

Women and Water: Lessons Learned from a Humanitarian Intervention at the Igusi Clinic, Matabeleland, Zimbabwe

Rachel C. Svetanoff and Ifeoma Ilobodo

J.B. Dondolo Inc., 320 Decker Drive #100, Irving, TX 76051

KEY WORDS

Zimbabwe, community health, sustainable development goals, clean water, WASH, global health, public health, gender equality

CORRESPONDING AUTHOR

Rachel Svetanoff:
rsvetanoff@internetbar.org

ABSTRACT

This article highlights the disproportionate impact of water scarcity on women and girls in Matabeleland, Zimbabwe. We emphasize one Zimbabwean woman's efforts to implement a sustainable water solution for a community of 20,000 citizens. Lumbie Mlambo, Founder and President of the nonprofit JB Dondolo, Inc., took action following reports that people in the community her father was aiding were falling ill, mothers could not carry their pregnancy to full terms, and infant mortality rates were rising. Before Lumbie's intervention, the only water available was contaminated by polluted soil. Moreover, the climate change-induced droughts and floods made the potable water hard to find and collect. As a result, the only source of water infrastructure was at the Igusi birthing clinic and the nearby secondary school sharing the same pipe system. This lack of clean water particularly affected pregnant women who gave birth at the clinic and their newborns and the girls who attended the nearby school. Following her father's death, Lumbie set out to fulfill his dying wish to help the people he was serving. While she faced many obstacles, Lumbie overcame these challenges and removed barriers of access to clean water for the community. Lessons learned from this experience include gender biases in humanitarianism, community participation, and water resource management planning. Key recommendations include early stakeholder engagement in community development, elevation of women's voices, and investment in partnership building.

1 INTRODUCTION

Water is a bedrock of life and livelihood. It plays an important role in determining the health status of a community and achieving sustainable development. Strategic planning on how to provide clean, supervised action implementation and efficacious water management will serve as a foundation for the actualization of many of the 17 Sustainable Development Goals (SDGs). Two of these include SDG 5 which states,

“Achieve gender equality and empower women and girls” and SDG 6 “Ensure availability and sustainable management of water and sanitation of water and sanitation for all” (Guppy and Anderson, 2017). Notwithstanding, water has become a societal and geopolitical issue in some regions like Africa and Asia, it is a serious national concern for many countries. With no strategic plan and action, the world is bound to miss the SDGs by a wide gap. A 40% gap is predicted to exist between water demand and water availability by 2030 (2030 World Resources Group, 2009).

The United Nations (UN) recognizes access to water as a human right due to its necessity for every person's survival. According to the UN, the *right to water* entitles everyone to have access to sufficient, safe, acceptable, physically accessible, and affordable water for personal and domestic use. Unfortunately, more than 40% of the world's population is affected by water scarcity and cannot access clean water (UN, 2020). By 2050, it is estimated that an additional 2.3 billion people will live in regions under severe water stress, including Southern Africa (OECD, 2012), a region of focus for J.B. Dondolo, Inc.

Zimbabwe is one such country in the grip of severe water scarcity. For the past three decades, Zimbabwe has been faced with a gradual decline in safe and clean water access. In 1988, the World Health Organization (WHO) and the United Nations Children's Emergency Fund (UNICEF) reported that more than 84% of Zimbabwean natives had access to clean and safe drinking water. However, from the time this metric was updated in 2000 to 2017, the percentage of people with access to basic water services and safe water decreased from 72% to 62% (Human Rights Watch, 2020). The underlying source is due to climate change-induced drought (Chingono, 2020), but the problem was exacerbated by piped infrastructure mismanagement and population increase (Human Rights Watch, 2013). In 2020, it was reported that water access has since become a daily struggle for these people due to a severe drought in 2019 that dried up reservoirs (Chingono, 2020).



Figure 1: Dried up pond, Matobo Hills, Zimbabwe, 2020, Source: J.B. Dondolo, Inc. (2021)

Even in this critical period where safe and clean water is required to maintain proper hygiene to curb the spread of the COVID-19 pandemic, people are struggling to collect muddy water from ponds to have drinking water for themselves and their livestock (see Figure 1). This water crisis has been found to have the highest impact on women and girls as they carry the burden of collecting water for the household (World Bank Group, 2020; Care, 2020).

Responding to these issues, J.B. Dondolo, Inc. aims to remove barriers of access to clean water, sanitation, and hygiene in underserved and impoverished communities to reduce poverty and promote gender equity. While based in Dallas, Texas, J.B. Dondolo, Inc., has a global reach focusing on delivering water solutions to last mile communities in Zimbabwe and historically underserved communities in the United States. This article describes the trials, successes, and lessons learned from the Founder of J.B. Dondolo, Inc., Lumbie Mlambo, in her efforts to address the needs of a rural community in Zimbabwe. This intervention helped shape the organization's focus and approach in delivering sustainable water solutions which is also chronicled in this article.

2 WOMEN AND WATER IN ZIMBABWE

Women and girls primarily bear the responsibility of collecting water (see Figure 2) and therefore are the most impacted by the water crisis. This crisis has made the achievement of adequate and equitable sanitation and hygiene for all, especially women and girls, difficult.



Figure 2: Girls collecting water from a borehole, Matobo Hills, Zimbabwe, 2020 Source: J.B. Dondolo, Inc. (2021)

Water inaccessibility disproportionately burdens women, namely socio-economic activities and time spent on collecting water. In addition, improper access to clean water affects the quality of life and causes health implications listed below.

2.1 Socio-economic Activities and Status

Water collection has a significant impact on women and girls, bringing about financial insecurity, and the inability to access available opportunities. This insecurity has only been worsened with the emergence of COVID-19 and its accompanying lockdown. Lockdown has placed an extra burden on women and girls in Zimbabwe, who already perform 2.5 to 3 times as much unpaid care work at home compared to men

(Amnesty International, 2020). Unlike boys are paid to fetch water because it is seen as employment for them (Pahwaringira *et al.*, 2015), women and girls often do not get compensated as it is seen more as a gender role than an opportunity for economic growth (Sorenson *et al.*, 2011).

2.2 Time Spent and Distance Traveled

Women are also observed to spend most of their productive time trying to access the nearest water source and collecting water (UNICEF, 2016; Reid, 2017; Care Australia, 2018; UNESCO, 2020; Pahwaringira *et al.*, 2015). Usually, they wake up as early as 4:00 A.M. local time to embark on the journey. Women would wait in long lines and walk 1-2 kilometers collecting water for their family, sometimes 3-4 times per day (Pahwaringira *et al.*, 2015). This affects their quality of life as they do not get adequate sleep and have little or no time to get their children ready for school or even feed them.

Girls, who just start knowing how to get to primary school by themselves, are usually sent off to collect water instead (UNICEF, 2016; Reid, 2017; Care Australia, 2018; UNESCO, 2020; Pahwaringira *et al.*, 2015). Additionally, girls who start menstruating without access to sanitation at schools would either have to leave for the day or not attend school during those times (Tini, 2021; UN Women, 2014). These cases negatively impact their education which keeps them from economic opportunity and career growth later in life. Therefore, to achieve SDG 5 (Gender Equality), we need to consider SDG 6 (Clean Water and Sanitation).

2.3 Health Implications

With the dominance of water scarcity and the physical and mental strain during water collection, research has reported several cases of permanent damages inflicted on women's health (Allen *et al.*, 2020; Pahwaringira *et al.*, 2015). These health impacts include chronic fatigue, chest and back pain, and pelvic and spinal deformities (Pahwaringira *et al.*, 2015). These health challenges were due to women balancing 20-25 liters of water on their heads while they walked nearly 6 kilometers three to four times per day (Pahwaringira *et al.*, 2015; USAID, 2013). Women are also exposed to harassment and sexual assault, which is detrimental to both their reproductive health and mental health (Allen *et al.*, 2020; USAID, 2013).

Women are not only responsible for themselves, but for their families. When family members, especially the children and the elderly, suffer water-borne illnesses such as cholera or diarrhea, women bear the responsibility of caring for the sick (Allen *et al.*, 2020; UNICEF, 2016). As a result, this leaves them with little or no time for their personal engagement or development (Pahwaringira *et al.*, 2015; USAID, 2013). In Zimbabwe, Igusi villagers reported that pregnant women and babies often fell ill from unsafe drinking water.

These impacts reduce the pace at which all the targets in SDG 5 and 6 can be achieved. Specifically, Target 6.2 of the Sustainable Development Goals is at the greatest stake. The

target is defined as the following:

“By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations” (USAID, 2013).

Because the world has yet to reach this target, the story of Igusi Clinic and Lumbie Mlambo's journey is important to recognize as a relevant intervention today.

3 THE CHANGEMAKER JOURNEY: LUMBIE MLAMBO AND IGUSI CLINIC



Figure 3: Lumbie Mlambo, Source: J.B. Dondolo, Inc. (2021)

“My father's dying wish was to ensure that his promise to refurbish Igusi Clinic was kept. He wanted to see women respected and their dignity restored. If he were alive today, he would have continued his mission and completed this project by himself.

That's how committed to the cause he was.”

– Lumbie Mlambo, CEO of J.B. Dondolo, Inc.

3.1 The Water Changemaker Journey

This changemaker journey was embarked by Lumbie Mlambo, a native to Zimbabwe and of South African heritage. She shares the same love and passion as her father, J.B. Dondolo, had for helping others, especially those neglected and marginalized. Zimbabwe is already vulnerable to water scarcity, and climate change has exacerbated the crisis.

Igusi Clinic, a small medical center seen below in Figure 4, is located in an isolated rural part of Matabeleland province, about a five-hour drive south of the world-famous Victoria Falls. This fenced property has a few structures in place to support its community's needs, sharing its waterline with a nearby secondary school. Nevertheless, the clinic serves an entire community of 20,000 people for basic health services. Pregnant women travel up to 3 miles on foot, walking with everything that they can carry, to stay at this facility until delivery. Many others also walk to collect water from the clinic.



Figure 4: Igusi Clinic in 2017, Source: J.B. Dondolo, Inc. (2022)

Lumbie Mlambo is the youngest of 11 children born to her orphaned father, who never went to school, and her mother, who was a teacher. While she calls Texas home, Lumbie grew up in Zimbabwe and visited her parents as often as she could, especially as her dad was falling ill. However, despite his sickness, Dondolo worked on improving Igusi Clinic’s infrastructure, and it became his dying wish for his children to finish his work.

In 2001 while visiting Dondolo, Lumbie suffered a stroke that left her partially paralyzed. She could not get treatment because the hospitals in Zimbabwe lacked the basic necessities and had to be flown back to the United States. Understanding the grave risks of not having primary care when needed firsthand, she promised her father that she would take his place in establishing Igusi Clinic as a reliable hospital for everyone, especially for women and newborns.

It was not easy for her at first. As a young woman, Lumbie had gender biases hindering her progress. In fact, the local community did not believe that she was the daughter of the community’s beloved humanitarian. However, a mother of two, a wife, and a scholar of Indiana University, South Bend and Texas Women’s University, she had a robust support system and the mental fortitude to overcome this challenge. Moreover, Lumbie believed that collaboration is key to creating a positive impact; she was determined to gain the community’s trust. Because of her perseverance, she was able to work with the community to rejuvenate the Igusi clinic.

Lumbie was trying to understand the magnitude of the Igusi Clinic’s issues, including lack of refrigeration, electricity, and transportation. one resounding statement at the forefront of every testimony, however, was that there was no potable water. Most residents that drank clinic’s water before fell gravely sick, and everyone who visited the clinic and attended the school was advised not to drink from their water system. The locals also told her that water was more critical than the clinic, saying they would sacrifice the clinic altogether for clean drinking water. Lumbie knew that water is a human right, and the lack of such leads to tragedy, and in this case, posing life-threatening danger to expecting mothers, their babies, and school children. Therefore, this issue became her

utmost priority, and it became her mission to advocate for clean water to this day.

Lumbie founded the nonprofit J.B. Dondolo, Inc., in 2012 to see her father’s wish become a reality. Through a partnership with Zimbabwe’s National University of Science and Technology (NUST) and much trust built with the community, it was discovered that the water was dangerously unsafe for human consumption and that dangerous chemicals contaminated sand and water stretching far beyond the clinic. This helped the nonprofit implement an alternative solution, an above-ground water filtration system completed in 2019. Today, J.B. Dondolo, Inc., work closely with the Igusi community to install proper sanitation for managing the COVID-19 pandemic.

3.2 How Change was Achieved

The issue was complex due to lack of proper infrastructure and little in-country help, yet this did not deter Lumbie from making serving a community in need. J.B. Dondolo, Inc., decided to first build community trust and then partner with local experts to leverage experience and technology for delivering a community-centered solution. After Lumbie visited the clinic and had an extensive stay in her home country to learn about Igusi’s needs, it was clear that clean water was the residents’ highest priority. Upon finalizing this assessment, NUST then collected sand and water samples for laboratory testing. Their results showed that the water was contaminated and unsafe for unborn babies and mothers, concluding that a new water filtration system was needed. Therefore, J.B. Dondolo partnered with Alido Civil Engineering & Infrastructure Consultants who specializes in sustainable water systems and environmental engineering. Alido gave J.B. Dondolo, Inc., two options for installing sustainable systems for Igusi. The first potential solution was to install a water purification system for the Igusi Clinic only with interchange for receiving raw water from school. The second solution that J.B. Dondolo, Inc., ultimately decided to implement was installing the water purification system for the clinic and school thereby eliminating incidences of water-borne diseases in the area altogether (filtration system seen below as Figure 5).



Figure 5: Water filtration system for Igusi Clinic and nearby school in 2019, Source: J.B. Dondolo, Inc. (2021)

J.B. Dondolo, Inc., leadership worked directly with all parties at Igusi Clinic including a third-party representative in Bulawayo, Zimbabwe, who served as a liaison between all parties to ensure transparent quality control. Once the system was installed, J.B. Dondolo, Inc., hosted a training session with the clinic and school staff, whose water system is connected, to ensure proper use and maintenance. A few months later, NUST followed up with further testing to ensure that the water was consistently safe for consumption.

3.3 How the Intervention Built Climate Resilience

The negative climate-related impact that made this initiative a need was the recurrent droughts and shifts in rainfall patterns that create flash floods, which, coupled with human-induced contamination, nearly decimate any access to clean water. J.B. Dondolo, Inc., understood the need to remove barriers to access to clean water; however, the initiative manifested itself as a climate-resilient solution due to mitigating flooding impacts that even hindered progress in installing the new filtration system. Because of this experience, the organization learned the value of water conservation with an above-ground tank to control water flow to manage uncertainty and risk of floods. Therefore, the system is installed above-ground to avoid water contamination.

The locals were trained on using and maintaining the water filtration system; they were also educated on proper sanitation practices to reduce contamination risk. These training and education brought about positive changes in their behavior towards humanitarian aid. The training was provided by J.B. Dondolo, Inc.'s project manager Dee Sibindi and the vendor onsite at the clinic and secondary school. This helped local leaders know what to look out for in terms of maintenance or potential breakages as they head into droughts or floods.

As a result, public health status improved significantly. Women and girls could access clean water and maintain proper sanitation and hygiene practices through education. Expecting mothers could maintain entire pregnancy term without the worry of miscarriages or stillborn babies. At the clinic, nurses were able to maintain proper sanitation and hygiene practices for current patients and prevent infections for new patients who visited the clinic. The secondary school facilities now have water for girls to care for themselves during menstruation periods. This development was instrumental in ensuring gender equity in the area since more girls to stay in school and restored their dignity.

3.4 Engaging Women

The key stakeholders were primarily women as they were the nurses and teachers overseeing the respective facilities. They were engaged at every stage of the Igusi Clinic project. Starting from identifying the problem, they decided on what problem they wanted to be fixed first, determined its solution, oversaw the implementation, and were trained on monitoring the system. Having these women involved in each step of the

process built up their leadership skills among the community in which they are now seen as community leaders. As stated by Igusi Clinic's Nurse Ndlovu, "Water is number one. It's what we really need because we can cook and grow vegetables. And patients need it for their medicine. It is needed by mothers-in-waiting and children." The engagement process also was accompanied by training and education which brought about a positive behavioral change in the management of water systems, and sanitation practices.

3.5 Overcoming Challenges

The Igusi Clinic project was presented with several challenges highlighted below.

- **Working in a patriarchal society:** The first striking challenge experienced by Lumbie was being she, a woman. Her gender was a challenge in navigating the community's trust as they did not take her seriously. They had never heard of her nor did they believe she was the daughter of the late J.B. Dondolo, the man they trusted and deeply respected. Despite this initial setback, her persistence and willingness to be their only listening ear earned her their trust, and this made it easy to get all (male or female) involved, and excited throughout. This contributed significantly to the initiative's success, and today the community supports her unconditionally.
- **Fundraising:** Asking others to support a project, especially for a large one like installing a new water filtration system in rural Zimbabwe. By utilizing Johnson & Johnson's CaringCrowd® platform, however, J.B. Dondolo, Inc., was able to break up their project into steps and organize them strategically to raise the appropriate funds for each phase. This accomplishment enabled them to install a new water filtration system, replace broken and rusty pipes, and install a toilet.
- **Flooding:** The intervention was during a period when flooding interfered with daily activities. There was no opportunity for making up lost time at night because wild leopards hunted during these hours. To address this challenge, the organization had to heavily rely on their in-country partners to meet the community's needs in the quickest yet most effective way possible. One example of this led to the construction of the filters above ground level.
- **Tank Capacity:** With the existing storage tank capacity, the water does not last 4 days in the tank like it is supposed to because everyone in the community travels there to get water, which was not anticipated. The community was so grateful for the water that the vendor who installed the system even asked, "Why do people love water in Igusi?" The filtration system has become so popular that the water, which was supposed to last for four days in the tank, only lasts for one day because people are drinking it like they have never seen water before. The second filtration system has not yet to be implemented because of COVID-19 lockdowns.

4 LESSONS LEARNED

The Igusi Clinic initiative has a myriad of lessons that are helpful for evaluation and planning future projects as listed below:

- **Actual Problem versus Perceived Problem:** For every project, there usually arises a conflict of ideas, as the shared problems of a community may be different from the perceived problem with which an organization desires to work with in that community. Lumbie was able to tackle the actual problem of the community by trying to understand their problem and asking the community members.
- **Community Participation:** The relevance of community participation in any project can never be over-emphasized, as this assures its success and sustainability. Lumbie's ability to engage the community gained their trust. It allowed the community members to take ownership of addressing their needs, which motivated them to actively work towards a shared goal.
- **The Role of Women:** It is already a known fact that women and their children bear the burden of water collection, so, for any water project to amount to success, gender issues must be integrated into it. The Igusi Clinic's water story is a success today because expecting mothers no longer worry about the health of their unborn babies. Also, water availability keeps girls in school, especially during the menstruation period.
- **Project Management:** Anticipation of problems and unintended consequences is another lesson learned from this effort. Unforeseen factors like unpredicted flooding resulting in travel restrictions, closures, and pipe bursts created many project management challenges. The unintended consequence of the water tank being emptied every day is also a critical consideration because this extends the long-term management of the project to ensure the overall efforts adequately meets the needs of the people.
- **Partnerships and Co-operation:** For any project to succeed, there is a growing need for organizations to form valuable partnerships. Lumbie understands this very well and partnered with the National University of Science and Technology to test the water and sand at Igusi Clinic. These results helped Lumbie and the J.B. Dondolo, Inc., team to determine the most suitable solution to the community's "cry for water", the phrase all the clinic's staff used when speaking with Lumbie about this need. In addition, their partnership with CaringCrowd helped secure the funds used for the project at the right time.
- **Ensuring Sustainability:** The installation of the above-ground filtration system, new technology in the community, for easy access to clean water helped ensure the constant provision of clean water during inclement climate conditions. Also, experts visit the site regularly to monitor and assess system's effectiveness.

5 RECOMMENDATIONS

The experience and lessons learned lead to the following recommendations:

International and local Non-Governmental Organizations working with local communities should apply stakeholder frameworks for intentional feedback and input mechanisms at the start of any intervention. Only after Lumbie demonstrated that she was listening to the locals that she was able to overcome the hurdle of gaining their trust.

Local provinces and regions should work to elevate women's voices at the leadership level. Women and girls are the primary gatherers of water, and with a successful practical solution like the Igusi Clinic's, women are critical to achieving optimal water infrastructure. Therefore, women's involvement helps improve the sustainability and effectiveness of water interventions.

Provinces and regions that desire to implement similar interventions should endeavor to build partnership frameworks and strategies to actively scout potential partners that they can trust. This will execute plans quickly to positively impact their communities more efficiently instead of slowing progress because trust was not established first.

Local municipalities need to strengthen their ties with Non-Governmental Organizations to help women. For example, pregnant women who travel to be admitted at the clinic before giving birth must receive proper medical, nutritional, and overall health care. This adequate health care must be assured before and after they are admitted because there is only one physician that travels to the clinic to serve the entire community.

Local officials need to seek to secure funding for water harvesting via solar power to provide sustainable potable water sources for the whole community. Relying on the water system at the clinic and school is unsustainable as the tank is emptied by the end of every day. This is also unsustainable for agriculture in the region, which the pregnant women are suffering from as they cannot garden for themselves and their babies.

The region's poor road infrastructure requires more funding and time allotted to reach the clinic. It is also a burden for all who visit the school and clinic, especially the pregnant mothers who walk 3 miles to give birth with swollen feet. Therefore, local officials should develop roads for the community to reach the clinic quicker and more safely.

6 APPRAISALS, HISTORY OF IMPACT, AND FUTURE DIRECTIONS

Because of the significant impact this project had on the United Nations SDGs 5 and 6, Lumbie achieved the following:



Figure 6: Lumbie Mlambo at UN Association Dallas chapter Global Leadership Awards Banquet, Source: J.B. Dondolo, Inc. (2019)

- **The 2019 UN Global Leadership Award:** Lumbie was nominated by the UN Association (UNA-USA) Dallas chapter for significantly advancing SDG 6. She received this award because of her excellence in planning and implementing the successful Igusi Clinic project. The Igusi Clinic story is a model for similar communities of the world to learn from (see Image 6).
- **2020 George H.W. Bush Points of Light Awards:** Lumbie Mlambo was nominated as an honoree of these awards, which highlights extraordinary individuals who demonstrate integrity, empathy, respect, optimism, the conviction in the face of opposition, and belief in the power of the human spirit (Points of Light, 2020).
- **Global Water Partnership:** J.B. Dondolo, Inc., becomes a UN Global Water Partner (GWP). GWP partners with over 3,000 organizations that share its aims and values in tackling the sustainable development, management, and use of water resources (GWP, 2020).
- **2020 Global Goodwill Ambassadors:** Lumbie Mlambo is honored with Global Goodwill Ambassadorship.
- **2021 Global Goals Ambassador:** Lumbie Mlambo became a Global Goals Ambassador with the United Nations Association of USA.
- **2021 Tony Elumelu Foundation:** Lumbie Mlambo is accepted as a Tony Elumelu Foundation Entrepreneurship Programme finalist. The Tony Elumelu Foundation Entrepreneurship program aims to elevate African entrepreneurs across the continent by training, mentoring, and funding 10,000 entrepreneurs across ten years backed by a \$100 million commitment.
- **2021 SDG Awards:** J.B. Dondolo, Inc., is shortlisted as a finalist for the SDG Awards 2021 by the EU Tech Chamber.

Since her water efforts at Igusi Clinic, J.B. Dondolo, Inc., has been able to continue its history of impact with the following:

- **2013-2019 Igusi Clinic Renovation:** In addition to providing access to potable drinking water, Lumbie and J.B. Dondolo, Inc., refurbished the clinic to fulfill her father's dying wish. The renovation included replacing all doors and windows, installing a stove and kitchen sink for pregnant women and new mothers, fencing the property with a sign installed, painting the entire property that included 2 nurse cottages, and delivering 250 books for the library.
- **2015 Lake Grapevine Restoration:** Lake Grapevine's spillway failed in May 2015 due to storm flooding (Richter, 2015). After the flooding subsided, the two Texas-based nonprofit organizations, Keep Grapevine Beautiful and J.B. Dondolo, Inc., organized a clean-up around the lake to raise awareness about environmental stewardship. Professional swimmer Ben Lecomte, a J.B. Dondolo partner, swam across the lake to raise awareness about the event, and his team was picking up debris on the lake. Additionally, J.B. Dondolo, Inc., participated in collecting debris around the lake with approximately 75 volunteers.
- **2017 Hurricane Harvey Relief:** Hurricane Harvey made landfall in Houston, Texas, making it the second second-costliest hurricane to impact the United States mainland, causing \$125 billion in damage (Huber, 2018). In response to a disaster so close to headquarters, J.B. Dondolo, Inc., mobilized to provide over 200 relief boxes containing hygiene supplies that included water, toothbrushes, toothpaste, sanitary napkins, toilet paper, paper towel, latex gloves, and soap for storm survivors.
- **2019 Newark, New Jersey Water Crisis Relief:** The water crisis in Newark, New Jersey, began in 2016 when observations discovered elevated lead levels throughout Newark Public Schools district schools (NRDC, 2021). By 2019, the community was skeptical about the local government remedying the issue as they had yet to see improvements (Flanagan, 2019). One community leader, Pastor Jethro James, Jr. of Newark-based Paradise Baptist Church, reached out to J.B. Dondolo, Inc., for assistance. To come to their aid, J.B. Dondolo, Inc. spent two days in Newark developing relationships with the community and providing 11,520 bottled waters to residents.
- **2020 Navajo Nation COVID-19 Sanitation Relief:** Navajo Nation, which stretches about 27,000 square miles across portions of Arizona, New Mexico, and Utah, has been the hardest impacted by the COVID-19 virus in the United States (Sequist, 2020). Navajos are 67 times more likely to not have indoor plumbing, potable water, and sanitation in their homes, making them incapable of following hand-washing guidelines that are needed to flatten the curve of the spread of the virus (Dietz and Meehan, 2019). Upon hearing this dire situation, J.B. Dondolo, Inc., allied with United Natives in providing sanitation supplies to Arizona Navajo Nation homesteads during COVID-19. This was done by hosting an international music competition and fundraiser. J.B. Dondolo, Inc., helped provide 200 8-hour lasting hand sanitizers and signed on 5 com-

petition winners for a one-time distribution deal with an international record label to advance their humanitarian songs while serving as ambassadors to help fight for clean water and sanitation.

- **2021 Houston, Texas Winter Storm Relief:** The quality-of-life gap between men and women was significant in Harris County as women's poverty rate (15.3%) was nearly 50% higher than the male poverty rate (10.4%) (Gregory and Miller, 2020). The gender gap is higher than observed nationally and even within the state of Texas (Gregory and Miller, 2020). On March 8, 2021, for International Women's Day, J.B. Dondolo, Inc., donated face masks, and hand sanitizers to I Support the Girls - Houston that works with underserved women and girls affected by the Texas winter storm. This storm left the state grappling with broken water pipes, food insecurity, and an electrical outage causing 4.3 million people to lose power (Sullivan and Malik, 2021). More than 150 people died because of the extreme cold and poor infrastructure conditions. (Steele, 2021)

J.B. Dondolo, Inc.,'s future directions include, but are not limited to, the following:

- **Sanitation development at Igusi Clinic:** Installing an above-ground toilet and septic system while deconstructing pit latrines and educating proper sanitation practices to further minimize contamination risks. More water filtration systems will also be installed. At least one will be for the secondary school so that the water lines will not need to be shared and another in a location closer to people's residences.
- **Water for Widows:** Working in Matobo Hills with partners to provide access to clean water for a rural community of 6,000 mainly comprised of women and girls is a new priority. This community of widows comprises of 600 homesteads with approximately 10 people living in each homestead, as seen in Figure 7 below.



Figure 7: Women carrying water, Matobo Hills, Zimbabwe, Source: J.B. Dondolo, Inc. (2021)

J.B. Dondolo, Inc., and in-country partners Dot Bekker, and NUST, are identifying ways to implement sustainable access to water so that these women and girls do not have to walk as much as nine miles to reach their nearest water source. The water they fetch is also unsafe for human consumption; however, to survive, they have been left with no choice but to use it. Humans and livestock drink out of the same muddy

pond that dries up during the summer months, as seen in Figure 1.

6 CONCLUSION

Water is an integral part of health, safety, and dignity, which all should enjoy. Lumbie Mlambo, Founder and President of J.B. Dondolo, Inc., demonstrated that women have a vital role in addressing water sustainability at the leadership level. The Igusi Clinic intervention she implemented highlighted the disproportionate impacts the lack of access to potable water has on women and girls and how removing this barrier helps entire communities have a better quality of life. The challenges that she faced and lessons learned were reported to share knowledge for, assisting others in overcoming these obstacles more efficiently or even avoid them. Recommendations were also made to all stakeholder groups for raising awareness about the work that is still left to accomplish. Therefore, the need for J.B. Dondolo, Inc., to continue its work was acknowledged through its history of impact and future directions and Lumbie's appraisals for advocating to make access to clean water an essential priority. Therefore, integrating gender-specific programs into water, sanitation, and hygiene efforts is an obligation to every society, as underscored by the UN Sustainable Development Goals because she who wears the shoe knows where it pains her.

7 REFERENCES

- Allen, M., Ashfaquzzaman, M., Bryan, M. et. al., 2020. Women and Water in the Developing World: Linking Water Insecurity and Gender Disparities. CSIS Journalism Bootcamp. <https://journalism.csis.org/women-and-water-in-the-developing-world-linking-water-insecurity-and-gender-disparities/>.
- 2030 WRG (2030 World Resources Group), 2009. Charting our Water Future: Economic Frameworks to Inform Decision-making. <http://www.mckinsey.com/business-functions/sustainability-and-resource-productivity/our-insights/charting-our-water-future>
- Amnesty International, 2020. The Devastating Effects of COVID-19 on Maternal Health in Zimbabwe. <https://www.amnesty.org/en/latest/campaigns/2020/04/the-devastating-effects-of-covid19-on-maternal-health-in-zimbabwe/>
- Care, 2020. Evolving Trends: Women in COVID-19. <http://www.careevaluations.org/wp-content/uploads/RGA-Trend-Update-July-1.pdf>
- Care Australia, 2018. Bringing Clean Water to Families Our water, sanitation and hygiene project in Zimbabwe. Care Australia. <https://www.care.org.au/zimbabwe-water-sanitation-hygiene/>.
- Chingono, N., 2020. 'We are Drinking Sewage Water': Zimbabwe Shortages Threaten Thousands. The Guardian. <https://www.theguardian.com/global-development/2020/oct/28/we-are-drinking-sewage-water-zimbabwe-shortages-threaten-thousands>

- Deitz S., and Meehan, K., 2019. Plumbing poverty: mapping hot spots of racial and geographic inequality in U.S. household water insecurity. *Annals of the American Association of Geographers*.109(4):1092-1109. <https://doi.org/10.1080/24694452.2018.1530587>.
- Flanagan, B., 2019. Newark Residents Line Up for Bottled Water, Doubt Official Assurances About Lead. *NJ Spotlight News*. <https://www.njspotlight.com/video/amid-doubts-about-official-assurances-newark-residents-still-line-up-for-bottled-water/>.
- Global Water Partnership, 2020. Global Water Partnership Award. <https://www.gwp.org/en/partner/become-a-partner2/>
- Gregory, E., and A. Miller, 2020. Houston/Harris County Gender & Sexuality Data: Initial Report. the University of Houston Institute for Research on Women, Gender & Sexuality: 1. https://uh.edu/class/ws/research/_docs/02.14.20-irwgs-report.pdf.
- Guppy, L., Anderson, K., 2017. Water Crisis Report. United Nations University Institute for Water, Environment and Health, Hamilton, Canada. <https://inweh.unu.edu/wp-content/uploads/2017/11/Global-Water-Crisis-The-Facts.pdf>
- Huber, C., 2018. 2017 Hurricane Harvey: Facts, FAQs, and how to help. World Vision. <https://www.worldvision.org/disaster-relief-news-stories/2017-hurricane-harvey-facts>.
- Human Rights Watch, 2020. Zimbabwe: Unsafe Water Raises COVID-19 Risks. <https://www.hrw.org/news/2020/04/15/zimbabwe-unsafe-water-raises-covid-19-risks>
- Human Rights Watch, 2013. Zimbabwe: Water and Sanitation Crisis. <https://www.hrw.org/news/2013/11/19/zimbabwe-water-and-sanitation-crisis>.
- Natural Resources Defense Council, Inc. (NRDC), 2021. Newark Drinking Water Crisis. Natural Resources Defense Council, Inc. <https://www.nrdc.org/newark-drinking-water-crisis#:~:text=August%2010%2C%202019,water%20to%20some%2015%2C000%20homes>.
- Organization for Economic Co-operation and Development (OECD), 2012. Environmental Outlook to 2050: The Consequences of Inaction, OECD Publishing, Paris. <http://www.oecd.org/env/indicatorsmodelling-outlooks/oecd-environmental-outlook-1999155x.htm>
- Pahwaringira, L., Chaminuka, L., and Muranda-Kaseke, K., 2015. The Impacts of Water Shortages on Women's Time-Space Activities in the High Density Suburb of Mabvuku in Harare. *WH2O: The Journal of Gender and Water*, 4(1), p.8. <https://repository.upenn.edu/wh2ojournal/vol4/iss1/8/>
- Points of Light, 2020. The George H.W. Bush Points of Light Awards Celebration. <https://www.pointsoflight.org/bushawardscelebration/>.
- Reid, K., n.d. Water within reach: Compare two 5-year-olds' walk for water. World Vision. <https://www.worldvision.org/clean-water-news-stories/compare-walk-for-water-cheru-kamama>.
- Sequist, T., 2020. The Disproportionate Impact of Covid-19 on Communities of Color. *NEJM Catalyst*. <https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0370>.
- Sorenson, S. B., Morssink, C., & Abril Campos, P. (2011). Safe Access to Safe Water in Low Income Countries: Water Fetching in Current Times. University of Pennsylvania Scholarly Commons. http://repository.upenn.edu/spp_papers/166.
- Steele, T., 2021. Number of Texas deaths linked to winter storm grows to 151, including 23 in Dallas-Fort Worth area. *The Dallas Morning News*. <https://www.dallasnews.com/news/weather/2021/04/30/number-of-texas-deaths-linked-to-winter-storm-grows-to-151-including-23-in-dallas-fort-worth-area/>.
- Sullivan, B. and Malik, N.S., 2021. 5 Million Americans Have Lost Power From Texas to North Dakota After Devastating Winter Storm. *Time*. <https://time.com/5939633/texas-power-outage-blackouts/>.
- Tini, E., 2021. Girls' education and menstrual hygiene challenges in Zimbabwe. *Global Partnership for Education*. <https://www.globalpartnership.org/blog/girls-education-and-menstrual-hygiene-challenges-zimbabwe>.
- United Nations, (n.d.) Water, 2020. <http://www.un.org/en/sections/issues-depth/water/>
- United Nations Children's Fund (UNICEF), 2016. UNICEF: Collecting water is often a colossal waste of time for women and girls. UNICEF. <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>.
- United Nations Department of Economic and Social Affairs. Ensure availability and sustainable management of water and sanitation for all, 2015. <https://sdgs.un.org/goals/goal6>
- United Nations Educational, Scientific and Cultural Organization (UNESCO), 2020. Accessing safe water a challenge for women with disabilities in Zimbabwe. UNESCO. <https://en.unesco.org/news/accessing-safe-water-challenge-women-disabilities-zimbabwe>.
- United Nations (UN) Women, 2014. Collecting and carrying water, burdensome reality for women. UN Women. <https://www.unwomen.org/en/news/stories/2014/3/collecting-and-carrying-water-burdensome-reality-for-women>.
- United States Agency for International Development (USAID), 2013. 6 Kilometers A Day. <https://www.usaid.gov/global-waters/may-2011/six-kilometers-day>
- World Bank Group, 2020. Gender Dimensions of the COVID-19 Pandemic. <https://openknowledge.worldbank.org/bitstream/handle/10986/33622/Gender-Dimensions-of-the-COVID-19-Pandemic.pdf>



Rachel is a young leader dedicated to championing innovation in social impact causes. Over the past 10 years, she has helped work on all 17 U.N. Sustainable Development Goals where she has contributed to over 100 projects with 90 organizations across 37 countries. Rachel oversees research and strategy as a member of the Board of Directors of JB Dondolo, Inc. For her service to social impact, Rachel is the recipient of the 2021 and 2020 J.B. Dondolo, Inc. WASH Changemaker Award, Top 10 Under 40 of Tippecanoe County Award, 2021 Purdue University Student Life Young Alumni Award, 2021 Gold Presidential Volunteer Service Award of AmeriCorps, and an InnoCentive Challenge winner. She has an MBA from Purdue University Krannert School of Management, MS in Global Health from University of Notre Dame, and a BS in Chemistry from Purdue University.

Directors of JB Dondolo, Inc. For her service to social impact, Rachel is the recipient of the 2021 and 2020 J.B. Dondolo, Inc. WASH Changemaker Award, Top 10 Under 40 of Tippecanoe County Award, 2021 Purdue University Student Life Young Alumni Award, 2021 Gold Presidential Volunteer Service Award of AmeriCorps, and an InnoCentive Challenge winner. She has an MBA from Purdue University Krannert School of Management, MS in Global Health from University of Notre Dame, and a BS in Chemistry from Purdue University.



Ifeoma Ilobodo is a candidate for a Masters of Public Health degree with her option being Reproductive and Family Health in University of Ibadan, who is currently concluding her postgraduate research project. While she studies she works as a social science research consultant for national, multinational, and international organiza-

tions either as a paid contractor or a volunteer. She received a Bachelor's degree in Human Anatomy from Nnamdi Azikiwe University. She is interested in women's health; gender issues; sexual and reproductive health; human trafficking; adolescent health; maternal and child health; mental health, human rights, water, sanitation and hygiene issues.