.3 we will need to calculate a

an average cost of the wage for two weeks of work (which is the duration of the assessment) is TZS 100,000.00, or approximately USD 43.02. We can estimate that the cost for hundred facilitators for the organization camps, data gathering, etc. would cost about USD 4,302 ("100,000 TZS to USD - Tanzanian Shillings to US Dollars Exchange Rate", 2022). We have to take into account the potential cost of spaces where the workshops would be attended, meaning that the community centers may need to be rented for two weeks. The cost of renting a space outside of the center outside of the center of Dar es Salaam is on average about TZS 1,816,393.43 which is about USD 781.24. Therefore, an overall estimate of the cost would be about USD 8,884.68.

Effectiveness

The effectiveness of this alternative scored low since it does not address the targeted issue of gender and female inclusion in the upcoming projects. Local workshops would help maintain a relationship with the community members and the Brogdon Family Foundation.

Recommendation

Based on the evaluative criteria, the Brogdon Family Foundation should first prioritize the stakeholder informing process (the alternative no. 2) and increase the role of women in active planning and execution of the water management planning processes. Following the specific guidelines by Multinational Development Banks (MDBs), bilateral and national development banks, and many other development organizations, a stakeholder informing process would be the best pathway for the increase of the role of women in water management practices. The guidelines are as follows:

1. Detailed analysis of gender aspects during the preparation and appraisal stage, e.g., by collecting sex-disaggregated data, including women and men at an early stage in the community-wide consultations, and by incorporating gender aspects into the various analyses and assessments.
2. Translation of the results in the design of projects and programs, e.g., by designing gender-responsive policies, bidding documents, and contracts.
3. Utilization of meaningful performance indicators to monitor and evaluate actions designed to narrow gender gaps.

While incorporating this avenue, the Brogdon Family Foundation should continue its current practices and use alternative no.2 as a tool for specific targeting of gender equity and female involvement.

An Evaluation of the Alternatives for the Brogdon Family Foundation

	Operational Feasibility	***Cost***	***Effectiveness***
STATUS QUO	2	$12,533.44 per site	1
Stakeholder informing process	2	$ 8,103.44 per site	3
Assembling Local Workshops	2	$ 8,884.68 per site	1

IMPLEMENTATION PLAN

To implement alternative no.2, the Brogdon Family Foundation and the World Serve International must increase their efforts to actively engage women in their water management planning. Both the Brogdon Family Foundation and the World Serve International should implement the quota on women engaged in water councils, after conducting an analysis focused on gender, which will help communicate and deliver an increase in women being on water councils.

Gender mainstreaming and women's participation does not show a record of great support within the Sub-Saharan region. Applying a legal and regulatory lens, findings revealed that gender mainstreaming and women's participation had not been decreed into the laws informing water resources management functions and programs (Adeoti, 2021). While walking to fetch the water, women face kidnapping, sexual assault, physical assault, and other threats, mostly presented by men. Women experience domestic violence if they are unable to fulfill their household obligations (Adeoti, 2021). Insufficient water causes intimate partner violence (e.g., verbal or physical abuse) as a result of insufficient water (Adeoti, 2021), therefore, we can assume that the focus on the increase of women in leadership roles will increase the dissatisfaction by men.

Another important factor to consider is the impact of the COVID-19 pandemic on the role of women across the globe.

The evidence shows that the pandemic is having a disproportionate and severe impact on women's rights (UN WOMEN, 2021). Interventions to address the economic participation of women must also address broader societal aspects of gender inequality (Madgkavar, White, Krishnan, Mahajan & Azcue, 2020). The issue with actively increasing women in leadership roles is the fact that if they are unable to provide water for their families or complete water-related tasks at home, they are at risk of experiencing spousal abuse (Fleifel, Martin & Khalid, 2019). Therefore, we can assume if women are in leadership positions and are unable to provide water for their communities, they will be at even higher risk by men.

STAKEHOLDER ANALYSIS

Involved in the stakeholder informing projects are both the Brogdon Family Foundation and the World Serve International, as well as other partners of the foundation. The Brogdon Family Foundation would be responsible for taking on the initiative to increase the percentage of women in water councils. Moreover, one of the most important factors of this initiative are the women, who would be participating in informing projects and share their knowledge, as well as learn about the new technologies and ways to make the water projects more sustainable. All parties, including the both the Brogdon Family Foundation and the World Serve International, as well as other partners of the foundation, would have to show their support for female substantive participation in the water management process and decision-making.

Challenges

Even though both the Brogdon Family Foundation and the World Serve International have a positive reputation among Tanzania, there may be hesitation among the local population, especially male workers, to actively pursue the implementation of women in water-management practices. It is likely that there will be individuals within the rural communities where the Foundation operates to be against the initiative. The biggest challenge to increasing the female involvement in water management and water councils, is to show the importance of women inclusion in water management planning and practices.

Conclusion

The incredible work by the Brogdon Family Foundation in rural Tanzania can be improved by increasing female participation in water management practices and planning. To include questions of gender, it is needed to assess detailed analysis to raise awareness regarding the current percent of women on the water councils. Once that is complete, the Brogdon Family Foundation could implement the alternative of the stakeholder informing process, to actively engage women and increase their involvement in water projects which would result in sustainable, long-term approach. Asking questions, listening, and seeking wisdom from local leaders and both male and female community members are all vital to successfully engaging the community.

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Thai, N. V., & Guevara, J. R. (2019). Contents Full Article Content List Abstract Introduction Research Methods and Design Results and Discussions Conclusion Declaration of Conflicting Interests Funding References Accessing resources off campus can be a challenge. Lean Library can solve it Lean Library Figures & Tables Article Metrics Related Articles Cite Share Request Permissions Explore More Download PDF Women and Water Management: A Policy Assessment—A Case Study in An Giang Province, Mekong Delta, Vietnam. Asia-Pacific Journal of Rural Development.

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Appendix

The following table shows the costs of building a water well per site, and the administrative, as well as completion, evaluation, and reporting cost, which are detrimental to the execution of the project. The cost of building a water well and its administrative expenses are included in the table below. The data is received from communication with Kim Packet from the Chris Long Foundation, a nonprofit that operates in rural Tanzania by building water wells (K. Packett, personal communication, February 2022).

The cost is broken down into local community impact assessment which includes local community impact assessment, project development, mobilization and site set-up, construction of borehole, water assessment, construction and plumbing, electrical installation of the pumping system, completion, evaluation, and reporting, and administrative expenses.

Cost per Site		
No.	**Description**	**Cost**
	Local Community Impact Assessment	$ 1,425.54
1.1	Site Visitation	
1.2	Community Assessment	
1.3	Drilling Site Determination	
	2 Project Development	$ 1,663.13
2.1	Geological Survey	
2.2	Drilling Permit	
2.3	Project Scope and Design	
	3 Mobilization and Site Set-up	$ 2,851.08
	4 Construction of Borehole	$ 12,354.68
	5 Water Assessment	$ 3,088.67
5.1	Pumping Test	
5.2	Government Water Quality Analysis	

5.3	Government Permit	
	5 Construction and Plumbing	$ 9,503.60
6.1	Concrete base	
6.2	Plumbing and Connections	
6.3	Holding Tank	
7	**Electrical Installation of Pumping System**	$ 14,255.40
7.1	Solar Pump, Motor, & Control Box/Panel	
7.2	Solar Panels	
7.3	Electrical Cables and Connections	
	Completion, Evaluation, & Reporting	$ 2,375.90
8.1	Community Training	
	Administrative Expenses	
9.1	World Serve International	$ 4,366.00
9.2	Brogdon Family Foundation	$ 4,366.00
	TOTAL	$ 56,250.00