For Want of Water, A Will: Community Participation in the Development of a Potable Water Project in Melio, Cameroon

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For Want of Water, A Will:

Community Participation in the Development of a Potable Water Project in Melio, Cameroon

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ABSTRACT

By taking the water system in Melio-Baleveng, Cameroon as a case study for investigation, this paper explores the successes and challenges of community participation in water project development. Essential for life, and critical for the productivity of populations, potable water remains a scarce resource in developing countries. Facing a failure of government action and a dire need for potable water, the community of Melio partnered with the non-profit Breaking Ground in 2013 to realize a water project. A year after the project’s completion, water still flows from the fountains, but the project’s future remains uncertain as the impoverished community struggles to implement a system that regulates water use and provides fees for maintenance. The participation of the community in the project has succeeded in providing potable water that has the power to improve the welfare of the community, and in instilling a sense of ownership in community members that ensures their commitment to system maintenance. Yet, problems such as insufficient sensitization, weak organization, and rampant poverty endanger the sustainability of this project. This report analyzes the effectiveness of community participation on the development of the water system and identifies ways that the community-managed public good can continue to develop.

RÉSUMÉ

En prenant le système d’eau dans le village Melio-Baleveng du Cameroun comme une étude de cas pour enquête, ce rapport explore les succès et les défis de la participation de la communauté dans le développement du projet d’eau. Indispensable à la vie, et essentielle pour la productivité des populations, l’eau potable est une ressource rare dans les pays en développement. Face à un échec de l’action du gouvernement et un besoin urgent d’eau potable, la communauté Melio en partenariat avec l’ONG Breaking Ground en 2013 a réalisé un projet d’eau. Un an après l’achèvement du projet, l’eau coule encore des fontaines, mais l’avenir du projet demeure incertain, alors que la pauvre communauté se bat pour mettre en œuvre un système qui réglemente l’utilisation de l’eau et offre les frais de maintenance. La participation de la communauté dans le projet a réussi à fournir de l’eau potable qui a le pouvoir d’améliorer le bien-être de la communauté, et à installer un sentiment d’appartenance chez les membres de la communauté qui assure leur engagement à la maintenance du système. Pourtant, des problèmes tels que la sensibilisation insuffisante, la faiblesse de l’organisation, et la pauvreté endémique mettent en danger la durabilité de ce projet. Ce rapport analyse l’efficacité de la participation communautaire sur le développement du système d’eau et identifie les moyens que le bien public géré par la communauté peut continuer à se développer.
**Dedication**

To those who participated and continue to participate in ensuring the success of the Melio water project. May your sense of responsibility and pride continue to inspire researchers for generations to come.

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1. INTRODUCTION

1.1 The Importance of Water

Beauclair Ghogodongmo said it best when, leaning against the doorway where I’m interviewing his aunt, he murmurs so quietly that I almost miss it, “L’eau est la source de la vie.”\(^1\) And there it is, that elusive phrase defining my quest for the last few months and the quest of his village for the last decade. For without water, human beings cannot survive for more than two days. Water is essential for drinking, bathing, and washing anything from plates to clothes to hands. A tenet of survival and a tool for cleanliness, water is at the root of sanitation and at the foundation of health. Drinking contaminated water can kill or, at the very least, cause populations to suffer from a variety of water-borne sicknesses.

Moreover, access to water is critical for the development of communities. Potable water safeguards a healthy population, who can work harder in school and in the fields than a population crippled by sickness and hospital bills. Accessible water ensures more time for productive work, such as studying, cultivating, and taking care of a family. Development experts have determined that water deprivation or “the inability to reliably obtain water of adequate quantity and quality to sustain health and livelihood,” is an index of poverty.\(^2\) In an article entitled, *The Big Thirst*, the journalist Charles Fishman describes the threat that water poverty poses to development:

\begin{quote}
Water poverty doesn’t just mean that your hands are dirty, or you can’t wash your clothes, or you are often thirsty. Water poverty may mean that you never learn how to read, it means you get sick more often than you should, it means you and your children are hungry. Water poverty traps you in a primitive day-to-day struggle. Water poverty is, quite literally, de-civilizing.\(^3\)
\end{quote}

With an understanding of the role that access to drinking water can play on development, the United Nations devoted one of their Millennium Development Goals to ameliorating the world’s water situation, commanding countries to, “Halve, by 2015, the proportion of the population without suitable access to safe drinking water and basic sanitation.”\(^4\)

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1 “*Water is the source of life.*” Ghogodongmo, Focus Group. 25 Nov, 2014.
2 Crow, “Water: Gender and Material Inequalities In the Global South” (2)
4 “*Goal 7C.* United Nations Millennium Development Goals
1.2 Cameroon Water Situation

The country of Cameroon is not expected to meet this Millennium Development Goal by 2015. When the goals began in 2000, only 40.6% of Cameroon’s population had access to potable water. By 2007, when the United Nations Development Program evaluated each country’s progress, they found that the percentage of Cameroon’s population with access had only risen to 43.9%, indicating that Cameroon would be unlikely to meet the goal of providing access to clean water to 72% of its population by 2015.

Oddly enough, Cameroon is relatively blessed with abundant water resources, coming in at 49th out of the 182 countries of the world in water supply. However, access to clean water varies greatly across the regions in Cameroon. Nestled in the crook of West-Central Africa between the coast and the Sahara, Cameroon’s climate runs the gambit from a jungle South to a temperate West to a desert North. Furthermore, much of this attributed wealth in water supply lies in groundwater stored deep under the surface and the heavy rains that Cameroon receives in the wet season. This groundwater is difficult to access by an impoverished population who cannot afford the costs of drilling, and during the dry season there is a serious dearth of water across the country.

The Cameroonian state has tried to address these natural barriers to clean water access faced by its population, but for the most part has failed to meet their needs. Originally, it was the responsibility of the National Water Company of Cameroon (SNEC) to provide drinking water to the population. In the rise of privatization reforms in the 1980s, the private company Cameroon Water Utility (CAMWATER) replaced SNEC as the provider of drinking water in the country. To date, CAMWATER is characterized as being “more and more unable to respond to the population’s need” with wells that frequently break down and erratic supply even to working wells. Due to this unreliability, Cameroon’s population often resorts to natural sources of water, including rain, rivers, and ponds that are of questionable quality.

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8 Ibid (1320-22)
9 Ibid (1329)
In general, CAMWATER struggles to serve the urban population, while the Ministry of Water and Energy and non-profits strive to meet the needs of the rural population, where access to clean water trails sharply behind access in urban areas. While 43.9% of Cameroon’s population overall had access to drinking water in 2007, only 20% of its rural population had a source of clean drinking water. Another study in 2010 found that “Large disparities exist in access to safe water and improved sanitation in rural and urban areas, with access in urban areas being twice that in rural areas – and poverty accounts mostly for this situation.” These natural, political, and economic barriers to clean water access explain why despite Cameroon’s abundance of water resources, Cameroon is ranked 116th out of the 182 countries in the world by the percentage of its population not using an improved water source. Due to the inability of government services to address natural challenges to water access, Cameroon is not anticipated to meet the Millennium Development Goal of halving the proportion of its population without access to drinking water by next year, showing that access to drinking water in the country is still a pressing developmental need.

1.3 Community Participation

Failures of top-down development practices in the late 1980s led to recognition of the importance of community participation in the development process. Even the World Bank, whose projects tend towards top-down interventions, published a report stating, “There is accumulating evidence about the effects that beneficiary participation in project design and management have on the efficiency of implementation, cost recovery, and project sustainability.” Particularly, community participation has come to be seen as essential in the field of natural resource management. One of the Four Principles that arose out of the International Conference on Water and the Environment in Dublin in 1992 stated, “Water development and management should be based on a participatory approach.”

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10 Ibid (1322)
11 Cameroon MDP Progress Report. United Nations Development Program. (21)
12 Ako, Andrew Ako, “Access to Potable Water and Sanitation in Cameroon.” (1337)
13 Ibid (1329)
14 Bamberger, The Role of Community Participation in Development Planning and Management. (vii)
approach, involving users, planners, and policy makers at all levels.” Community participation in water projects has been found to increase a sense of ownership and ensure community satisfaction in the service. However, the success of community-implemented water projects can be a victim of village politics and dependent on the ability of the community leadership to organize services. Furthermore, water projects can be crippled by a lack of a willingness to pay for services in poor communities. Thanks to the accomplishments and challenges of community participation in development projects, the topic remains a hotly debated theory today.

1.4 Research Project

Given the critical nature of access to potable water on community development and the rising importance placed on community participation in development projects, I wanted to take this opportunity for independent research to explore the effect of community participation on a water project. To study this subject, I spent several weeks living in the quartier of Melio, where the community had realized the construction of a water project in 2013 with the help of the non-profit, Breaking Ground. Together, the non-profit and the community raised funds to construct a pump, reservoir, and five water fountains around the neighborhood of Melio. A year later, the community is currently in the midst of figuring out a system for the upkeep of the water project. Using the participation of the Melio community as a case study for my research, I sought to explore the following research questions and hypotheses:

1. Do the various ways that the community attains drinking water meet their needs?
Hypothesis: The community finds drinking water from three sources: the rain, natural bodies of water, and the new water project. Since the creation of the water project, they are probably using the other sources less. Access to different sources of water meets the needs of the community for water, although this water may not always be “sanitary.”

2. How did the community participate in the water project?

16 Ishaku and Majid, “Community Participation: Alternative Approach to Water Supply in Nigerian Rural Communities.”
17 Njoh, “Determinants of Success in Community Self-Help Projects: The Case of the Kumbo Water Supply Scheme in Cameroon.”
18 Das and Takahashi, “Non-Participation of Low-income Households in Community-managed Water Supply Projects in India.”
Hypothesis: The community is currently involved in the upkeep of the water project that they initiated, financed, and built with the assistance of Breaking Ground.

3. Did the participation of the community in the water project impact its success?
Hypothesis: By their involvement throughout the project, the community ensured the development of a sustainable water system that adequately meets their needs.

The following paper seeks to answer these questions using the results of field-based research. In the first part of my paper, I will discuss the methodology of my research, including the selection of my case study, the research methods I employed, and the strengths and limitations of the study. The following section is an overview of the water situation in Melio, examining the water needs of the community that prompted them to initiate the project and detailing community participation in the water project. Turning from overview to analysis in the next section of the report, I evaluate the impact that community participation had on the success of the water project. First, I look at how the mobilization of the community led the water project to succeed, before accessing how community-implementation of the maintenance system has led to several challenges. To examine the success of the project, I derive my definition of success from the community, who often defined a water system as successful if clear water flowed and the project continued to function. Finally, in the last section, I conclude the paper with a summary of my findings in relation to research questions, propose suggestions for system improvement, and offer recommendations for future research.

2. METHODOLOGY

2.1 Choice of Case Study

In the West Region of Cameroon, where traditional chefs wave horsetail whips and a blue wildflower called le roi des herbes runs stunningly rampant, you can find the community of Melio. A quartier or neighborhood of the groupement Tsobing in the village of Baleveng, Melio is located about 19 kilometers from the university town of Dschang, in the département of Ménoua. The
population of Melio consists of more than 3500 inhabitants, “qui vivent essentiellement de l'agriculture, de l'élevage, et du petit commerce.”

To study the effect of community participation on the development of a water project, I used the case study of the Melio community, who partnered with the non-profit Breaking Ground to realize a water project in 2013. The water project consists of five water fountains, a reservoir, and an electric pump. Five different quartiers (neighborhoods) of Tsobing contributed financially to the water project – Melio, Minka, Toufeng, Tsinfeng, and Mfeng – though all the five fountains of the project were constructed in Melio, the quartier that initiated the project. I chose Melio as a case study for this report, because there is a great need for water access in rural areas and also a strong sense of community in the village setting. Furthermore, I wanted to study the water project in Melio, because the community was and remains involved in the project development, and the water project occurred over a year earlier, providing me with the opportunity to evaluate the on-going success of the water system.

I think several strengths of this research project come from the case study that I chose. The involvement of a non-profit in the project gave me a valuable resource to consult, and the size of the community allowed me to easily establish rapport with villagers. Living among the community helped build confidence and trust between community members and me. Moreover, people were eager to participate in interviews, because they were proud of what they had accomplished and wanted to improve the project. Because the community used my investigation as an opportunity to express concerns, delights, and suggestions about the water project, I collected an incredible amount of information and also came to see my paper as more than an academic exercise, but a study that the community valued as a chance to evaluate their system.

However, while I think this case study was important to the success of my project, I also believe that I carried out my research project on the success of their water project in the midst of a great change. The weekend I arrived in the village, the community had just implemented the

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19 “...who live essentially by farming, raising animals, and managing little businesses.” Comité de Développement de Melio, Project de Réalisation D'une Adduction D'Eau Potable Par Pompage À Melio et Environs
payment system and while it was very exciting to experience firsthand the initial accomplishments and challenges of the system in its first two weeks, I am also aware that this is just a snapshot of a moment in the life of this water project. Because this was a time of flux for the community-implemented water project, a lot of problems became apparent that might no longer exist in a year’s time, so that another study of the system might find completely different results. I urge any researcher interested in further investigating the success of community-implemented water systems to consider carrying out a second study of the water project in Melio to give a more robust picture of its success, after it has had the chance to weather the test of more years and the community has more definitively determined a maintenance system.

2.2 Research Methods
To carry out this research project, I wanted to interview members of the Melio population who participated in a myriad of ways in the project. On arriving in the community, though, I discovered that the project was more complicated than my original understanding, because five different quartiers had participated in the project and each fountain had a different person responsible (responsable) in charge of its upkeep. With the help of my host father, Laurent Tsopgue, who is the treasurer and de-facto leader of the project, I identified a host of people to interview, who were implicated in the water project in a variety of ways. I talked to:

- The chefs or chef’s representatives of each quartier involved, including Melio, Minka, Tsinfeng, Toufeng, and Mfeng
- The responsables of each of the five fountains
- The treasurer and secretary of the comité de réalisation, the committee charged with the realization of the water project
- Health workers: the women who ran the small health clinic in the neighborhood, and the doctor at the village public hospital
- Two elites, who are community members that live elsewhere, but frequently visit their village and raise money for village development projects
- A focus group of high-school students, who are often charged with collecting water
- The Adjoint to the Mayor of the Arondissement Nkong-Ni
- A delegate of Ministry of Water and Energy in the Department of Ménoua
- Paul Zangue, Director of Breaking Ground

Before all of these interviews, I would inform participants that I was not affiliated with Breaking Ground or the project in any way, and that they were welcome to pass on any question or have their
answers kept anonymous. I did this to ensure the reliability of my data and also to make sure that my participants felt comfortable contributing to my project. No one asked to remain anonymous, and, if anything, participants were enthusiastic to share their opinions for the sake of a report that would allow them to evaluate and improve their project. I was careful to interview students older than 18, both because they could most knowledgably respond to my questions and to avoid ethical concerns around interviewing underage participants.

I used a recorder for every formal interview that I conducted to ensure that I gathered all the necessary information. Conducting private interviews could be difficult, because to ensure their comfort, I let my participants chose the interview location, and often times we ended up in their house, with their friends and family sometimes contributing, so that some interviews turned into focus groups. While it was good to have input from a variety of respondents, this could have influenced the answers of the person I came to interview. Furthermore, I needed to use a translator for four interviews to ensure that participants understood my questions and could fully express their thoughts in Patois. While using a translator ensured participant ease and understanding, it also presents the possibility that the translator could have influenced people’s responses or not precisely communicated my question or their answer. Finally, my understanding of French allowed me to comfortably conduct these interviews, but since I am not fluent in the language, there were certainly nuances to respondent’s answers that I did not have the proficiency to understand.

In addition to the eighteen formal interviews I conducted in the community, I also carried out several field interviews with my host father on site visits to the reservoir and the pump constructed by the project, as well as the pond where community members find water. On first arriving in the village, I had the opportunity to observe a meeting of the provisional water council and ask my host father and Paul Zangue some background questions on the project. Furthermore, whenever I was free from interviews in the evenings, I would walk around the neighborhood on a “tour de quartier”\(^{20}\) to see if responsables were there at the appointed times, which resulted in a lot of crucial conversations and informal interviews on the success of the system. Finally, living with the

\(^{20}\) walk around the neighborhood
treasurer and the current de-facto leader of the project, I got to experience the water situation in the village firsthand. I saw how people came to our house asking after the availability of my host brother to open the nearby fountain, went on early morning hunts for water line vandals, and assisted my host father and other *responsables* in trying to address water leaks and breakdowns. While this allowed me to experience firsthand my father’s favorite expressions of “La gestion n’est pas facile” and “Le début est toujours difficile,” it also could have led to people in the community viewing me as an implicated member in the water project, rather than a neutral researcher. Likewise, I found that sometimes the community would try to address the very challenge of internal communication that I observed by using me as a tool for communication.

Between the formal interviews I conducted, the site visits, and “tour de quartiers” that I tried to undertake each night, I found myself overwhelmed with information on the successes and challenges of the project, especially given that the situation and system would evolve every day. Trying to narrow down my field of data, I determined to transcribe 12 of my 18 formal interviews and write out all my observation and interview notes from site visits and walks around the neighborhood. These sources formed the foundation of data that I analyzed to write this paper. With the advice of my advisor, I determined to focus on the overlying successes and challenges of the project, rather than the minutiae of the accomplishments and obstacles that arose. I certainly gained a great deal of useful and fascinating information on community participation in water projects through this case study, and with more time, I would love to delve more deeply into the topic with further data analysis or even return to the community to continue evaluating the ever-shifting successes and challenges of the project.

3. BACKGROUND ON PROJECT AND PARTICIPATION

3.1 Community Need

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22 Yucel, Tour de Quartier Journal.
While the community of Melio inaugurated the water project during the annual quartier reunion in 2013, the actual work for the water project started as many as eight years before, at another Congrès du quartier. Recognizing their community’s pressing needs for water, village elites called for community contributions towards a future water project. At this point, the primary source for the village’s drinking water was a deep pond, fed by an underground spring throughout the year and supplemented by torrents of rainwater in the rainy season. Unlike other natural bodies of water in the region, this spring-fed pond never dried up in the dry season, and so each January became a critical source of water for both the community of Melio and populations located kilometers away. Even in the rainy season, members of the Tsobing community ventured to the pond to collect water for drinking, believing that due to its clear color, the water was potable.

However, while many believed the water safe to drink, the pond was actually quite polluted. The streams of water that fed the pond in the rainy season carried trash, animal stool, and oil from the roads down into the pond, where it is nestled in a forested valley – the lieu sacré – at the center of the neighborhood. The leaves and branches of the surrounding trees would fall on the pond, prevent the water from flowing out, and thus create a stagnant source of water. Driven by need, the population would drink this water, and suffer from a variety of water-related diseases, particularly throughout the dry season. A survey of the population’s health carried out by the community during the Congrès in 2011 found that nearly 100% of the population in the past year had suffered or were suffering from diseases such as typhoid fever and diarrhea that are associated with drinking dirty water.

Not only was this source of water stagnant and polluted, and thus dangerous to drink, but it was also extremely dangerous to even gather water from. In the dry season, when the need for water became particularly great, people from communities around would come to the water source, and the shallow end of the pond would quickly become dirty and diminished. Finding it impossible to

25 Lieu sacré is the sacred place where the community gathers to carry out traditional ceremonies.
27 Kammy, Dr., Informal Interview. 24 Nov, 2014.
28 Wamba, Interview. 23 Nov, 2014.
gather water there, children – who are often charged with the task of gathering water – would venture further and further along the perimeter of the pond, over to the deeper end where the spring fed the water level. None of these children knew how to swim. Recognizing the potential for travesty, the older members of the community would erect a barrier of branches every year to prevent children from accessing the deep part of the pond, but every dry season, the children would break it down again in their need to gather water. Finally, several years after the community began collecting contributions to improve this water source, the worst happened: a child of fifteen slipped past the broken barrier to gather water in the deep end, fell in, and drowned. As my host father on the occasion of our expedition to the pond explained, “La mort de l’enfant est une des conséquences de l’eau sale. Parce qu’avec l’eau propre, l’enfant ne devrait pas aller là-bas, dans la région profonde où il peut se noyer.”

So despite bountiful rainfall in the rainy season and the never-ending source of pond water in the dry season, the quartier of Melio felt a pressing need to find another source of drinking water: one that wouldn’t put their community in danger of disease or death. Originally, the community’s development committee hoped to raise enough funds from community contributions to create a more permanent barrier and install two water fountains near the pond that would be fed by the source.

Community Mobilization

Laurent Tsopgue, the future treasurer of the water project, first found his interest in Breaking Ground piqued in 2011, when he caught a glimpse of a poster advertising another community project that the non-profit was sponsoring. Driven by his community’s need for a better source of drinking water, he decided to pay a visit to the Breaking Ground office to learn if the non-profit might be able to help their community implement a water project in Melio. Thus, contact between the non-profit and the community was born. Finding the proposed water project of

29 “The child’s death is one of the consequences of dirty water. Because with clean water, the child would not have gone there, in the deep part where he could drown.” Tsopgue, “Field Visit to the Pond.” 18 Nov, 2014.
paramount importance during the cholera epidemic sweeping through Cameroon at the time, Breaking Ground decided to carry out a series of interviews with community members in order to gauge the potential for community mobilization. Paul Zangue, then director of programs at Breaking Ground and now the executive director, recounted how impressed they were by the mobilization that the Melio community had demonstrated through the 1,5 million CFA they had already raised for the water project during past Congrès, and the community organization required to construct the pond barrier every year.\(^{31}\) Breaking Ground decided to take the project on, and proposed an even more modern water system than the one the community had originally dreamed of, with a pump to send groundwater from a groundwater source up to a reservoir and then out to four water fountains installed on the level of the village. Breaking Ground agreed to finance 8,16 million CFA of the project if the community could finance the other 6 million CFA.

Delighted by this opportunity, the community happily agreed and as Laurent notes, “Ils ont contribué financièrement et moralement.”\(^{32}\) By the start of the project, Melio’s development committee had raised over 3 million CFA through community contributions at neighborhood meetings,\(^{33}\) where “chacun sort ce qu’il peut” – grandmothers, elites, and children alike.\(^{34}\) Further financial contributions from village elites, community members, and neighboring quartiers led to the community attaining – and then surpassing – their goal of raising 6 million CFA.\(^{35}\)

Following the request of Breaking Ground, the community also instituted a realization committee charged with overseeing the smooth operation of the project and resolving any problems. The community did not know how to form this committee before receiving the guidance of Breaking Ground, who helped them nominate community members to various leadership posts, such as the president, treasurer, secretary, and a buying commission within the realization committee. With the advice of Breaking Ground, the realization committee held frequent, open meetings to tackle problems and allow the community to participate “morally” in the project.

\(^{32}\) Tsopgue, Informal Interview (Tour de Quartier). 20 Nov, 2014.
\(^{33}\) Tsopgue, Informal Interview (Tour de Quartier). 3 Dec, 2014.
\(^{34}\) “...each gave what he could.” Tsopgue, Interview. 22 Nov, 2014.
realization, where “c’est la tête qui travaille.” They used these meetings as an opportunity to source community input and decision on construction materials, fountain placement, and project oversight.

The community did not give materials or free labor to the construction of the project, but instead paid for both of these inputs using the money they raised. The buying commission bought the materials together, as directed by the realization committee. Some community members did aid with the construction of the project by digging trenches to lay pipes, but were paid by the engineer hired to construct the project. However, villagers did donate plots of their land for the construction of various project infrastructure, and farmers sacrificed part of their crop for the laying of pipeline through their sprouting fields.

Thanks to the various financial and moral contributions of the Melio community and the aid of Breaking Ground, the task force realized the water project in June 2013, nearly two years after the community first approached Breaking Ground, and nearly eight years after the community contributions first began. The finished project consists of an electric pump down in the valley that takes water from the same groundwater source that further down supplies the pond. The pump sends this unpolluted groundwater through a pipeline up to a water reservoir in the village. From there, a series of tubes connect the reservoir to the five fountains placed along the side of the roads throughout the quartier.

While the community had some funds left in the bank by the end of the project, they could only afford to pay for the electricity cost of sending water from the pump to the reservoir three to four times a month. Even these occasional bursts of water supply would be interrupted due to system breakdowns, such as women cultivators accidentally hitting a pipe in the field or the melting of the pump’s power cable. These interruptions to the project operation cost money to repair, and the community quickly became aware that they would need to institute a payment system – and soon – to deal with these costs.

36 “It’s head that works.” Tsopgue, Informal Interview (Tour de Quartier). 3 Dec, 2014.
37 Tsopgue, Informal Interview (Tour de Quartier). 20 Nov, 2014.
39 Ibid.
Still concerned in insuring the success of the project, Breaking Ground recommended that the community work with another non-profit organization called Coopération Allemande (GIZ), which has a greater experience than Breaking Ground in water project maintenance. However, “un projet dans la décentralisation,” GIZ works to maintain water projects through the mayor of the region. Worried that the mayor might take over their project and yet not take good care of it, the community of Melio refused to work with the mayor or GIZ.

So without the instruction of an experienced external institution, the community began to organize a maintenance system of their own devising. As Laurent admitted, they always knew they would eventually need to create a payment system in order to have money for paying electricity bills and repairing system breakdowns – in essence, keeping the system sustainable – but they didn’t think of how to carry out this system until after they completed the project. The community brainstormed and finally determined to buy locks to secure the fountains and counters to keep track of how much water flowed through each fountain. With these pieces of equipment, they could set up a responsible at each fountain, who could both sell water and watch over the upkeep of the fountain.

Enough money was left over from the project to pay for the electricity bills as they set up this payment system, but they didn’t have enough money to invest in the necessary equipment. Thus, the community was forced to wait until the annual Congrès in August 2014 to find funding for their maintenance system. When the elites returned to the village for this annual reunion, the community was able to raise the funds they needed to purchase the counter, locks for the fountain faucets, and a security box to protect the counter and the on/off faucet inside. By popular applause at the Congrès this past summer, they nominated responsibilities and set the price of 1,25 CFA/1 liter of water or 25 CFA per a 20L bidon. Over the past couple of months, they have paid a technician to install the counter apparatus and bought the necessary material to set up a system that they hope will

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40 Djuissi, Email interview. 8 Dec, 2014.
44 Tsopgue, Informal Interview (Tour de Quartier). 1 Dec, 2014. A bidon is a common receptacle for gathering water. There is a picture of a bidon in the Appendix.
enable them to keep paying the electricity it takes to send water from the pump to the reservoir, with enough money saved in case of future breakdowns. Given that over the last year, thieves have stolen one faucet and children have broken another, the community also hopes that this equipment will help them safeguard the fountains.  

As François Wamba explained, “Ce projet est même comme un don du Ciel. Et quand Dieu te donne cette faveur, tu dois tout faire pour qu’il ne se gâte pas.” The community has determined a method that they hope will ensure the project’s success – a success that Tio Go Germaine, the nurse at the private clinic in the quartier, summed up best as, “C’est que l’eau coule et elle continue de couler.” Now what remains to be seen is whether the project and the current upkeep system will be able to meet these goals. While it is beyond the scope of this study to declare either the project or the system a success, what follows are my findings on the successful aspects of the current incarnation of the maintenance system, and an analysis of various obstacles that the project has encountered with this system in the beginning of its practice. For this task, my timing was fortunate: I arrived in the quartier on the day they held an “extra-ordinary” meeting of the development committee to start instituting this payment system, and over the next few weeks, I had the opportunity to research whether this “gift of Heaven” might endure to the hereafter or whether it, too, has an expiration date.

4. IMPACT OF COMMUNITY PARTICIPATION ON THE PROJECT

4.1 Participation and Success

The community of Melio knows when a water project is successful or not, because they have watched every project that the government has installed around their quartier fall into disrepair. In front of each Chefferie in the groupement of Tsobing, there is an old, rusty fountain that has not worked for so long that villagers have a hard time remembering when they were installed or who

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46 “This project is even like a gift of Heaven. And when God gives this favor to you, you must do all that you can to insure that it doesn’t deteriorate.” Wamba, Interview. 23 Nov, 2014.
47 “It is that water flows and continues to flow.” Germaine, Interview. 21 Nov, 2014.
even installed them. But they remember clearly that when the government installed one of the fountains, the water that streamed out was red in color. And no matter the color of the fountains, they remember clearly that water only flowed from all of them for a matter of months or even weeks. The pump of the well near Toufeng broke so many times, that the community gave up raising the money to fix it. As the representative of Toufeng explained, “Chaque deux mois, on a demandé à la communauté 62,000 francs pour la réparer. Et on a donné les 62,000 francs et après deux mois, la même chose. Donc, il faut qu’on l’abandonne.” Not only do these pumps break down because they’ve been badly constructed with poor material, but François Wamba explains that when the government constructs a pump, the communities doesn’t know how to maintain them once the government leaves:

Quand on fait un projet, et que la communauté n’est pas impliquée dans la gestion, c’est difficile que ça marche. Parce que l’état vient nous donner un cadeau et il part. On ne sait pas comment l’amener ! S’il y a un suivi pour ça, s’il faut une équipe de gestion, on ne sait pas. Bon, quand ça se gâte, comme ça il reste.

So despite these government projects requiring immense investment by the state and the community’s recognition of the immense relief that these pumps could provide, the projects continually fall quickly into disrepair and remain in that state due to poor construction and a lack of community knowledge for maintenance.

Yet, the water project realized by the community and Breaking Ground in 2013 still works a year later. When I ask Terèse Mada, a responsable of one of the fountains, if she thinks this most recent water project has been a success, she exclaims:

Depuis qu’on a installé l’eau ici, le jour quand on l’a ouvert, ça sort ! D’ailleurs, il y a d’autres points d’eau où après deux ou trois mois, l’eau ne sort plus. Mais depuis qu’on a installé ce projet, ça coule

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50 Ibid.
51 “Every two months, we asked the community 62,000 francs to repair it. And the 62,000 francs were given and after two months, the same thing. Thus, we had to abandon it.” Gniambé, Interview. 25 Nov, 2014.
53 “When one does a project and the community is not involved in the upkeep, it is difficult for the project to work. Because the state comes to give us a gift and leaves. We don’t know how to take care of it! If there is a follow-up for this, if it is necessary to have a maintenance team, we do not know. Thus, when it breaks, like that it stays.” Wamba, Interview. 23 Nov, 2014.
While the community finds the project a success because water flows and they hope will continue to flow, I suspect that the participative role the community played in the process helped ensure that their project prospered. Below, I investigate the factors of the Melio community participation that I found contributed to the success of this water project.

**Ensuring Quality by Involvement Throughout Construction**

The involvement of the community of Melio throughout the construction process helped ensure the realization of an efficient and effective water project. For one thing, Paul Zangue of Breaking Ground notes, “La participation de la communauté nous rassure que le projet d’eau ne coûte pas trop chère.” He explains that government water projects can cost much more than community-implemented ones, because the government will pay nearly twice as much for essential pieces of equipment like pumps, and because projects financed by community money ensure that the population will carefully use the material purchased.

Furthermore, the participation of the community ensures that the material used for the project is of good quality. Paul remembered that during a reunion of the Realization Committee, the community rejected the current choice for the sand to be used during the construction, and insisted on buying a different one that would insure project longevity. The involvement of the community during these committee meetings also meant that there was a space for community members to share concerns and oversee the project construction. Several villagers noted that the technician appeared to be building a reservoir that was smaller than the planned size of 10 cubic meters. When they confronted the technician about the size, and measured the reservoir, the community

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54 “Since we have installed this water here, the day when it opened, water came out! Elsewhere, there are these other water sources, where after 2 or 3 months, water no longer flowed. But since we have installed this project, it flows normally. The project, here, has been working for a year! And when the water flows, the water is also very clear, very clean for drinking. Thus, it is truly a success!” Mada, Focus Group. 25 Nov, 2014.
55 “The participation of the community reassures us that the water project won’t cost too much.” Zangue, Interview. 14 Nov, 2014.
discovered that he had indeed tried to cheat them, and insisted that he fix the problem – for free.\textsuperscript{57} Thus, the participation of the community throughout the realization of the project can make all the difference in its success. As Paul explains:

\begin{quote}
Si c’est un projet de l’état ou un projet où il n’y a pas de participation communautaire, [les gens de la communauté] ne disent rien, parce qu’ils ne sont pas impliqués. Ils ne savent rien des dimensions ou les matériaux et ils ne les surveillent pas. Mais quand la communauté est impliquée, ils ont la volonté de voir que tout est bien fait et le contrôle est assuré.\textsuperscript{58}
\end{quote}

These examples show that when the community is involved in the construction process of a water project, their participation and interest in the success of the project translates into a project that is well constructed and meets the expectations of the community. This theme can be further seen in the placement of water fountains around the quartier of Melio. Originally, only four fountains were part of the construction plan. But when Breaking Ground brought a map around the quartier and asked villagers to pinpoint where they would like the fountains to be placed, they discovered that, in fact, four fountains would not be enough, and a segment of the population would feel excluded from the project if they didn’t construct a fifth fountain.\textsuperscript{59} So they added a fifth fountain into the plan. By popular applause in reunions, the community determined exactly where they would place these fountains to best serve the population.\textsuperscript{60} Given the participation of the community throughout the construction of the project, the Melio community ensured that the finished product would be of high quality and would meet their needs.

\textit{Sense of Ownership}

Community participation and project ownership build off each other. To start with, the Melio community was driven to contribute to the project, because they saw it a project of their community. As Laurent explains, “Dans Melio, comme chacun sait c’est sa propre affaire, tout le monde est content, est fier, même les petits enfants, de mettre le main dans le poche et cotiser pour

\textsuperscript{57}Zangue, Interview. 14 Nov, 2014.
\textsuperscript{58}“\textit{If this is a state project or a project where the community is not involved, community members don’t say anything, because they are not involved. They know nothing of the dimensions or the materials and they don’t watch over them. But when the community is involved, they have the will to see that all is well done and the supervision is assured.}” Ibid.
\textsuperscript{59}Ibid.
\textsuperscript{60}Tsopgue, “Field Visit to the Reservoir.” 22 Nov, 2014.
le projet.”61 Not only did the community contribute financially, but they also gave their land to the project for free – no doubt further decreasing the costs for the project. When I asked one such donor named Moïse why he felt compelled to give his land so generously, he explained, “Nous avons donné la terre pour le château avec un bon coeur. Parce que c’est pour nous tous.”62 Laurent echoes this sentiment, when he explains why women farmers allowed part of their harvest to be destroyed for the sake of laying down pipes in the germinating farm fields:

Le projet est pour tout le monde. Ce n’est pas ma propriété. C’est pas ta propriété. Ce n’est pas pour tel, ce n’est pas pour tel, c’est pour tout le monde! C’est important pour tout le monde. Alors, les gens sont heureux de donner leur terrain. Parce qu’ils voient l’importance du projet.63

Viewing the project as the property of the community inspired the population to donate their land and sacrifice their crops. But making these contributions did more than just help realize the project: it also helped increase the community’s sense of ownership of the project. As the representative of Toufeng explains:

Quand la communauté cotise ou bien participe à la réalisation d’un projet, ils se sentent concernés de la chose. Ils ne voient pas le projet comme celui d’une autre… et s’ils sont concernés comme ça, ils vont défendre tout ça. Ils vont tout faire pour que ça soit toujours bien.64

Giving contributions to a water project is a method of claiming responsibility. In government projects, the water system is installed in a village, the government leaves, and the community is unsure afterwards who is supposed to upkeep the project.65 However, with community projects, where the population has contributed money, they feel a responsibility to fiercely guard this investment. As Paul Zangue explains, “Quand on dit aux gens combien on a dépensé pour acheter un robinet et quand ils ont contribué à cet effort, ça va sécuriser cet investissement, parce qu’ils

61 “In Melio, since each person knows that this is their own affair, everyone is happy, is proud – even the little children – to put their hand in their pocket and contribute to the project.” Tsopgue, Informal Interview (Tour de Quartier). 20 Nov, 2014.
62 “We gave the land for the water reservoir with a good heart. Because it is for all of us.” Mafo, Informal Interview (Tour de Quartier). 23 Nov, 2014
63 “This project is for everyone. It is not my property. It is not your property. It is not for him or her, it is for everyone! It is important for everyone. Thus, people are happy to give their land. Because they see the importance of the project.” Tsopgue, Informal Interview (Tour de Quartier). 20 Nov, 2014
64 “When the community contributes or participates in the realization of a project, they feel implicated in the thing. They don’t see the project as belonging to someone else … and if they feel involved, they will protect it. They will do everything so that it will always work well.” Gniambé, Interview. 25 Nov, 2014.
65 Francis Wamba
gardent le projet comme leur affaire.”  

And in fact, this is just the case in practice, for as François Wamba details:

Si un enfant touche un robinet, un adulte exige qu’il doive prendre soin du projet. Et les enfants savent que ça là-bas, ça c’est une chose précieuse. Et quand on l’ouvre, on prend soin, pour qu’il ne se gâte pas.

In a loop of positive feedback, the participation of a community in the realization of a water project ensures a sense of ownership of this project, which in turn, ensures further participation in the maintenance of the system. In essence, the community helped finance the water project because they saw it as their project, and by contributing to the cost, they increased their sense of responsibility for the project.

It is these very same contributions to the project and this sense that the project is the property of the community, which make the community so wary of working with the mayor for the upkeep. At least two separate members of the community expressed their concern that if they worked with the mayor, the community would lose control of the maintenance, and the mayor wouldn’t ensure the upkeep of the project as they would. Specifically, Antoinette Wampé is concerned that the mayor will take over a project that the community built without any help from him and start charging them fees, as he has done in the past with stores that village women built in the market place.

And Laurent notes that since the government did not aid the community with the construction of the project, “Ce n’est pas bon qu’au moment où le projet est déjà fini, la mairie essaie de prendre ça en charge.” Furthermore, Laurent worries that if the project were the responsibility of the mayor, he wouldn’t have the time or the will to take care of the project as well as the community would:

66 “When one tells the people how much one has spent to buy a faucet and when these people have contributed to this effort, this will secure the investment, because they will take care of the project like their own property.” Zangue, Interview. 14 Nov, 2014.

67 “If a child touches a faucet, an adult requests that he takes care of the project. And the children learn that this project over here is a precious thing. And when one opens it, one takes care of it, so that it doesn’t break.” Wamba, Interview. 23 Nov, 2014.


69 “It is not good that at the moment when the project is finished, the mayor tries to take over it.” Tsopgue, Informal Interview (Tour de Quartier). 23 Nov, 2014.
Nous ne pouvons pas donner notre projet à quelqu’un pour que il devienne sa propriété. C’est ça que nous ne voulons pas. Parce que quand le projet est pour nous, depuis 16h, je suis dehors. Si c’est la propriété de la commune, est-ce que je peux être ici dehors pour travailler comme ça? Pour m’occuper de l’entretien pour qu’on soit sûr que tout va bien? Jamais. On veut que le projet reste la propriété de la communauté. Parce qu’on peut s’occuper bien avec ça et on peut l’arranger immédiatement.70

These examples illustrate that the community has come to feel such a responsibility towards the project that they do not trust someone who has not been involved in its realization to take care of the project well.

So unlike in government projects where, “on ne sait pas qui doit payer quand il s’est gâté... quand on a cassé les tubes dans la route, il n’y a personne pour dire qu’il faut qu’on les remplace,”71 when the community contributes to a project, a spirit of responsibility – of ownership – begins to germinate. Contributions, financial and otherwise, ensure that the community internalizes the value of each piece of the system and the overall value of the project, so that they teach their children to treat the equipment with respect and concern themselves with the upkeep of the project.

Social Responsibility

Not only do community members have a sense of responsibility towards their water project, but also towards each other. When they began the current system of maintenance, the community nominated responsables of each fountain by choosing them through popular applause during a community-wide reunion. Terèse, one of the chosen responsables of the fountain, was often late or absent from her post. One evening, several members of the community chastised her for failing to do her job, and the next day, she was at her fountain an hour earlier than obligated, and stayed over half an hour later.72 When I asked her if she wanted this post, this is how she emphatically responded:

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70 “We cannot give our project to someone so that it becomes his property. That is what we don’t want. Because when this project is for us, since 4 o’clock, I am outside. If it were the state’s project, could I work outside like this? To concern myself with the upkeep so that we can be sure that everything will work well? Never. We want this project to remain the community’s property. Because we can look after it well ourselves and we can fix it immediately.” Ibid.

71 “We do not know who should pay when there is a breakdown... when someone breaks a pipe in the road, there is no one there to say that it must be replaced.” Wamba, Interview. 23 Nov, 2014.

Despite not having volunteered herself for this job, Terèse was chosen on the basis of popular applause at the community reunion, and so has a strong sense of responsibility towards the water project inspired maybe not so much by her desire to ensure its smooth-running, but by her desire for the approval of her fellow villagers.

This sentiment is echoed by Fopa Étienne, another responsable for the fountains, who tends to be a more reliable guardian than Terèse. On arriving home from a night-long bus ride, he discovered that children were stealing water from his fountain by dipping their hand under the security box to turn on the water faucet. After chasing them away, he hurried all the way to the other side of the quartier to inform Laurent about the attempted theft. Determined to secure the water in the fountain, he bought nails from the market with his own money and scrounged up brushwood to cover the sides of the box and prevent children from slipping their hands under there to continue stealing. Encountering the same problem and inspired by his work, other responsables followed suit, constructing wooden boxes around their counter boxes, too. Impressed by his effort, when I asked Fopa Étienne about how he saw his role as the responsable of a fountain, he told me:

Il pèse sur moi. J’ai une responsabilité vers la communauté. Je suis responsable just parce que c’est le service social… On n’a pas encore des moyens pour payer les gens pour le travail qu’il fait. Donc, tout le monde se donne.

This statement of the “weight” of his assignment shows the power that perceiving a responsibility as an unpaid social service can hold over the individual. When Fopa found his land chosen by his community for the placement of a fountain, and himself chosen as the guardian, he gracefully acquiesced to these demands because he perceived them as “le choix de la communauté.”

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73 “They chose me! They chose me at the meeting to do this work, therefore I must do it. Since they chose me, I must work.” Mada, Tour de Quartier Journal. 28 Nov, 2014.
74 Yucel, Tour de Quartier Journal. 20 Nov, 2014.
75 “It weighs on me. I have a responsibility towards the community. I am a responsible just because it is a social service… We do not yet have means to pay people for the work they do. Therefore, everyone makes an effort.” Étienne, Informal Interview (Tour de Quartier). 27 Nov, 2014.
76 “the choice of the community” Étienne, Informal Interview (Tour de Quartier). 27 Nov, 2014.
As the above example demonstrates, when children were caught stealing water or suspicions of water vandals emerged or the reservoir overflowed, the community would come to Laurent to discuss the problem. And almost every day, when a new challenge to the current system would arise, Laurent would smile rather wistfully at me and say, “Vous voyez? La gestion n’est pas facile.”

Finally, I asked him why he did all this work, and he explained his involvement to me:

Mon profit dans ce projet c’est l’honneur. Je m’engage parce que je suis la personne qui a initié le projet et je ne peux pas le regarder seulement sans faire rien. Je dois assurer que le projet est un succès à cause de mon honneur.

Given his involvement throughout the project, Laurent feels that his honor to the community is at stake should the project not succeed. Thus, just like Fopa Étienne and Terèse, Laurent feels a sense of social responsibility towards the project, which drives him to ensure that the project prospers. But that is not all, for as Laurent also told me:

Je veux être une partie de l’histoire du quartier. Ça serait un grand honneur pour moi. Même si je meurs, je veux que les enfants du quartier disent qu’il y avait un Monsieur Tagne Laurent ici, c’est lui qui a apporté ce projet dans ce village. Il a beaucoup travaillé!... Rien ne peut passer sans quelqu’un qui s’en occupe. Pour que le développement se passe, il faut les gens qui puissent se sacrifier.

For the sake of entering the annals of his village history, Laurent is willing – even honored – to “sacrifice” himself for the development of his quartier. So it is not just the fear of losing honor, but also the prospect of gaining honor in their society that propels those who have assumed responsibility for the project to work so hard and to give so much of themselves for its success. Thus, the power of social responsibility both warrants and inspires the toil necessary for the project to succeed.

Evidence of Success

77 “You see? Maintenance is not easy.” Tsopgue, Informal Interview (Tour de Quartier), 27 Nov, 2014.
78 “My profit in this project is honor. I am committed because I am the person who initiated the project and I cannot just watch it without doing anything. I must ensure that the project is a success because of my honor.” Ibid.
79 “I want to be part of the history of this quartier. This would be a big honor for me. Even if I die, I want the children of the quartier to say that there was a Monsieur Tagne Laurent here, ‘It was him who brought this project to this village. He worked a lot!’... Nothing can happen without someone to see to it. So that development happens, it is necessary to have people who sacrifice themselves.” Ibid.
Thanks to the community’s participation throughout the construction process, the awareness of ownership attendant on this participation, and a sense of social responsibility towards project success, the community brought water to their village – and that water still flows today from the fountains. As one participant said, “L’union fait la force.”

When asked if she thought the project would be sustainable, one community member observed confidently, “Bon, en voyant que ce projet fonctionne encore, on est sure qu’il continue à durer.” And it’s true, so far the community has been able to tackle the problems they have encountered to make sure the project continues to function and water continues to flow. Soon after the realization, the pump stopped worked, because an important electrical cable was not strong enough to hold the force of the current, and melted. Using leftover funds raised from the project, the community was able to replace this cable and continue bringing water to the fountains.

When children broke one faucet and other ones did not work properly, the community saw it as their responsibility to upkeep the project, and replaced them. After rejecting the mayor’s offer of help with maintenance, the community raised the funds they needed to make an investment in water counters and locks that they could use to create a payment system. On instituting this system and finding that children were stealing the water, responsables fortified their fountains with nails they scrounged up from the community members and pieces of brushwood they collected from their environment. Thus, the community’s commitment to the sustainability of the system has so far enabled its endurance.

Because Melio has secured this source of fountain water, the lives of community members have changed. Instead of spending all evening gathering water in multiple trips from a source kilometers away, children now have more time to study and women have more time to take care of

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81 “Well, in seeing that the project still functions, we are sure that it will be sustainable.” Mada, Focus Group. 25 Nov, 2014.
84 Ibid.
85 Yucel, Tour de Quartier Journal. 20 Nov, 26 Nov, and 1 Dec, 2014.
their family, thanks to this system that brings water right to the side of the village road.\textsuperscript{86} No longer do children have to risk their lives gathering water from the deep end of a dangerous source, because water now flows out of a fountain faucet right into their waiting bucket.\textsuperscript{87} In fact, with the addition of the fountain water to their village, community members no longer have to risk suffering from illnesses like diarrhea or typhoid fever due to the necessity of drawing drinking water from the polluted pond. For the cost of 25 CFA for a 20 L \textit{bidon}, they have the option to drink water piped right from the ground, free from contamination by animal dung, rotting leaves, or spilled petrol.

While the analysis of the fountain water has not yet been processed at the time of the writing of this paper, there have been indicators that health in the community is improving. Tazo Jean notes, “Maintenant, parce que le projet marche, on a déjà vu une diminution du nombre des gens qui vont au marigot.”\textsuperscript{88} Perhaps thanks to this, a community doctor noted that during the survey of the population’s health conducted this past year, only 70\% of the population suffered from water-borne illnesses, down by 30\% from the previous year.\textsuperscript{89} One woman found that since she had been drinking the fountain water, she had not needed to go to the hospital for two months. Before the project, she used to have to go to the hospital every two weeks during the dry season, when her need for water drove her to frequently drinking from the pond.\textsuperscript{90} Despite these testaments, Laurent points out that in the past year, the fountain water was only available at most four times a month, and has only become available every day since the institution of the payment system. As he says, “On ne peut pas boire l’eau potable un jour et dire que les maladies sont finies!”\textsuperscript{91} The nurse at the private health clinic in the village agrees that it is too soon to yet see a diminution in the instances of water-borne diseases in the community, explaining, “On doit attendre pour voir l’effet,” but adding,

\begin{itemize}
\item \textsuperscript{86} Mada and Wampé, Focus Group. 25 Nov, 2014.
\item \textsuperscript{87} Ibid.
\item \textsuperscript{88} “Now, because the project works, we have already seen a decrease in the number of people going to the pond.” Jean, Interview. 22 Nov, 2014.
\item \textsuperscript{89} Wamba, Interview. 23 Nov, 2014.
\item \textsuperscript{90} Mada, Focus Group. 25 Nov, 2014.
\item \textsuperscript{91} “One cannot drink potable water for one day and claim that all the illnesses are over!” Tsopgue, Informal Interview (Tour de Quartier). 1 Dec, 2014.
\end{itemize}
“Je suis sûre moi-même que le projet aide les maladies à diminuer.”92 Fopa Étienne does not need any convincing: on seeing researchers take a sample of the fountain water for analysis, he whispered to me, “Ça c’est leur regard. Nous savons que notre eau est pure!”93

If the water from this project is truly as potable as community members believe that it might be, the effect of the water on the public cannot be overstated. By restoring health to a population, a source of potable water can have far-reaching consequences for the development of the community. As Laurent effuses about the project, “Ça va nous épargner des maladies hydriques, ça va contribuer à notre développement. Quand tu as de la bonne santé, tu peux travailler bien. Les gens peuvent cultiver, ils peuvent faire le commerce, ils peuvent étudier.”94 Essentially, the addition and the accessibility of a potable water source can advance the health of the general population and through that, the development of the village itself.

4.2 Participation and Challenges

While the community has managed to realize the water project, and maintain the flow of water for the last year, they have also encountered a number of obstacles that threaten the community implementation of the project upkeep.

**A Need for Sensitization**

There is a need for greater awareness in the Melio community about safeguarding the quality of drinking water and maintaining the system than has been met so far. As James Saltzman details in his history of *Drinking Water*, ensuring that a population drinks potable water entails source identification, source protection, treatment, and distribution.95 So far, Melio has successfully identified and protected an aquifer of groundwater that they have piped up to their village, and they suspect this water to be potable. But, as Fopa Étienne elucidated above, the community does not

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92 “We must wait to see the effect” “I am sure myself that the project helps illnesses decrease.” Germaine, Interview. 21 Nov, 2014.
91 “That is their concern. We know that our water is pure!” Étienne, Tour de Quartier Journal. 28 Nov, 2014.
94 “This will save us from water-borne illnesses, this will contribute to our development. When you have good health, you can work well. People can cultivate, they can do business, and they can study.” Tsopgue, Interview. 22 Nov, 2014.
95 Salzman, *Drinking Water* (76)
necessarily view the scientific analysis of the fountain water as critical. This lack of interest in water analysis and the ensuing water treatment may be explained by the results of a research project that found, “Some people are willing to pay for water quantity and convenience, but in low-income countries, many households will not pay for quality.” In addition, it seems that community members often judge water by its clarity and may not appreciate that the bacteria that makes them ill are too small to be seen. In this respect, there is a need for sensitization to raise the community’s awareness of the meaning of “l’eau propre.”

As for water distribution, Tio Go Germaine, the nurse at the private clinic is hopeful that the water project will decrease the instances of water-borne illnesses, but warns, “Ça ne peut pas être totale au niveau de la manque de la bonne conservation d’eau.” She has found that:

Il y a bien des gens qui peuvent recueillir l’eau propre et boire quand l’eau est sale parce que ils ne savent pas comment de la conserver. Parce qu’il y a des gens qui ne savent pas que leur bidon doit être d’abord propre avant qu’on prenne l’eau. Ils ne savent pas en gardant l’eau pour longtemps dans le même bidon, ça serait sale aussi. Beaucoup des gens ! Bien des gens ! Ils ne savent pas ça.

Due to this lack of knowledge about how to conserve water properly, community members can gather potable water from the fountains, and yet fall sick from drinking it, because they do not know how to protect the quality of the water. While I have seen a couple members of the Melio community swill around water in their bidon to clean it before filling the bidon up again, I’ve also peeked inside many a bidon to see dirt coating the insides, or, on one memorable occasion, reddish-brown streaks of leftover peanut oil.

Besides a need for sensitization on the importance of protecting the quality of potable water after gathering it, I have also noticed that there is a certain lack of acquaintance with the current system of water distribution in the village. Despite the determination of community members in

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96 Ibid (216)
98 “potable water”
99 “This cannot totally extinguish them due to a lack of good water conservation.” Germaine, Interview. 21 Nov, 2014.
100 “There are a lot of people who can gather potable water and drink dirty water because they don’t know how to conserve the water. Because there are a lot of people who don’t know that their bidon needs to be clean before they collect water. They don’t know that saving water for a long time in the same bidon will make the water dirty as well. Lots of people! Loads of people! They don’t know this.” Ibid.
101 Yucel, Tour de Quartier Journal. 27 Nov, 2014.
charge of instituting the payment system to advertise the price of water at each fountain,\textsuperscript{102} this dispersion of information has yet to be widespread. Until I corrected her during our interview, Tio Go Germaine believed that the cost of water was overly high at 50 CFA for one 20-liter bidon, despite the actual price being half that. She expressed her frustration at not knowing about when the community held meetings on the water project, explaining that she would like to attend them if only she knew what time and place they would be held.\textsuperscript{103} When I asked a high-school student named Staer Nginyu if she found water available for her use during the hours the responsables were required to be at the fountains, she asked me when these obligated hours were, since this was first she had heard of them. She also expressed frustration about being asked to pay, since she did not know why paying these fees for gathering water were important:

\textit{Payer c'est mon problème, c'est ça qui me dérange un peu. Parce que je ne vois aucune importance. On a mis l'eau pour que tout le monde puisse la puiser, et à la fin, à ce moment, il a dit qu'on doit payer. Je ne comprends pas pourquoi.}\textsuperscript{104}

Clearly, there is a lack of communication to the community about the new water system. This confusion about the price schedule extends as far as the responsables, for Gerad, my host brother and the responsable of the fountain next to our house, quoted me the pricing plan that he used, which differed significantly from the prices that the community had determined of 25 francs for 20-liters. Gerad explained how he would sell a bidon of 30-liters for 50 francs, with anything below being 25 francs and anything above 75 francs. Throughout our interview, Gerad would ask me to clarify points of the payment schedule for him, and even told me how that very day, he had refused service to a man who asked him to fill twenty 1.5-liter water-bottles for 50 francs, because he did not think the price would be adequate, even though the contribution fit well within the pricing parameters set by the community.\textsuperscript{105}

\textsuperscript{102}“Field Visit to the Water Council Réunion.” (observation of meeting)

\textsuperscript{103}Germaine, Interview. 21 Nov, 2014.

\textsuperscript{104} “Paying is my problem, that is what upsets me a little. Because I don't see any importance in this. We have set up this project so that everyone can gather water, and now at the end, at this moment, they say that we need to pay. I don't understand why.” Nginyu, Focus Group. 23 Nov, 2014.

\textsuperscript{105}Donhache, Interview. 22 Nov, 2014.
derrière eux à tout moment. C’est à eux de décider comment ils veulent vendre.” However, leaving it up to each responsible to decide on the payment schedule at their fountain creates inconsistency and confusion, further adding to the uncertainty of the community as the payment system is rolled out.

The students informed me that no one had ever come to the children’s weekly reunion to explain the payment system and expressed an interest in having this be a future event. However, Tio Go Germaine’s experience demonstrates that even when a community member is interested in learning more, the community struggles with the dissemination of information. Perhaps seeking to address this disparity of knowledge, Tazo Jean, the secretary of the realization committee, recommended instituting community-wide seminars to further educate the population — and I heartily agree that there is a need for these seminars in order to increase both consumer and responsible understanding of how to safeguard potable water and how the distribution system should work.

A Disagreement Over Payment Responsibility

At the last quartier-wide Congrès last August, the community decided by a round of popular applause that the price should be 25 francs for a 20-liter bidon. The financial contributions that consumers would pay to gather water from the fountains would go towards the cost of electricity essential for sending water from the pump to the reservoir, with the treasurer saving the remaining funds in the bank to be used in the case of system breakdown. However, the community remains divided over who should be paying for the system costs. As Staer explained, “Chaque jour, je ne peux pas avoir 25 francs chaque jour. Si un jour je n’ai pas d’argent pour puiser l’eau aux fontaines, je suis obligée d’aller au marigot et boire l’eau sale pour faire mes besoins.” Finding that the village population is “très, très, très pauvre,” the students believed that continual financial contribution by the village elites would be necessary, because if not, they wouldn’t have the money to pay for the fountain

106 “We cannot be behind them at every moment. It is for them to decide how they want to sell.” Tsopgue, Informal Interview (Tour de Quartier). 3 Dec, 2014.
109 “Each day, I can not have 25 francs each day. If one day, I don’t have money to gather water from the fountains, I am forced to go to the pond and drink dirty water there to meet my needs.” Nginyu, Focus Group. 23 Nov, 2014.
water every day, and thus be forced to resort to drinking the free, but dirty pond water.\textsuperscript{110} Elites such as the adjoint to the mayor and François Wamba agree that it is the responsibility of the elites to pay for providing the water service to the village, because in the words of the former, “ce n’est pas juste ou raisonnable d’espérer que les gens pauvres au village puissent contribuer pour l’eau chaque jour.”\textsuperscript{111} François Wamba detailed a payment plan that he believed could ameliorate this situation: at the annual Congrès each year, elites would estimate the electricity costs and possible maintenance costs for the project and raise funds from the community (but primarily bank on the contributions of wealthy village elites) for the functioning of the project during the next year. Wamba also suggested that when the community got around to creating rules for the creation of private lines extending from the water system to compounds, the wealthy people who could afford to pay for installing private lines could split the monthly electricity cost of the system between them, effectively subsidizing the cost of providing water to the public by the road-side fountains. He sees a need for providing free water to his community, because:

\begin{quote}
Il y a déjà quelqu’un qui ne peut pas payer le prix, parce qu’il y a déjà des gens qui volaient de l’eau ! Parce qu’ils n’ont pas d’accès pour 25 francs. Non, si on peut donner de l’eau gratuitement pour tout le monde… ça c’est idéal. Les gens ne doivent pas retourner à la source à cause de manque d’argent. Toute la population peut boire l’eau potable.\textsuperscript{112}
\end{quote}

And, in fact, the wealthy subsidizing the cost of water for the poorer public is not such a novel idea: in the oligarchy of Ancient Rome, the government charged those with private water lines a special water tax called the vectigal that covered the cost of providing water in public lacus spread throughout the city.\textsuperscript{113} So demand for private water effectively subsidizing public supply of water is a concept rooted in historical precedent.

However, not everyone agrees that consumers should receive water for free. As Mr. Zangue of Breaking Ground relates:

\begin{quote}
“very, very, very poor” Nginyu, Focus Group. 23 Nov, 2014.

“It is not just or reasonable to expect that the poor population in the village can contribute to buy water each day.” Djiométi, Informal Interview. 3 Dec, 2014.

“There are already people who cannot pay the price, because there are already people who steal water! Because they don’t have access to it for 25 francs. No, if we could give water for free to everyone… that would be ideal. People would not have to return to the pond because of a lack of money. The whole population could drink potable water.” Wamba, Interview. 23 Nov, 2014.

Salzman, Drinking Water (54)
\end{quote}
Si quelqu’un vient casser un robinet, personne ne le fixe pas quand ils n’ont pas contribué. Parce qu’ils voient le projet comme la chose des autres, pas leur même. Mais parce qu’ils ont contribué, chaque personne dans la communauté est concerné. Ils croient que le projet est un investissement de toute la communauté et chacun y veille.114

Insisting on contributions from village consumers forces the primary users of the system to internalize the cost and thus the value of the project, helping guarantee that they will work to safeguard a project that they are continually investing in. Furthermore, Laurent explains that receiving continual contributions from the community allows for a greater ability to meet unexpected expenses:

Peut-être les élites peuvent contribuer une fois par an, mais en attendant on fait comment? Il faut l’argent qui sort directement des consommateurs au moment où ils puisent l’eau pour nous permettre d’arranger les petites pannes immédiatement.115

Depending on elites for contributions means a loss in flexibility and rapidity, but puts less of a burden on a poor population. Thus, the debate between the wealthy annually financing the system and the poorer consumers making small continual payments stands. In the meantime, the price for gathering the typical bidon of water from the fountain rests at 25 francs. In the first two weeks of the payment system, thieves of the water have been rampant and the project has failed to make cost recovery, so that responsables of the water project find that there is a significant gap between the water distributed and money collected.116 While the price of gathering water for each bidon does cause consumers to internalize the cost of the water, it also forces some of the population to continue gathering contaminated pond water to meet their drinking needs and challenges the project’s ability to be self-sustaining.

A Lack of Organization

114 “If someone breaks a faucet, nobody will fix it when they haven’t contributed. Because they see the project as something of others, not their own. But because they have contributed, each person in the community is concerned. They believe that the project is an investment of all the community and everyone watches over it.” Zangue, Interview. 14 Nov, 2014.

115 “Maybe the elites can contribute once each year, but in waiting for this, what will we do? It is necessary to have money that comes directly from consumers when they gather water to allow us to fix small breakdowns immediately.” Tsopgue, Informal Interview (Tour de Quartier). 23 Nov, 2014.

Haphazard organization is a serious challenge facing the success of the water project. Below are several aspects of the project where disorganization has wreaked havoc.

A. Absence of a Maintenance Committee

When the community rejected the suggestion of Breaking Ground to work with the GIZ and the potentially untrustworthy mayor, they had to come up with a maintenance system of their own. In the process of developing a payment scheme and searching for investment to install the necessary equipment, Laurent explains, “On ne peut pas créer un comité de gestion quand il n’y pas une chose pour suivre.” The community has yet to create this maintenance committee – so unlike the past habitual meetings of the realization committee, where community members could regularly gather to resolve problems that arose during the realization, it is now much more difficult to call community-wide meetings and thus, that much more difficult to coordinate how to address maintenance challenges together.

To hold meetings now, a community member has to suggest to the president of the development committee that they hold an “extra-ordinary” meeting to tackle a problem. If the president of this overseeing committee, who lives in Yaoundé, deems the matter important enough, he will issue an order to the representative of the chef du quartier to organize a reunion, such as the one that I observed on first arriving in the village. Understandably, these “extra-ordinary” meetings are few and far between, because community members view them as a recourse only when there is a particularly big challenge to resolve or pressing task to address. While the realization committee has formally disbanded, the committee members are still the ones involved in making the decisions, but without the framework of regular community-wide meetings, the formal definition of tasks, and on the account of their own “volonté.” In this lack of community coordination to resolve problems, Laurent explains, “Si je trouve un problème et si je peux trouver la solution, parce

117 “We cannot create a maintenance committee when there is nothing to take care of.” Tsopgue, Informal Interview (Tour de Quartier). 1 Dec, 2014.
118 Ibid.
120 “will” Tsopgue, Informal Interview. 3 Dec, 2014.
que je suis sur le terrain, je le fait.” This is necessary, because as Fopa Étienne determined when he built the brushwood wall around his counter box:

“Actuellement, j’ai fait ça provisoirement. On peut venir après pour arranger ça mieux. Mais il faut que je l’arrange provisoirement vite. Je n’ai pas attendu. Parce que si j’attends le comité, on va attendre, attendre, attendre. Pendant qu’on attend, on sera en train de perdre l’eau. Ça ne peut pas marcher.”

Not only does the lack of a maintenance committee limit the participation of the whole community in resolving problems and challenge the village’s ability to quickly find long-term solutions, but it also puts a burden on community members who pick up the mantle of arranging this disorganized effort. As Laurent, a self-defined “tout-fait” and “l’homme du terrain,” describes:

“Maintenant, j’ai oublié de nourrir mes poules de temps en temps! Je dois marcher du jour à la nuit pour gérer le projet. Je suis très occupé avec tout ça. Je souhaiterais que la réunion siège le plutôt possible pour créer le comité de gestion.”

The presence of a maintenance committee is essential for facilitating further community coordination and participation in the maintenance of the project. While Laurent often refers to this time in the system’s life as the “phase d’experimentation,” the absence of a maintenance committee during this time severely challenges the community’s ability to quickly and satisfactorily tackle problems that arise by finding solutions together.

In one particularly pertinent example, despite the community having realized the water project over a year earlier, they still have not come up with rules for the creation of private lines. This is problematic because four compounds of the community attached to the water system soon after the realization of the project. While the community chastised these four households and forbid the installation of any more private lines, they remain paralyzed to further regulate these private lines or even cut them, until the creation of the maintenance committee, who has the power to decide on

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121 “If I find a problem and if I can find the solution, because I am on the ground, I will do it.” Tsopgue, Informal Interview. 1 Dec, 2014.
122 “Currently, I have arranged this temporarily. One could come later to arrange it better. But it is necessary that I arrange this temporarily quickly. I have not waited. Because if I wait for the committee, one will wait, wait, wait. While we wait, we will be losing water. This cannot work.” Étienne, Informal Interview (Tour de Quartier). 27 Nov, 2014.
123 “do-it-all” and “man on the ground”
124 “Now, I forget to feed my chickens from time to time. I must work day and night to take care of this project. I am very busy with all this. I want the meeting to take place as soon as possible to create the maintenance committee.” Tsopgue, Informal Interview. 1 Dec, 2014.
125 “trial period”
the parameters for private lines. In the meantime, these private lines continue to suck water from the public reservoir without constraint, since they are not subjected to the same lock and counter mechanism of the public fountains. The currently nonexistent maintenance committee is the only entity with the power to decide how they should pay fees. To create the maintenance committee and nominate community members to serve on its board, the whole community needs to be present, which only happens once every year at the Congrès. Noting that, “La création d’un comité de gestion est la clé pour tout,” Laurent is considering suggesting that the community held an “extraordinary” meeting of the development committee this Christmas when many village elites return to the village. He hopes that such a meeting will provide a chance for the community to discuss together the various problems that have arisen in this “phase d’expérimentation” and maybe even establish a maintenance committee. But until the elites return to the village and the maintenance committee is formed, the timely participation of the whole community in upkeep decisions is severely limited. Moreover, the dependency on elites – who often don’t live in the village – to lead the creation of this committee means that the village is forced to rely on somewhat external actors to slowly resolve their problems. Laurent admits that when the community nominates members for the maintenance committee, he hopes that they will choose people who live in the village, who would be more able to quickly identify problems and find solutions than elites based elsewhere. As of now, the community’s ability to independently address problems and rapidly organize solutions is quite restricted, due to the lack of a maintenance committee with regular meetings.

B. Unavailability of the Water

From taking walks around the quartier of Melio each night, I could see that responsables of the fountains were irregularly present during the obligated hours set forth by the reunion. The table below summarizes the percentage of times that I found each responsable or a substitute at their post

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127 Étienne, Tour de Quartier Journal. 3 Dec, 2014.
128 “The creation of the maintenance committee is the key to everything.” Tsopgue, Informal Interview (Tour de Quartier). 1 Dec, 2014.
129 Tsopgue, Informal Interview (Tour de Quartier). 3 Dec, 2014.
during the compulsory hours of 4-6 when I carried out a tour of the quartier most nights around 5 o’clock:

Table 1: Availability of Responsible at Water Fountain\textsuperscript{130}

<table>
<thead>
<tr>
<th></th>
<th>Fountain 1 - Teclaire</th>
<th>Fountain 2 - Terèse</th>
<th>Fountain 3 – Fopa Étienne</th>
<th>Fountain 4 - Gerad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personally Present</td>
<td>6</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Substitute Present</td>
<td>4</td>
<td>--</td>
<td>7</td>
<td>--</td>
</tr>
<tr>
<td>Times Fountain Observed</td>
<td>13</td>
<td>13</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Personally-ensured water availability</td>
<td>46%</td>
<td>31%</td>
<td>41%</td>
<td>19%</td>
</tr>
<tr>
<td>Overall-ensured water availability</td>
<td>76%</td>
<td>31%</td>
<td>100%</td>
<td>19%</td>
</tr>
</tbody>
</table>

(Note: Fountain 5 is not included in this table, because it was broken throughout the time I was carrying out research in the community).

As this table shows, during the first few weeks of the project, it was unlikely for the population to find the fountain open during the required hours. Of note is that responsables such as Teclaire and Fopa Étienne who found substitutes to cover for them when they were away at market or traveling, increased the likelihood of their fountain’s availability during these obligated hours by an average of two-fold. In contrast, if you stopped by the fountains of Gerad and Terèse during the compulsory hours of 4-6 o’clock at night, there would be a 70-80% chance that you would find no responsable present and the water unavailable.

On arriving at Terèse’s fountain and finding the guardian not at her post and the fountain locked, Regine Guimegue expressed her frustration to me:

Elle est en retard. Elle n’arrive pas. Elle a pris en charge la responsabilité de cette fontaine et elle ne travaille pas… Les gens quittent leur maison pour aller là-bas pour puiser l’eau et elle n’est pas là. Alors, on doit retourner et aller plus loin à l’autre fontaine! Ce n’est pas normale!... Les gens ont un besoin d’eau et elle n’est pas là. Et l’eau qui est juste là-bas n’est pas disponible!\textsuperscript{131}

Given the weight of carrying 20-liters of water on your head, it is no wonder that community members are so angered by having to search further from their house for a source of water, when

\textsuperscript{130} Yucel, Tour de Quartier Journal. 16 Nov - 3 Dec, 2014.
\textsuperscript{131} “She is late. She doesn’t arrive. She has taken charge of this fountain, but she doesn’t work… People leave their house to gather water and she is not there. Thus, we must return from where we came and go further to the other fountain. This is not right!... People need water and she is not there. And the water that is just there is not available!” Guimegue, Informal Interview (Tour de Quartier). 27 Nov, 2014.
there could be a source of water closer to them that is rendered inaccessible by the failure of responsables to be at their posts at the required times. Interestingly, the receipts that Laurent gathered in the last few weeks from responsables selling water tell a slightly different story of responsible accessibility:

Table 2: Revenue Collected by Responsables Nov 15 – Dec 3132

<table>
<thead>
<tr>
<th>Responsible</th>
<th>Money Collected (CFA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gerad</td>
<td>4,725</td>
</tr>
<tr>
<td>Fopa Étienne</td>
<td>3,500</td>
</tr>
<tr>
<td>Teclaire</td>
<td>1,350</td>
</tr>
<tr>
<td>Terèse</td>
<td>500</td>
</tr>
</tbody>
</table>

While the frequently absent Terèse still trails far behind the group in the amount of water sold, this table shows that Gerad, the person who I only found to be present at his fountain 19% of the time during required hours, actually leads the responsables in bidons sold. Asked to illuminate this, Gerad explains, “Dès que je rentre de la classe, directement j’ai ouvre l’eau. Donc, je n’ai pas des heures fixes pour ouvrir l’eau.”133 While Gerad may make himself available during outside hours and in fact, may have sold the most water (or at least turned in the most receipts), it’s still problematic that Gerad is unpredictably present. I’ve experienced firsthand people coming up to our house during the obligated hours asking for someone to turn on the water and observed children waiting for Gerad to open the fountain well after 4 o’clock. Due to its sporadic unavailability, the very water that should be so accessible to the population of Melio may absorb time that they could be using to productively accomplish tasks like studying or cultivating – and could make the population find gathering water from the pond more convenient. The current unreliability of certain responsables undermines the organization of the system and threatens the effectiveness of the project’s mission to bring water to the people.

In addition, the availability of water is further challenged by sporadic pump transmission of water to the reservoir. Laurent is the one who has taken charge of this job in the absence of a maintenance committee to appoint someone else. However, he is not always available to send water

132 Yucel, Tour de Quartier Journal. 3 Dec, 2014.
133 “As soon as I return from class, I open the water fountain right away. So I do not have fixed hours for opening the fountain.” Donhache, Informal Focus Group. 1 Dec, 2014.
to the pump, and when he sends his son Gerad to open it for him, the pump may be turned on late or not at all.\textsuperscript{134} During the couple of weeks I was in the community, there were two days when the pump was turned on an hour and a half late and two other times when it was not turned on at all.\textsuperscript{135} When asked, Laurent admitted that he had not alerted the other \textit{responsables} that the water was coming late or not at all, often because he did not have credit on his phone.\textsuperscript{136} Because of this lack of communication about the water distribution, \textit{responsables} would find their fountains empty of water and return home.\textsuperscript{137} This could mean that even if water arrived at the public fountains later that night within the obligated hours of operation, the water remained under lock and key, unavailable to the population due to poor community organization and communication.

\textit{A Struggle for Investment}

The lack of remaining capital for the project and the poverty of the village make investing in system maintenance, let alone system improvement, difficult if not impossible. Due to a scarcity of funds, the community cannot replace faulty fountain faucets, repair the broken fifth fountain, or fix system leaks quickly.\textsuperscript{138} On account of the cost for the new equipment and technician labor, it took over a month for the community to replace the melted cable of the pump, meaning that for six weeks during the dry season – when the community is most desperate for water – the \textit{quartier} did not have access to the fountain water.\textsuperscript{139} To make the investment in the counter and lock system that would allow the fountains to be opened daily, the community had to wait for a year until the Congrès of 2014 to raise the necessary funds.\textsuperscript{140} Thus, in a similar manner to the creation of the maintenance committee, investment in the project awaits the contribution of village elites. This matter of financing helps illustrates yet again how the maturity of the project is put on hold in anticipating the participation of elites.

\textsuperscript{134} Yucel, Tour de Quartier Journal. 27 Nov and 1 Dec, 2014.
\textsuperscript{136} Tsopgue, Tour de Quartier Journal. November 18 and 25, 2014.
\textsuperscript{137} Teclaire on Nov 27 and Terèse on Dec 1, 2014. Yucel, Tour de Quartier Journal.
\textsuperscript{138} Tsopgue, Interview. 22 Nov, 2014.
\textsuperscript{139} Tsopgue, “Field Visit to the Pump.” Nov 19, 2014.
\textsuperscript{140} Tsopgue, “Field Visit to the Reservoir.” Nov 22, 2014.
Not only is the community’s ability to maintain the project limited by the matter of available funds, but they also do not have the money to invest in the development of the system. Beauclair expressed a desire for the project to have its own electric meter, so that the community would not have to continue to rely on the generosity of a community member for the use of his electric meter, which currently sends water from the pump to the reservoir. As Beauclair explains:

Nous avons peur qu’il peut voir la facture et dire qu’il faut enlever son compteur du projet. Et puis nous n’avons pas d’eau à cause du compteur. Il faut qu’on ait un compteur uniquement pour le projet. ¹⁴¹

Reliance on an individual’s electric meter makes the project vulnerable to the benevolence of the individual, yet there are no means to install an electric meter uniquely for the project.¹⁴² Along the same lines, Mr. Zangue of Breaking Ground wants to see the community invest in a solar pump that would significantly reduce the cost of daily electricity usage and be easier to upkeep, but this pump requires an expensive 25,000-dollar initial investment.¹⁴³ In addition, almost every member of the community with whom I spoke expressed an interest in the extension of the fountain line to bring water closer to the fourth side of the quartier of Melio and neighboring quartiers. However, it would take a long time and an absence of any serious system breakdown for the current payment system to finance the addition of even just one more public fountain. Furthermore, sending water to the reservoir is a manual task, and without investment in an automatic water reader, there is currently no way to gauge the water level in the reservoir, except when it is completely empty – and no water flows from the fountains – or completely full, when a tube at the top of the reservoir lets out a stream of costly wasted water.¹⁴⁴

Moreover, as the payment system falteringingly begins, responsables are compelled to scrounge around for nails to secure their counter box, or even make the purchase themselves. So far, the job of a responsable remains an unpaid social service. Besides paying for electricity costs (the community

¹⁴¹ "We are afraid that he could look at the bill and say that it’s necessary to remove his electricity meter from the project. And then we won’t have water because of the lack of a meter. It is necessary that we have an electricity meter exclusively for this project." Ghogodongmo, Focus Group. 25 Nov, 2014.
still needs to pay the individual for their share of the use of his electric meter) and saving some money in case of system breakdown, the members overseeing the maintenance of the water project hope to be able to pay \textit{responsables} in the future. Tazo Jean notes, “Il faut que nous leur donnons un peu pour manger, un peu pour encourager les gens d’être là pour collecter des sous.”\textsuperscript{145} When I was surprised to observe the lack of communication between Laurent and the \textit{responsables} on the occasion of a reservoir overflow, Laurent explained, “Le manque d’information, c’est une des conséquences de la pauvreté… Quand on va commencer à motiver les \textit{responsables}, ils peuvent facilement avoir un peu de crédit.”\textsuperscript{146} As the finances of the project currently stand, \textit{responsables} do not have money to buy credit to communicate with each other, nor anything to fix their motivation so that they are encouraged to view their responsibility towards fountain as a job. In fact, given that the project used about two reservoirs full of water the first week, but only collected 2,000 francs (instead of 25,000 francs this volume should warrant), Laurent worries that there will not be enough money collected this month to pay the electricity bill, let alone save for future investments or breakdowns.\textsuperscript{147}

\textit{A Space for Outside Actors}

It is in this need for finance that there is a space for outside actor involvement and council. On learning that GIZ specializes in the maintenance of water projects, Laurent wondered if they could help teach the community how to repair faulty faucets themselves, rather than such a small problem necessitating that the village find the money to hire a technician.\textsuperscript{148} Similarly, Francois Wamba notes that without the financial help of a non-profit, “On ne pourrait pas faire le projet tout seul. On a bien la volonté, mais il y a un manque des moyens.”\textsuperscript{149} He hopes that even though they have realized the project, Breaking Ground “ne nous abandonne pas” and that the non-profit can

\textsuperscript{145} “It is necessary that we give them a little to eat, a little to encourage people to be there to collect the money.” Jean, Interview. 22 Nov, 2014.

\textsuperscript{146} “The lack of information, it is one of the consequences of poverty… When we begin to motivate the people taking care of the water, they can easily afford a little phone credit.” Tsopgue, Informal Interview (Tour of Quartier). 3 Dec, 2014.

\textsuperscript{147} Tsopgue, “Field Visit to Reservoir.” 22 Nov, 2014.

\textsuperscript{148} Tsopgue, Informal Interview (Tour of Quartier). 23 Nov, 2014.

\textsuperscript{149} “We could not do this project alone. We definitely have the will, but there is a lack of funds.” Wamba, Interview. 23 Nov, 2014.
“nous aider financièrement à faire des extensions, pour que tout le monde soit proche de l’eau.”\textsuperscript{150}

Furthermore, seeing Breaking Ground’s experience of outside communities as critical for helping the population’s project develop, he articulates a wish to continue receiving the council of the non-profit:

S’il peut nous aider de temps en temps avec des conseils, ça serait très bien. Il peut venir pour nous conseiller, pour contribuer aux discussions.\textsuperscript{151}

While this reliance on advice from outside institutions could create a degree of dependency if expected for the long-term, the community could learn a lot from outside institutions in the short-run on how to develop their system. In this recognition of François that the maintenance of the water project can and must continue to mature, the community grasps a fundamental tenet of the sustainability of a water system: the learning can never end and the upkeep can always keep evolving.

But in other unconscious ways, the community still has a lot to learn about the upkeep. Expressing his frustration about the new problems constantly surfacing in the community’s maintenance system, Laurent explained to me:

On ne peut pas tout prévoir! On n’est pas Dieu! Quand il y a un problème, on cherche la solution. Mais on ne peut pas tout prévoir.”\textsuperscript{152}

But that is exactly where he’s wrong: because informed by the experience of a non-profit well-versed in maintaining a water project, the community of Melio could have the foresight to confront possible problems before they become problematic. Instead of seeing upkeep as, “Il y a toujours des problèmes et on doit trouver les solutions progressivement,”\textsuperscript{153} the community can take steps to predict and resolve difficulties ahead of time. Partnering with a non-profit and applying a greater degree of forethought could have aided the community in instituting a payment system, creating a maintenance committee, and securing their fountains earlier, rather than being forced to confront the consequences now. No system is perfect, and new problems will keep arising. Upkeep, after all,

\textsuperscript{150} “doesn’t abandon us” “help us financially to do extensions, so that everyone can be close to water” Ibid.
\textsuperscript{151} “If they could help us from time to time with advice that would be very good. They could come to council us and contribute to discussions.” Ibid.
\textsuperscript{152} “We cannot foresee everything! We are not God! When there is a problem, we will search for the solution. But one can not foresee all.” Tsopgue, Informal Interview (Tour of Quartier). 1 Dec, 2014.
\textsuperscript{153} “There are always problems and one must find solutions as we go.” Tsopgue, Informal Interview (Tour of Quartier). 27 Nov, 2014.
is the battle for constant adaptability to the chaos of the world. Yet, many problems can be predicted, and the community could benefit from greater foresight in identifying and resolving possible future problems.

I believe it is in this spirit that Mr. Zangue hopes to foster a rapprochement between GIZ and the Melio quartier, where experts from GIZ can work directly with the community to instruct them in the maintenance of the water project. In this manner, the community can directly benefit from the expertise of those familiar with the upkeep of water systems without giving up a sense of their agency and responsibility towards the project. As a research report printed in the journal *World Development* found, “A focus on institutions rather than "community" is likely to be more fruitful for those interested in community-based natural resource management.” There is a need for the community of Melio to work with experienced outside institutions to build up their own effective internal institutions – such as an operational maintenance committee and a lucrative payment system – while also conserving their sense of ownership towards the water project.

5. CONCLUSION

5.1 To Answer the Question

My research neither fully confirmed nor contradicted my hypotheses, but discovered nuances that deepened my understanding of the Melio community’s water situation.

In my first research question, I wondered if the various ways that the community attained drinking water met their needs. I hypothesized that after the project, they are probably using other sources like rain and the pond water less, and that the community’s needs for drinking water are met, even if not always sanitarly. For the most part, I found this hypothesis to be true: with the addition of the public water fountains, community members are resorting to drinking pond water less. Regardless of the season or fountain accessibility, the population can always drink the contaminated water of the pond, if they can bear running the risk of suffering from water-borne sickness. However, the availability of fountain water varies due to the unreliability of responsables in

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155 Agrawal and Gibson, “Enchantment and Disenchantment.” (629)
opening the fountains or sending water from the pump. Moreover, the current cost of 25 francs per 20-liter bidon prevents poor villagers from always having the funds to purchase the fountain water, forcing them to resort to drinking the pond water, even when water flows from the fountains.

My second research question asked how the community participated in the water project. I conjectured that they contributed by initiating, financing, and building the project and are still participating in its upkeep today. All this my research found to be accurate. The future treasurer of the project approached Breaking Ground to explore options for instigating a community-implemented water project. Melio and surrounding quartiers made the significant financial contribution of 6 million CFA to the project, and the community oversaw and even participated in the construction of the project. It is important to note, though, that Breaking Ground provided over half the project support, and that community members acknowledged that without this support, the project would not have been possible. The involvement of the non-profit also lead to an evolution in the community’s original conception of the project, because water was pumped up to the level of the village in a more modern system than the community initially envisioned. While community members contributed to project realization in the selection of construction material, the generous donation of their land, and oversight of the process, they did not donate construction materials or labor for free, using instead project funds to pay for these inputs. Nevertheless, due to the contributions of the quartier, the community project cost significantly less than a government project would and the combined contributions of the non-profit and community saw the realization of the water project. As for the continuation of community participation in the upkeep, the community has both organized and implemented their own maintenance system, and currently remains committed to system sustainability.

My final research question enquired if the participation of the community in the water project impacted its success, theorizing that by their involvement throughout the project, the community ensured the development of a sustainable water system that adequately meets their needs. Resoundingly, I think I can answer that community contribution to and implementation of a water project absolutely influenced the success of the project – but in both positive and negative
ways. Community participation throughout the realization of the water project meant the community developed a project that they believed would meet their needs. The community contributions to the project instilled a sense of ownership and social responsibility that keep the community dedicated to the durability of the water project. Yet, organizational difficulties and the poverty of the region threaten the availability of fountain water and the community’s ability to invest in the sustainability of the water system. There is a need for both further community deliberation and the aid of outside institutions to develop the upkeep system and ensure that the project will be successful: that water will flow and continue to flow. So yes, the community has developed a water project and a maintenance system that provides water to the population now, but given the various challenges that have arisen during the implementation, it is not yet possible to definitively determine whether this community-driven project has adequately met community needs or will be sustainable.

5.2 Looking Forward

Having drawn conclusions from my own research, I use this final section to propose recommendations to the community for refining their maintenance system and suggest possible directions of future research.

Suggestions for System Improvement

The first step to ensuring project durability and adaptability is the creation of a maintenance committee. Looking back on the development of the project, it is clear that a great deal of the success of the realization can be attributed to the habitual meetings of the realization committee, where the community could collectively gather to problem-solve together. This same opportunity for participation and organization is required today to ensure the accessibility of the fountain water and the sustainability of the system. The creation of a maintenance committee would allow for greater accountability, regulation, and oversight of the water project, where the work of responsables could be more clearly supervised and the development of rules regulating private lines begin. A year after the realization of the project and several weeks into the institution of a payment system, I think it is imperative that the community forms a maintenance committee as quickly as possible, and
insists that this committee hold regular meetings to allow rapid resolution of problems and frequent examinations of the system. Ideally, all the nominated leaders of this committee would be based in the village to allow rapid problem solving and to negate a reliance on external elite for project leadership. Regardless, until the community creates this regulatory body, the participation of the wider community and their ability to resolve project problems is severely limited.

In addition, further sensitization of the community is vital. First of all, there is a need for greater dissemination of information on the current maintenance system. The facts remain that members of the community, consumers and responsables alike, remain unfamiliar with the upkeep system put in place. Community leaders should use the weekly village meetings of women and men to formally inform villagers unfamiliar with the current maintenance system on the payment schedule and importance of these contributions. The maintenance committee should hold special seminars for responsables to make sure that all the fountain guardians have the same understanding of their duties – and so the responsables can, in turn, instruct the community on proper system upkeep and water conservation. Meetings of the maintenance committee should be well publicized and open to the public, so that diffusion of information and community participation can flourish. Secondly, there is a need for further instruction on the proper conservation of water. As both the nurse at the private clinic and I noted, members of the community still struggle to safeguard the quality of their water, suggesting that further training of community members on the importance of washing bidons before collecting water is necessary. A visit to the children’s weekly meeting would be especially pertinent to address both these issues of awareness, as children are the group most likely to gather water from the fountains, and thus the most important population to target on teaching the importance of system management and water conservation. No matter what form the instruction takes, it can never end. As François Wamba noted, “La sensibilisation doit être permanent. À chaque année on doit continuer de sensibiliser la population. Toujours.”156

Finally, as hinted earlier, the community should seek the advice of experts for developing their system in the short-term. With a greater foundation of experience in maintaining water

156 “Awareness must be permanent. Each year we must continue to sensitize the population. Always.” Wamba, Interview. 23 Nov, 2014.
projects, GIZ and other external actors can help the community establish strong institutions that will ensure an efficient and effective upkeep and safeguard a sustainable system. However, it is vital that the community engages in partnerships that conserve their sense of agency and responsibility towards the water project. Breaking Ground’s efforts to bring about a rapprochement between GIZ and the community by the formation of a direct relationship between expert and community members could be the start of just such a promising partnership. The goal of whatever partnership the community forms with an outside actor should be to train members of the community on how to manage their water system, so that community leaders can continue to instruct their village without becoming dependent on external actors.

If the community can create the maintenance committee, raise awareness of system upkeep and water conservation, and seek the experience of an external institution in the short-term, I think they will be that much closer to achieving a sustainable system. By developing the organization of their system and ensuring continual community participation, the community might just be able to fulfill Laurent’s wish and give their ancestors the chance to drink from these same fountains.

Suggestions for Future Research

This research project has just begun to scratch the surface of community participation in the development of water systems. For those interested in further exploring the subject, a project analyzing the sustainability of the Melio water project after it has (hopefully) borne the test of five or ten year’s time would be of both academic value and local interest. Future researchers could also conduct studies on a community-implemented project realized in another region of Cameroon to see if the same obstacles arose, or could examine if community participation in other development projects unrelated to water systems discovered similar challenges. Regardless of the focus of the study, the field of developmental studies in relation to both water projects and community participation is of great consequence and ever evolving. Its frontiers could always benefit from the insights of further research.
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**C. Tour de Quartier (Walk Around Neighborhood)**

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Pictures of Project

**Picture A:** Pond with Leaves on Surface and Broken Barrier

**Picture B:** Public Water Fountain with Bidon, Hose, and Protected Counter Box
Picture C: Laurent at Pumphouse

Picture D: Water Reservoir

Picture E: Responsible Teclaire On the Job with Children, Fountain Unlocked
**Picture F:** Boy Waits for Gerad to Open the Fountain

**Picture G:** Gerad Hard at Work Filling Bidons, with Children Gathering Water
A. Interview Questions for Community Members
* signifies a follow-up question to ask if they didn’t touch on that aspect in their original response

1. Qu’est-ce que votre occupation?
   * Votre rôle dans le projet d’eau?
2. Pensez-vous qu’il existe un problème d’eau au village?
   * Le passé vis-à-vis le présent
3. Où est-ce que vous trouvez de l’eau pour boire?
   * Le passé vis-à-vis le présent
   * Les utilisations diverses d’eau des fontaines
4. Est-ce que vos besoins d’eau sont satisfaits maintenant?
   * Est-ce qu’il y a des saisons quand il existe déjà un problème d’eau de boisson?
   * Pensez-vous que l’eau que vous buvez est potable pour la plupart?
5. Est-ce qu’il existe un projet d’eau qui est fait au passé qui ne marche plus? *Pourquoi*
6. Que pensez-vous du succès de ce projet d’eau?
   * Comment est-ce que ce projet a affecté la communauté?
   * Quels sont les avantages de projet? des limites?
7. Quelles sont les manières diverses dans lesquelles la communauté a mobilisé pour faire ce projet d’eau?
   * Comment est-ce vous avez participé dans le projet?
   * Est-ce qu’il y a des problèmes avec la mobilisation de la communauté de temps en temps?
   * Que donne la communauté la volonté de faire ce projet?
8. Que pensez-vous de l’importance de la mobilisation d’une communauté à un projet d’eau?
9. Pensez-vous que l’implication d’une communauté dans un projet d’eau pour le village influence le succès de ce projet?
10. Quelle est l’importance des frais?
    * Pensez-vous que le prix des contributions actuelles est bon?
11. Pensez-vous que la communauté est bien sensibilisée…
    a. sur l’importance de boire l’eau potable? Ou est-ce qu’il y a déjà un besoin de cette sensibilisation?
    b. Sur l’entretien de system d’eau? Ou est-ce qu’il y a déjà un besoin de sensibilisation?
12. Comment pensez-vous que le projet a impacté la santé de la communauté?
13. Est-ce qu’il y a quelque chose que vous voulez améliorer à propos de ce système d’eau?
14. Avez-vous confiance que le système d’eau au village est durable? *Pourquoi*
    * Que pensez-vous de l’avenir du système d’eau au village?
B. Interview Questions for Breaking Ground

* signifies a follow-up question to ask if they didn’t touch on that aspect in their original response

1. Votre nom et votre rôle à Breaking Ground?
2. Comment est-ce que Breaking Ground s’est impliqué au projet d’eau à Baleveng?
3. Pourquoi est-ce qu’il y a un besoin pour le projet d’eau à Baleveng?
4. Comment est-ce que Breaking Ground définit le succès d’un projet d’eau?
5. Comment est-ce que le projet à Baleveng a impacté le village?
   * Que pensez-vous du succès de projet?
   * Que pensez-vous être des avantages du projet? des limites?
6. Comment est-ce que la communauté participe au projet d’eau?
7. Quelle est l’importance de la participation de la communauté au projet d’eau?
8. Comment est-ce que Breaking Ground encourage et assure la participation continuelle de la communauté?
   * Est-ce qu’il y a des problèmes avec cette participation?
9. Est-ce que la participation de la communauté à Baleveng influence le succès du projet d’eau? Si oui ou non, comment?
10. Quelle est l’importance des frais que la communauté paie pour le système d’eau à Baleveng?
11. Comment pensez-vous que le projet d’eau influence la santé de la communauté à Baleveng?
12. Est-ce que Breaking Ground a essayé de sensibiliser la communauté sur comment maintenir le système d’eau? Sur l’importance d’utiliser de l’eau propre et potable?
13. Pensez-vous que le projet d’eau à Baleveng est durable? Si oui ou non, pourquoi?
14. Qu’est-ce que Breaking Ground a appris en aidant les communautés avec le développement des systèmes d’eau?
   * La prochaine fois, est-ce que Breaking Ground fera quelque chose de différent?
   * Est-ce que Breaking Ground veut améliorer quelque chose de ce projet d’eau?
15. À propos des projets de développement, que pensez-vous est le rôle des ONGs vis-à-vis le gouvernement?
Important Contacts

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  Respectively, a village elite and the secretary of realization committee in Melio. Both big contributors to the water project and good resources for those looking for more information on this water project or implementing community water projects in general. Both speak French.

- Anne Marguerite Tumano
  Surveillant General of the public hospital in Baleveng (head administrator at the Centre Medicale d’Arondissement Baleveng). Good resource on health and water-related illnesses in the region. Speaks French. Phone: 674 82 14 30