

# Multi-Actor Sinergy in Clean Water Resource Management : A Study Case of Tumpeng Village, Lumajang Regency

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## ABSTRACT

The availability of clean water remains a fundamental necessity and a persistent challenge in various rural areas, including Tumpeng Village, Lumajang Regency. This community service project aims to describe the synergy between the community, local government, and the Public Administration Study Program of Universitas Lumajang in community-based water resource management. This program is a collaborative initiative involving Offroader Bersatu Nusantara (OBN), Quran Best Foundation, the Lumajang Regency Government, and Universitas Lumajang, focusing on the construction of artesian wells and social assistance. The methods employed include cross-actor coordination, field surveys and observations, community socialization and education, self-help assistance, participatory approaches, as well as monitoring and evaluation. The results indicate that the constructed artesian wells provide a sufficient discharge of clean water to meet local needs. Beyond the physical impact of improved water access, this initiative has increased public awareness regarding the importance of collective and sustainable water resource management. This multi-actor synergy contributes to strengthening community participation, fostering the spirit of mutual cooperation (gotong royong), and establishing local independence in clean water management. This project is expected to serve as a sustainable model for community service collaboration based on local needs.

**Keywords:** Multi-actor Synergy, Clean Water, Community Service, Community Participation, Public Administration.

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## 1. INTRODUCTION

The availability of clean water is a vital fundamental necessity for human life (Mishra, 2023; Abasiryu et al., 2025). Nevertheless, in several rural areas across East Java Province, access to clean water sources remains a primary issue affecting the community's quality of life. Geographical conditions and infrastructure limitations are the main factors contributing to the challenges faced by residents in obtaining water suitable for consumption and daily needs (Supratman et al., 2024).

Addressing these conditions, the Offroader Bersatu Nusantara (OBN) community, in collaboration with the Quran Best Foundation, has implemented a social program titled "Sumur Bersih" (Clean Wells), which has been operational across six regencies in East Java, namely Tulungagung, Trenggalek, Pacitan, Blitar, Malang, and Bondowoso. This program aims to provide clean water sources through deep-well drilling in regions experiencing drought or water scarcity. Lumajang Regency has become the seventh location for this program's implementation,

where OBN and Quran Best have partnered with a local offroader community, the Lumajang Jeep Club (LJC), as the executive partner.

The OBN and Quran Best implementation team coordinated with the Lumajang Regency Government through the Regional Secretary, accompanied by the Assistant for Economy and Development and the Head of the Housing and Settlement Areas Department (PKP). Based on the results of this coordination, the initial drilling site was designated at the Islamic Boarding School (Pondok Pesantren) in Wates Kulon Village, Ranuyoso District. However, geoelectric testing conducted up to a depth of approximately 150 meters failed to locate a water source. Consequently, the team conducted a follow-up survey in Tumpeng Village, Candipuro District, specifically at the Roudlotul Qoni'iyah Islamic Boarding School led by KH. Hadad. Following technical discussions and surveys, the drilling point was established within the boarding school area. The well construction took approximately one and a half months and successfully reached an artesian water source at a depth of 83 meters, utilizing a 5-inch diameter pipe with a discharge capacity of approximately 3 liters per second. This water flow is sufficient to meet the needs of around 300 households in the vicinity of the boarding school.

To optimize the utilization of the program's outcomes, Universitas Lumajang, through its Public Administration Study Program, was involved as a partner in socialization and community assistance activities. This initiative focused on fostering public awareness regarding the importance of self-reliant and equitable water resource management. This approach was implemented to prevent potential misunderstandings between the Islamic boarding school and the surrounding community, ensuring it is understood that the water source is intended for the collective interest.

In addition to providing social and educational assistance, Universitas Lumajang played a role in monitoring water utilization and providing material support in the form of piping for distribution to residents' homes. Through this collaboration between social communities, the local government, and the university, it is expected that the artesian well will provide sustainable benefits to the community while serving as a concrete example of multi-actor synergy in community development based on local needs.

## 2. METHODS

The coordination and collaboration method was selected as the initial step in implementing this community service project (Sulistyan et al., 2022). This method was chosen to establish effective cooperation between Universitas Lumajang, Offroader Bersatu Nusantara (OBN), Quran Best, the Lumajang Regency Government, and local community leaders. Through this coordination, all stakeholders were able to align their perspectives, determine the project location, and formulate appropriate implementation strategies. This collaborative approach also ensured that each party understood their respective roles and responsibilities, ranging from facility provision and technical execution to community socialization. Universitas Lumajang focused on social assistance and education, while OBN and Quran Best concentrated on the technical execution of the clean water well drilling. The local government provided administrative and policy support, while community leaders facilitated communication with the residents. Through this cooperation, the service activities are expected not only to provide a clean water source but also to foster a spirit of participation and community concern regarding water resource management.

Furthermore, survey method and observation field were employed to obtain accurate preliminary data and information regarding the regional conditions and the community's need for clean water (Syahputra, 2024). Through these methods, the service team conducted direct site visits to Tumpeng Village, Candipuro District, to observe the geographical and social conditions, as well as the potential available resources. The survey was conducted to identify the primary challenges faced by the community, such as limited access to clean water and the distance between water sources and residential areas. The field observation results served as the basis for determining program implementation strategies, including the designation of

drilling sites, water distribution plans, and community socialization patterns. By conducting these field surveys and observations, the service activities could be implemented more effectively and targeted toward the actual needs of the beneficiary community.

The community socialization and education method was employed to foster awareness and understanding among residents regarding the importance of collective and sustainable clean water management (Mantya et al., 2025). Through this method, the team from Universitas Lumajang conducted counseling sessions, group discussions, and direct communication approaches with the community surrounding the borehole site in Tumpeng Village. The socialization activities focused on providing an understanding that the water source generated by this program is a public facility intended for the entire community, rather than being restricted to a specific institution. Furthermore, the educational activities were directed toward building a spirit of mutual cooperation (gotong royong) and a sense of responsibility in maintaining the constructed clean water facilities. Through this approach, it is expected that the community will be able to play an active role in the fair management and utilization of the water source, ensuring that the program's benefits are sustained for all residents.

The community assistance and self-help method was employed to encourage active resident involvement in the utilization and management of clean water resources. Through this method, the service team from Universitas Lumajang assisted the community in "pipingization" activities, or the installation of piping networks to residents' homes, conducted through mutual cooperation. This assistance focused not only on technical aspects, such as pipe installation and maintenance procedures but also on social dimensions—specifically, building collective awareness and responsibility for maintaining the constructed facilities. Residents were encouraged to participate through self-reliant contributions of labor, time, and materials to foster a sense of ownership over the program's outcomes. This approach is expected to strengthen community independence in clean water management and ensure the sustainability of the program's benefits after the community service project is completed.

Furthermore, a participatory method was utilized to ensure active community involvement throughout every stage of the service activities, from planning and implementation to program evaluation. Through this method, the community serves not only as beneficiaries but also as primary subjects in the decision-making and execution processes. The service team provides space for residents to express their opinions, needs, and suggestions regarding the management and utilization of clean water resources. This participatory approach fosters a sense of collective ownership and shared responsibility for the constructed facilities. Additionally, this method strengthens social solidarity, enhances the relationship between residents and related institutions, and promotes community independence in maintaining the sustainability of the clean water program within their region.

Finally, monitoring and evaluation methods were employed to ensure that the entire sequence of service activities aligns with the predetermined objectives and provides tangible benefits to the community. Through these methods, the team from Universitas Lumajang conducted periodic monitoring of the program's implementation processes and outcomes, ranging from well drilling and socialization activities to the distribution of clean water to residents. Monitoring was carried out through field observations, direct interviews with the beneficiaries, and coordination with village government authorities and local managers. Meanwhile, the evaluation was conducted to assess the effectiveness of the activities, the level of community participation, and the sustainability of water resource utilization. The results of this evaluation serve as a basis for providing recommendations for improvement and follow-up actions for future programs. With well-planned monitoring and evaluation, it is expected that the community service activities will be more transparent, measurable, and yield a positive impact on enhancing community welfare.

The material contribution and support method was utilized as a form of tangible participation by Universitas Lumajang to support the success and sustainability of the clean water supply program. Through this method, the university serves not only in educational and social assistance capacities but also provides physical facilities, such as PVC piping, to facilitate the water distribution process from the artesian well to residents' homes. This material support represents the university's concern and social responsibility toward the needs of the

surrounding community, while simultaneously strengthening the partnership between the academic world, social communities, and the local government. With this contribution, the service activities can operate more effectively and efficiently, while encouraging the community to proactively continue the program independently after the primary activities have concluded.

### 3. RESULTS AND DISCUSSION

#### Preparation and Planning

The preparation and planning stage constitutes a crucial initial step in the implementation of this community service project (Sulistyan & Afriyanto, 2024). The process commenced with coordination between Universitas Lumajang, *Offroader Bersatu Nusantara* (OBN), *Quran Best*, and the Lumajang Regency Government to formulate a structured and measurable activity design. This coordination aimed to align objectives, delineate the roles and responsibilities of each party, and ensure that the clean water supply program effectively addresses the needs of the community in the target area.

In this stage, preliminary data collection was conducted regarding the geographical and social conditions, as well as the availability of clean water sources in several areas potential for project locations. Based on discussions and recommendations from the local government, the initial site was designated in Wates Kulon Village, Ranuyoso District. However, after geoelectric testing was performed to a depth of approximately 150 meters and no water source was found, the team conducted a follow-up survey in Tumpeng Village. The survey results indicated that this area possessed superior water source potential; thus, it was established as the primary project location.

The technical planning included determining the drilling points, estimating well depth, and identifying the requirements for supporting facilities such as distribution pipes, water pumps, and other technical equipment. The service team from Universitas Lumajang also prepared materials in the form of PVC piping to assist in the water distribution process (*pipanization*) to residents' homes. This material support constitutes a contribution from the university to facilitate the distribution of clean water while strengthening community involvement in self-help activities.

In addition to technical planning, the preparation stage also included social planning, which focused on formulating socialization and community assistance strategies. The service team, together with village officials, organized a schedule for socialization activities, arranged incrementally by neighborhood units (*RT/RW*). This scheduling was implemented to ensure that the information dissemination process was effective, equitable, and aligned with the community's capacity in each respective area. Each socialization session focused on discussing the program's objectives, water distribution mechanisms, and the importance of community participation in maintaining the sustainability of clean water sources.

Through this process, a mutual agreement was established among the university, the village government, and community representatives regarding the water management system, the allocation of responsibilities, and the forms of self-help (*swadaya*) to be undertaken by the residents. This agreement served as a crucial foundation for ensuring that the activities were carried out in a transparent and participatory manner.

With meticulous planning, adequate logistical support, and effective coordination among all stakeholders, this community service project is expected to be implemented effectively and efficiently, providing tangible and sustainable benefits to the beneficiaries in Tumpeng Village and the surrounding areas.

#### Types and Forms of Activities

This community service project focuses on providing assistance and socialization for the utilization of clean water resources resulting from the "Sumur Bersih" (Clean Well) program implemented in Tumpeng Village, Candipuro District, Lumajang Regency. This program represents a concrete manifestation of the collaboration between the Public Administration

Study Program of Universitas Lumajang, *Offroader Bersatu Nusantara* (OBN), and *Quran Best*, with the support of the local government and the community. The activities are not only oriented toward the provision of physical facilities in the form of boreholes but also emphasize the importance of social approaches, education, and community empowerment to ensure that the program's outcomes are utilized optimally and sustainably.

In general, the activities carried out are educational, participatory, and collaborative, integrating the technical aspects of clean water provision with a socio-communal approach. The educational aspect is demonstrated through socialization and counseling efforts aimed at informing the community about equitable and sustainable water resource management and utilization. The participatory aspect is realized through the active involvement of residents in "pipanization" activities and communal work (*kerja bakti*) for installing water distribution pipes to residential homes. Meanwhile, the collaborative aspect is evident in the synergy established between the university, social communities, the local government, and the community from the planning phase through to execution.

Through these activities, the service team from Universitas Lumajang serves as academic mentors and supervisors for water utilization, while simultaneously providing material support in the form of PVC piping to facilitate clean water distribution. With this approach, this community service project is expected to enhance public awareness and responsibility regarding the importance of collective water resource management, strengthen the values of mutual cooperation (*gotong royong*), and create a sustainable partnership model between the university and the community in supporting village development based on real needs.



Figure 1. Community Service Activities  
Source: Activity Documentation (2025)

The first form of activity is community socialization and education, implemented as an initial step to foster a shared understanding and awareness regarding the importance of equitable and sustainable clean water resource management. This activity aims to provide comprehensive information to the community concerning the program's objectives, the benefits of clean water for daily life, and the collective responsibility in maintaining the sustainability of these resources.

In its implementation, the community service team from Universitas Lumajang played an active role in delivering educational material to residents through face-to-face methods and interactive dialogues. The material presented included explanations of water governance, the formation of water user groups (*Pokja Air Bersih*), and the delineation of roles and responsibilities among residents to ensure that facility utilization remains transparent and harmonious.

Beyond providing theoretical understanding, this activity also emphasized persuasive and participatory approaches, wherein residents were encouraged to voice their opinions, provide input, and reach mutual agreements regarding water distribution regulations. Through these socialization activities, it is expected that the community will develop a sense of ownership over

the constructed clean water facilities and be capable of managing and maintaining them independently for long-term benefit.



Figure 2. Community Service Activities  
Source: Activity Documentation (2025)

The second form of activity is the assistance in the "pipanization" process, focusing on efforts to help the community distribute clean water from the borehole to residential settlements. This activity is not merely technical but also carries a strong social value, as it involves direct community participation throughout every stage of its implementation.

In this activity, the community service team from Universitas Lumajang played an active role by providing material support in the form of PVC piping to facilitate the water distribution process to residents' homes. Furthermore, the team provided basic technical assistance during the pipe installation process, such as arranging distribution routes, connecting the pipes, and supervising the system to ensure the water delivery functioned effectively.

This assistance was implemented through collaboration among the residents, village officials, and the university via communal work (*kerja bakti*) activities, which served as a means to strengthen social ties among citizens while reinforcing the values of mutual cooperation (*gotong royong*). Through this activity, the community gained not only direct benefits in the form of clean water access but also practical experience and knowledge in managing and maintaining clean water facilities within their environment. This participatory approach is expected to foster a sense of collective ownership and shared responsibility for the constructed facilities, thereby ensuring the independent sustainability of the program.



Figure 3. Community Service Activities  
Source: Activity Documentation (2025)

The third form of activity is the supervision and monitoring of clean water utilization, conducted by the Universitas Lumajang service team as part of their academic responsibility and

commitment to ensuring program sustainability. This activity plays a crucial role in assessing the effectiveness of program implementation, the extent of clean water facility utilization by the community, and the social impacts generated after the program's commencement.

In its implementation, the team conducted direct field observations to ensure that water distribution operated smoothly and equitably, in accordance with the mutual agreement between the community and local managers. Monitoring also encompassed an evaluation of community participation in pipe network maintenance, the arrangement of water distribution schedules, and the resolution of potential issues arising in the field.

Beyond the technical aspects, this activity monitored social changes within the community, such as increased awareness of the importance of collective clean water management, the growth of cooperation among residents, and the formation of community self-help groups tasked with maintaining shared facilities. Through these supervision and monitoring activities, Universitas Lumajang can provide feedback and recommendations for improvement to enhance the efficiency and sustainability of the program in the future.



Figure 4. Community Service Activities  
Source: Activity Documentation (2025)

Furthermore, this community service project serves as a medium to strengthen partnership networks between the university, social communities, the local government, and the general public. This cross-sector collaboration is expected to become a sustainable service model that can be adapted in other regions facing similar challenges.

### **Short-Term Impact**

The most immediate short-term impact is the availability of clean water access for the community surrounding the program site. With the functional artesian well and the piping system constructed through mutual cooperation, residents can meet their daily water needs for cooking, washing, bathing, and other sanitation requirements. Additionally, this initiative has led to increased community awareness regarding the importance of collective and sustainable water resource management (Susandi et al., 2025).

Another emerging impact is the establishment of social cooperation and a spirit of mutual assistance among residents, fostered through socialization, discussions, and communal work activities. The involvement of Universitas Lumajang in providing education and assistance has also strengthened the partnership between the university, social communities, the local government, and the local population. Consequently, this project serves as a platform for practical learning in the application of public administration and community empowerment.

### **Long-Term Impact**

In the long term, this project has the potential to foster community independence in clean water management. Through the establishment of water user groups (*Pokja Air Bersih*) and a clear delineation of responsibilities, it is expected that the community will be capable of

managing, maintaining, and expanding the water distribution system without dependence on external parties.

Furthermore, the availability of clean water sources can drive improvements in public health and quality of life, reducing the risk of waterborne diseases and enhancing environmental sanitation conditions. From a socio-economic perspective, access to clean water potentially increases community productivity—for instance, through household-scale agriculture, water-based small businesses, or by saving time previously spent on locating water sources.

For Universitas Lumajang, this project yields long-term impacts by strengthening the university's role as an agent of social change. Through active involvement in collaborative and community-oriented service activities, the university can develop sustainable, partnership-based service models and reinforce its academic reputation in the fields of community empowerment and public governance.

### **Internal Evaluation**

Internal evaluation was conducted as a form of reflection and quality control over all stages of the community service activities, spanning from the planning and implementation phases to the follow-up actions. This evaluation aimed to assess the extent to which the activities aligned with the initial plan, identify emerging constraints, and provide constructive input for the improvement of similar programs in the future (Sopanah et al., 2023).

The evaluation process was carried out by the Universitas Lumajang service team through routine discussions and progress reports. Each team member was responsible for providing feedback regarding coordination aspects, field implementation, the effectiveness of socialization, and the level of community participation. From the evaluation results, it can be concluded that the activities proceeded effectively and in accordance with the predetermined objectives, despite several challenges that warrant attention in future implementations.

Several key findings from the evaluation indicated that cross-institutional cooperation between Universitas Lumajang, *Offroader Bersatu Nusantara* (OBN), *Quran Best*, and the local government was the critical success factor of the project. The established synergy ensured effective program execution and garnered full support from the community. Nevertheless, the team also identified several technical constraints in the field, such as limited manpower during the piping process, the need to synchronize schedules with community activities, and inter-neighborhood (*RT/RW*) coordination that required more intensive communicative approaches.

Beyond technical aspects, the evaluation highlighted the importance of strengthening the role of water user groups (*Pokja Air Bersih*) as local institutions that manage clean water utilization independently. The service team assessed that further training regarding water resource governance, basic administration, and facility maintenance mechanisms is necessary to ensure program sustainability.

Overall, the internal evaluation results demonstrate that this service project successfully achieved its objectives, namely increasing access to clean water and fostering collective community awareness in water resource management. This evaluation also serves as a foundation for Universitas Lumajang to formulate future service strategies that are more structured, adaptive, and possess a long-term impact on the community.

## **4. CONCLUSION**

The community service project through the Sumur Bersih (Clean Well) program in Tumpeng Village, Candipuro District, Lumajang Regency, has provided tangible benefits to the community by providing access to clean water. The collaboration between Universitas Lumajang, *Offroader Bersatu Nusantara* (OBN), *Quran Best*, and the local government was successfully executed and received full support from the community.

Through socialization activities, assistance in the piping process, and monitoring of water utilization, the community has gained a deeper understanding of the importance of collective and sustainable water resource management. This program has also fostered a spirit of mutual

cooperation (gotong royong), strengthened social relations among residents, and enhanced the partnership between the university and the community. Overall, this project has not only succeeded in providing clean water but has also served as a means of community empowerment, enabling residents to become more independent in managing and maintaining the sustainability of water resources within their environment.

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