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# Addressing Water Shortages Using a Community-Led Approach

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# Addressing Water Shortages Using a Community-Led Approach

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## Introduction

The Philippines is at the forefront of climate change and extreme weather events. It is highly exposed to tropical cyclones, flooding, landslides, and droughts, which are likely to worsen as a result of climate change. Such extreme events have had catastrophic economic and social impacts. Addressing climate change has been a priority of the government. The Philippines has made significant efforts to address climate change, notably marked by the passage of the Climate Change Act in 2009. The government is ramping up its efforts in implementing its national climate policies, which include scaling up climate adaptation, mitigation, and disaster resilience measures. However, much remains to be done, not least to improve the resilience of disadvantaged communities.

Disasters and climate change have disproportionately affected the poor in densely populated urban areas. The urban poor are particularly vulnerable because they have limited financial resources to adapt to shocks and stresses, because they lack access to basic services, and because failures in governance and accountability have led to their exclusion and exacerbate their vulnerability (ADB 2022a). The urban poor are highly exposed to hazards and the effects of climate change because they live in the marginal areas of cities and municipalities, such as near the coastline and rivers, or in mountainous and landslide-prone areas.

In response to these challenges, the Asian Development Bank (ADB), through a multi-donor trust fund, has developed technical assistance to strengthen the resilience of communities in poor urban areas to climate change. Resilience in the context of urban development refers to the “capacity of cities to function so that people living and working

in cities—particularly the poor and vulnerable—survive and thrive in the face of shocks and stresses related to climate change.” The Philippines was one of the recipient countries, along with Bangladesh, India, Indonesia, Pakistan, and Viet Nam. One component of the technical assistance was the pilot-testing of a community-led approach to designing, implementing, and maintaining urban resilience projects.<sup>1</sup>

### Development Challenge

The Philippines periodically experiences severe droughts. In the municipality of Janiuary in the central Philippines, droughts have lasted for up to 6 months in recent decades. Dry spells, coupled with increased demand due to urbanization and a deficient water system, have led to severe water shortages. Unfortunately, there seems to be no end in sight, as according to a technical analysis, rainfall in Janiuary will decrease over the next 50 years.

The Janiuary Water District (JWD), a government-owned local water utility, was responsible for providing water services to the entire municipality. However, JWD was saddled with aging infrastructure, high water losses, and outstanding debt amounting to ₱25 million (\$431,000). In 2018, JWD initiated a ₱190 million (\$3.3 million) joint venture with a private company called CSWater to take over the operation of the water system, repair of pipelines, treatment plant, and other support facilities. The agreement provides for a 25-year, renewable and exclusive franchise to CSWater (Public-Private Partnership Centre n.d., 2019). However, the joint venture was not expected to address the water problem of low-income households who cannot afford a water connection.

Of Janiuary’s 60 villages, San Julian has suffered from severe water shortages in recent years because of its hilly topography. Due to the inadequate infrastructure, water from the existing municipal water system barely reaches the village. In 2018, 134 households, or 43% of all households, had no water connection. The households that were not connected resorted to communal pumps or deep wells that they shared with relatives. These wells, which also dry up during periods of drought, provided water for domestic purposes such as cleaning and washing.

More than half of the households were connected to the existing water system. However, piped water was only available outside peak hours, usually from 11 p.m. until 4 a.m.. But in several cases, the water quality was not suitable for drinking or cooking. The water was murky and smelled foul. Sometimes a water truck from the water distributor came to ration the supply for a fee. Most households (86%) bought their drinking water at refilling stations in the next village. Water was expensive. A typical household with five members spent ₱970 per month on water (excluding the cost of transportation), which is about 10% of the monthly household income (ADB unpublished).

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<sup>1</sup> ADB’s Technical Assistance (48317-001) on Promoting Urban Climate Change Resilience in Selected Asian Cities is a \$15-million capacity development cluster technical assistance financed by the Urban Climate Change Resilience Trust Fund under the Urban Financing Partnership Facility. Pilot-testing of community-led approach is part of subproject 3. See Technical Assistance Report.



Elena Navigar's household is one of the 134 households that are not connected to the municipal water system. She explained that the water connection fee, which is between ₱7,000 to ₱8,000, is quite high for her family. She would have to spend a large part of her family's savings to get a connection. She feels that there is no point in getting a connection anyway because the service from the local water distributor is not satisfactory. She wishes that if there was a reliable and affordable source of water in San Julian, she would have more time for social or income-earning activities. Navigar is originally from a far-flung barangay in the mountainous area of Janiuay. In 2012, she moved to San Julian to live closer to the city, hoping for a better life and easier access to government services.

The water situation in San Julian reflects the status of water access in the Philippines. In 2015, the Philippines exceeded the Millennium Development Goal of halving the proportion of the population without sustainable access to safe water. However, about 2.6 million people still had no access to safe water in 2022 (PSA 2022). More than half of those who had access to safe water relied on refilling stations, which charge a higher price than water suppliers. Only 42% of households in the country had an individual piped water connection.

At the village level, the water crisis has significantly reduced the number of business establishments in San Julian. For entrepreneurs, the availability of water is an important factor when deciding where to invest. Globally, an estimated \$260 billion is lost annually due to lack of water and sanitation facilities (Water.org n.d.).

### Intervention

The urban poor are often underrepresented in decision-making processes and have fewer opportunities to influence government investment decisions. ADB advocates for inclusivity and wanted to test whether a community-led approach to building resilience to climate change would work. A community-led approach engages the urban poor and other stakeholders in identifying, implementing, and sustaining a project. This is a deviation from the typical top-down approach where the government leads the project. A community-led project (CLP) provides an opportunity for community groups to work with decision-makers to address the power dynamics that exacerbate inequalities. It also builds on and leverages local assets, knowledge, and capacity (ADB 2022b). The theory of change of the community-led approach envisions three outcomes: (i) increased community participation in the design and prioritization of resilience interventions, (ii) improved knowledge exchange among stakeholders, and (iii) increased resilience to climate change. An illustration of the theory of change is presented in Appendix 1.

In the water sector, CLPs were instrumental in building and managing water systems in communities where a large part of the population was not yet connected to a water supply system. An evaluation report on these projects found that community involvement in the projects promotes a high degree of collective ownership, leading to more sustainable projects (ADB 2000). Based on global experience, community-led projects work well for initiatives that require context-specific local solutions, such as water supply, disaster risk reduction, and climate change adaptation, and in areas where there are strong community relationships and local government support (ADB 2022b).

However, CLPs take longer to implement than traditional projects. Assessing needs and identifying viable solutions requires an iterative process. CLP implementation also requires close facilitation, which can extend the implementation period and incur additional management costs. ADB wanted to find out how effective a community-led project is in building climate resilience by pilot-testing the approach in several areas in the Philippines and other developing countries.

### ***Tracing the Implementation of the Community-Led Approach***

The key actors in the pilot-testing of the community-led approach in San Julian were ADB, which provided the grant; Oxfam and the Philippine Rural Reconstruction Movement (PRRM), which were the implementing agencies responsible for facilitating the entire process; and most importantly, the community stakeholders group (CSG), composed of Janiuary municipal government officials, San Julian village council members, and representatives of the urban poor and other community groups.

One of the members of the implementing agencies was Dojoe Flores, who served as the community resilience officer. He facilitated community participation in project selection and management and served as a liaison between the community and ADB. He ensured that all community groups were involved in the decision-making process. He also ensured that the CSG complied with ADB's business processes. Flores is an experienced development officer who has worked on several projects at the community level. With his strong facilitation skills, familiarity with the local language and norms, and well-established connections, it was easy for him to build a good rapport with local government officials and other stakeholders. But working with various groups in the community and navigating the power dynamics was always a balancing act for him.

### ***Targeting and Setting the Foundation for Collaboration***

The CLP began with the identification of the target community in July 2018, which followed a three-step selection process. First, ADB shortlisted cities and municipalities where the urban poor are vulnerable to climate change, where there is strong government buy-in for CLP, where there is strong capacity to implement projects, and where ADB has provided ongoing or future project loans. The Janiuary municipality was shortlisted as one of the four pilot areas in the Philippines. Second, the implementing agencies (Oxfam and PRRM) conducted a careful profiling exercise to gain an in-depth understanding of the municipality. The profiling aimed to gather information on demographic, socioeconomic, and physical characteristics, institutional capacity, and governance. It also included an initial assessment of the communities' risks and vulnerabilities to climate change. The critical part was a stakeholders analysis that identified actors and groups that make or influence decisions, that could be affected by project decisions, and that could help with project implementation. Third, the implementing agencies invited key stakeholders, including the mayor of the municipality, the municipal planning officer, and community representatives, to a kick-off workshop. The workshop, which is considered the opening ceremony of the CLP, provided Flores

(the facilitator or community resilience officer) the opportunity to explain the objectives of the project and allow stakeholders to make a collective decision on the target community for the CLP. Flores explained that setting a clear set of criteria for the selection of the target community was key to reaching a joint decision. Based on the vulnerability profile, community capacity, and synergy with the municipal plan, participants ranked the village of San Julian as a priority target community. This ranking was further verified in a focus group discussion. The summary of the implementation process is presented in Appendix 2.

Flores found a strong supporter of the CLP in Daniel Manejero, the village chief of San Julian. “I was ecstatic when I learned that my village was chosen to receive the grant,” said Manejero. “We had previous experience with community-led projects under the World Bank, so we were quite familiar with the process,” he explained. Most of his constituents were active in community work through membership in various community organizations. He saw this as an indication of his village’s potential to implement the CLP. Manejero was popular among his constituents. He was well-loved for his dedication to public service and his persistence in finding solutions to complex problems.

The formation of the community stakeholders group (CSG) was central to the CLP. After selecting the target community, participants identified potential members of the CSG who will (i) lead the project planning process; (ii) oversee, coordinate, and monitor project-related activities; (iii) lead the implementation and sustainable operation of the project; and (iv) ensure meaningful community participation.

Navigar was a volunteer health worker in the village when she was asked to join the CSG. She actively participated in community activities and represented the women’s group on several occasions. Navigar was strong-willed, passionate about community service, and had strong interpersonal skills. In 2018, while serving as a member of the CSG, Navigar was elected as a member of the village council.

### **Assessing the Problems and Identifying the Solution**

In September 2018, Flores gathered the CSG for a workshop to discuss and examine their risks, vulnerabilities and capacities and identify solutions. “Our community has really been affected by climate change. We identified five issues in San Julian and agreed that the water crisis was the most critical,” recalls Manejero. Thereafter, the CSG explored project concepts to address the problem. “We recalled how our forefathers used to save up water during rainy days in big containers to be used for the forthcoming dry season. So apart from piped water distribution system, we decided to add a rainwater harvesting facility,” Manejero explained.

The CSG planned to build a small-scale water system consisting of a dug well, a reservoir tank, a treatment facility, and a piped distribution network for households without water connection. In addition, it would set up a centralized rainwater harvesting facility to store water during the rainy season to reduce groundwater depletion and augment supply during the dry season. The water system would be exclusive to 134 unconnected households. The rainwater harvesting facility

would supply water for communal use—for the barangay hall, wet market, day care center, and school. During the dry season, the stored water from the rainwater harvesting facility would serve as a back-up supply.

### Facing Opposition Head On

Local government units are responsible for water supply in cities, municipalities, and provinces. The Janiuay local government formed the Janiuay Water District (JWD) to operate, manage, and maintain the municipality's water system. A water district is a local corporate entity classified as a government-owned and controlled corporation.<sup>2</sup> San Julian is part of the JWD service area. Flores, as the community resilience officer, arranged a meeting with CSG members and JWD management to get their views on the project. At the time, negotiations were underway between JWD and CSWater (a private consortium) for a joint venture. JWD management opted to wait until the joint venture agreement was finalized before making a statement. "We made sure that JWD was on board from the time the community stakeholders group decided to develop a water system in San Julian. When CSWater took over the municipal water system, I vividly remember receiving a call from management requesting to cancel the project. CSWater insisted that the community stakeholders group focus on issues other than the water system instead," Flores recalled.

"*Napakahirap po!* It was very difficult!" Navigar recalled when asked about this hurdle. "We all thought it was the end of the project." CSWater insisted that they had the exclusive right to provide water supply in Janiuay under their franchise agreement with JWD. "Indeed, that was tough. I insisted that under the Local Government Code, the village council is mandated to provide basic services such as a water supply system to its constituents," Manejero added. Manejero and Navigar further argued that the project was intended exclusively for the 134 poor households that were not connected to the existing water system because they could not afford CSWater's connection fee. They emphasized that the project would not compete with CSWater's business.

Flores facilitated subsequent negotiations with CSWater, in which the CSG proposed that the project be included in CSWater's corporate social responsibility program. In return, CSWater would provide technical support for the proposed water system in San Julian. However, there was no concrete agreement on this. "We were lucky that Flores had personal networks within CSWater, so we were able to work our way through. Eventually, CSWater's management gave way to the project," says Manejero about overcoming CSWater's disapproval.

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<sup>2</sup> Local water districts were created through Presidential Decree 198, or the Provincial Water Utility Act of 1973, to build, operate, and maintain water systems in cities, municipalities, and provinces. A water district sets its water tariff, which allows for full recovery of all costs incurred by the water district. The Local Water Utilities Administration is a lending institution that helps water districts. Water districts may enter into joint ventures with private utilities, such as CSWater, to operate the water system.

## **Preparing for the Community-Managed Water System**

Preparatory studies, including a feasibility study commissioned by the implementing agencies, served as the basis for the design of the project. Navigar and Manejero recalled that the identification of the water source was crucial. They recommended that experts investigate a private property in Zone 4 where there were two deep wells. Manejero initiated a discussion with the owner, who fortunately agreed to a usufruct agreement. A technical assessment revealed that the source could only meet the needs of 134 target households for 12 to 13 hours per day in the short term. It was recommended that a new water source be developed to meet the projected demand over the next few years. However, the CSG decided that the source was good enough. “We were pressed for time because of the delays that have happened in the project,” Navigar explained the reason for this decision.

In May 2020, procurement of a firm to construct the project followed. Navigar recalled how tedious and difficult the process was, mainly because procurement was new to the CSG. The Project Management Committee (PMC) was formed within the CSG to set the bidding criteria and ensure compliance with the guidelines set by ADB and the implementing agencies (Oxfam-PRRM) for the selection of a qualified private contractor. The committee took primary responsibility for managing project funds and monitoring the progress of the work.

While planning for the operation and maintenance of the project, CSG members considered two options for who should manage the San Julian water system—the village council or the beneficiaries. They decided in favor of the latter, as the beneficiaries have the greatest incentive to keep the water system running. This option would also keep the water system away from political interference. Experience from the sector benchmarking also shows that a water system managed by the local government has generally fallen short of expectations (World Bank 2012).

The management took the form of a water association, a nonstock, nonprofit entity organized and registered with the local water regulator. As an entity whose sole purpose is to establish and/or operate a small-scale water system, a water association is relatively easy to organize. The associations have access to technical, organizational, and financial support from the local water regulator (World Bank 2012). In May 2020, the San Julian Water System Association was established. To build their capacity to manage the San Julian water system, Navigar and other members attended management training and went on a learning visit to one of the successful small-scale water providers in the province, the Pal-agon Water Cooperative.

## **Completing the Construction and Losing Target Consumers**

COVID-19 restrictions slowed down the construction of the project. Nevertheless, the project served as a safety net for those who had lost their jobs during the pandemic. About 90% of construction workers employed were residents of San Julian. Community members welcomed the project because it was more than just a water system, it also created jobs.



The construction of the water system was completed in March 2022 and handed over to the village council and the water association, 4 years after the initiation of the kick-off workshop. While the project faced delays, CSWater offered a new payment scheme to make the water connection fees affordable. It required an initial deposit of ₱500, with the remaining balance of ₱6,500–₱7,500 to be spread evenly over several months. This way, 60 households that previously had no connection were able to get a water connection. At completion, the project covered the remaining 74 target households. A rainwater harvesting facility and an office for the water association were also built.

### ***Navigating through Unexpected Hurdles***

Unfortunately, the completion of the project was not a time to celebrate. When Navigar opened her faucet for the first time, murky water came out. The water quality was so poor that it was not even suitable for washing and cleaning. The quality deteriorated even further when a series of typhoons damaged and contaminated the water source. This discouraged the beneficiaries, and 30 households requested for disconnection. Some village council members became cynical about the project. But the situation only made Navigar more determined to make the system work. Her position on the village council empowered her to push the project forward. The water system was outside her purview as the head of the health committee, but she managed to bring the project under her supervision.

From April to December 2022, the water system was on a constant dry run, undergoing several rounds of water filtering, chlorination, and weekly tank cleaning. As the water quality did not improve, the association deemed it impractical to restore the water source and decided to find a new source. After a series of visits to potential sites, Navigar and the other members of the association found a new source, again on privately-owned land. The landowner and the association agreed on a minimal rental charge of ₱1,500 per month. The village council contributed ₱45,000 and the association members pooled ₱40,000 to fund the additional capital cost of developing the new water source.

In April 2023, the water system began operating again with a much better source. The 44 previously unserved households of San Julian finally saw clear water from their faucets. The water has been available for 24 hours, except on days when maintenance work is being carried out. The potability of the water has yet to be determined through testing. As the operation is running smoothly, the association has already received connection inquiries from CSWater customers. According to the agreement with CSWater, the water system is intended exclusively for the initially identified target households.

## **Challenges during Implementation and in the Future**

### **Ensuring Political Support**

Previous ADB experience shows that community-led projects need strong local government support to be successful. In 2019, Manejero got a seat on the municipal council and had to give up his position as village chief. At the same time, a new municipal administration took over. Convincing the new municipal mayor, the new village chief, and the entire village council of the importance and sustainability of the project extended the project timeline. “When COVID-19 happened, I sensed that the village council members’ interest in the project waned, probably because they were all cooped up in their houses for a long time,” Navigar suspects. But for Navigar, “The village council members did not have a sense of the urgency of the problem because their households could pay for alternative sources of water.”

Sustained political support is just as important during implementation as it is in the initial years of the water system’s operation. The municipal government of Janiuary and San Julian village council have formally integrated the project in their development plans. The village council has allocated a budget to support the first year of operation to bridge the takeover of the project by the association. The CSG and the association have also secured technical support from the provincial government’s Rural Water and Sanitation Program, which is under the provincial engineering office.

### **Sustaining the Operation of the Water System**

Financial, institutional, and technical sustainability are three preconditions for the sustainability of CLPs. Before the project was completed, the CSG and the association agreed on a tariff rate, which was determined based on data on current water expenditures and consumers’ willingness to pay. Users pay ₱250 for the first 10 cubic meters of water and ₱28 per cubic meter thereafter. This tariff is lower than the amount charged by CSWater. Since the number of households connected has decreased, the water system is currently operating at a deficit.

The system relies on financial support from the village council to sustain its operation and maintenance. How the village council can maintain its support for the water system remains a challenge. When asked, the new village chief said that he hopes for more support from ADB as their funds are also limited. He added that additional funds could be spent on solar panels to power their water pump and reduce the operation and maintenance costs of the water system. Based on the sector’s best practices, the operation of small-scale water systems should not depend on subsidies from the government as much as possible. Otherwise, an adverse turn in the political power could undermine the existence of the project. The association has plans to build a water refilling station and a car wash and expand to other remote areas not served by CSWater to augment their income.

The San Julian Water System staff consists of a full-time maintenance officer and a part-time assistant maintenance officer. Navigar is very actively involved in the operation of the water system. She inspects the facilities, reads the meters, and supervises the two-person maintenance

staff. The association's board of directors consists mostly of retirees who have no experience with water systems. The association's bookkeeper/treasurer also acts as bill collector. An ADB evaluation study found weak capacity of water associations in the Philippines. Although small-scale water systems were well received and regarded as highly beneficial to customers, more than half of the registered water service associations had inadequate revenue sources and did not consistently collect the revenues due them (ADB 2000). Although community-managed systems have limited technical and managerial capabilities, they perform better than water utilities operated by local government units.

The poor water quality and contamination of the original water source indicate a lack of soundness in the technical plan and quality of the water system infrastructure. Technical problems such as these could affect the longevity of the water system's infrastructure. The location of the water source on private property can also undermine the operation of the water system. Ideally, the water system should be located on public land or land donated to the government to ensure its availability. The association plans to purchase the land as soon as the funds are available. Until then, there is always the possibility that the private landowner will refuse to allow the use of his land.

### Assessing Outcomes

The assessment of the project is based on limited information at the time of writing, as the project is still new and there is no evaluation study. In assessing the results, we revisit the theory of change of CLPs and assess whether the outcomes have been achieved so far.

**Target Outcome 1: Increased community participation in the design and prioritization of resilience interventions.** There is strong evidence that the CLP enabled the participation of different stakeholders thanks to the close facilitation of implementing agencies. The urban poor was well represented through their membership in the community stakeholders group. In addition, the project has strengthened the community's capacity to assess and address their own vulnerabilities by involving them in the project process. However, there is insufficient information on the extent to which the community was involved during the process. Navigar observed attrition among community stakeholders group members during the implementation of the project. This observation is consistent with the findings of a synthesis of CLPs by White, Menon and Waddington (2018).

**Target Outcome 2: Improved knowledge exchange among stakeholders.** The community-led approach facilitated knowledge exchange and collaboration between the municipal government, the village council, and the community. This was demonstrated during the multi-stakeholder planning activities and through the commitment of the municipal and village-level governments to support the operation of the water system. The project also provided the community with access to technical support from experts and political support from the government.

**Target Outcome 3: Enhanced resilience to climate change.** The project improved the resilience of the 44 beneficiary households to droughts by providing them with 24-hour access to an improved water source. It has lowered the cost of water and reduced the time spent for collecting water.

Whether the CLP will continue to address the water shortage in the coming years depends on its financial, institutional, and technical performance. Evaluations of CLPs for small-scale water systems were usually carried out a few months after project completion, so there is little information on their sustainability.

### Reflections

The project faced many setbacks, but in the end the water shortage problem of 44 poor households in San Julian was solved. Effective facilitation by the implementing agencies encouraged participation of many stakeholders, especially the urban poor, and built capacity for project management. Flores and others from implementing agencies were instrumental in initiating the work of multi-stakeholder groups. They also acted as intermediaries between the CSG and ADB and helped the CSG comply with procurement requirements. This CLP demonstrates the importance of the role of facilitators in addressing the power dynamics that can arise, including the dominance of influential opposition figures at key decision points.

The sustainability strategies for the water system warrants revisiting. On the financial aspect, relying on the village council's funding can undermine the quality of the water system's services or even its existence. Best practice requires the water system to be self-sufficient as soon as possible. The tariff is a mechanism to sustain the operation and maintenance of the project. As the CLP is a poverty-targeting project, the association must strike a balance between cost-recovery tariffs and ensuring that water remains affordable for the poor.

Institutional capacity is currently weak and may require external support, at least in the first few years of operation. Technical problems with the water source could have been avoided through more careful technical planning. Furthermore, when planning water systems, clarifying and legalizing the ownership of the land on which the water system is located is crucial to avoid conflicts in the future.

In addition, CSWater, which has an obvious advantage in terms of financial and technical capacity, can be seen as a competitor for the project. It is expected that CSWater's involvement will expand and improve the water system in Janiuay. When the community stakeholders group planned the project, it was intended to supplement the inadequate water supply from the municipal water system and serve as a backup in case the municipal water system fails. Going forward, a partnership with CSWater is an option to ensure the sustainability of the water system. This type of partnership between a water concessionaire and a community association has proven to be crucial in providing water to poor urban areas in Metro Manila.

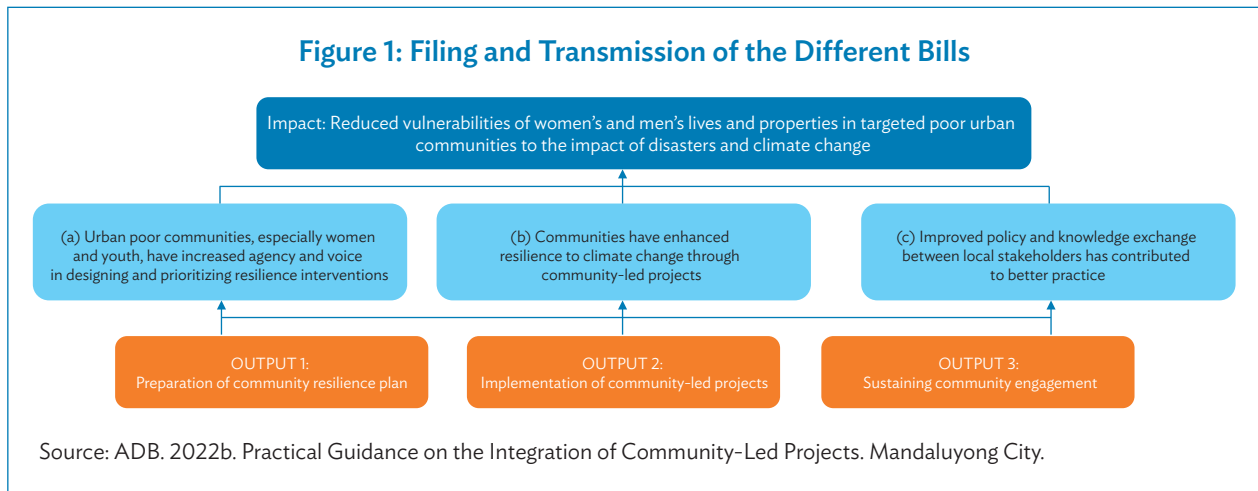
Finally, the short- and long-term impacts of the project on social cohesion, governance, and social welfare are not well understood. A rigorous assessment of this project and other CLPs funded through technical assistance would inform the decision on whether to replicate the approach in other contexts.



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## Appendix 1: Theory of Change of Community-Led Approach



## **Appendix 2: Summary of the Implementation Process of the Community-Led Project**

Description	Main Actor/s
Stage 1: Developing knowledge, building relationships, preparing the community	Implementing agencies
Stage 2. Participatory project identification and planning	Community Stakeholders Group with the facilitator
Stage 3. Preparatory studies, due diligence, safeguards, and site selection	Community Stakeholders Group with the facilitator
Stage 4. Participatory project implementation	Community Stakeholders Group with the facilitator
Stage 5: Handover, community-led operations, and maintenance	Community Stakeholders Group, village council, water association

Source: Author's compilation.

## Study Questions

1. What should be done to ensure the sustainability of the project?
2. What options could have been explored to solve the water shortage in Janiuary?

Note: In this case study, “\$” refers to United States dollars.

Cover photo: Members of the village pose in front of the water storage facility (photo by Asian Development Bank).

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