



## Paradiplomacy on Water Security: An Analysis of the Cooperation Between the Malang City Government and United States Agency for International Development Indonesia (USAID) in the USAID-IUWASH TANGGUH Project

**Nurur Rahmah Nia Sholihah**

International Relations Study Program, University of Muhammadiyah Malang, Indonesia  
[rahmania882@gmail.com](mailto:rahmania882@gmail.com)

**Devita Prinanda**

International Relations Study Program, University of Muhammadiyah Malang, Indonesia  
[devitaprinanda@umm.ac.id](mailto:devitaprinanda@umm.ac.id)

### Abstract

This study examines the implementation of the Malang City Government's cooperation with USAID in the IUWASH Tangguh program in the framework paradiplomacy. This study uses a qualitative research method. Data were obtained from the actors involved and policy documents. Data collection techniques were carried out through interviews, observations, and review of policy documents. The findings of this study indicate that the paradiplomacy strategy in improving water security is quite positive, referring to increasing public access to drinking water in Malang City. Previously determined roles and tasks bound the cooperation within the USAID IUWASH Tangguh program. Cooperation is not carried out in the form of material assistance but in the form of improving the quality of Human Resources of the actors involved in clean water security. This paradiplomacy strategy aligns with and supports the Indonesian Government's plan to accelerate the achievement of the 100% Access to Safe Drinking Water target by 2026.

**Keywords:** paradiplomacy, water security, USAID IUWASH Tangguh

### INTRODUCTION

The increasing connectivity between countries ultimately changes the pattern of global relations between countries from being very state centred to multi-actor, where subnational and non-state actors can promote and communicate their potential and interests beyond national borders. This interaction is called paradiplomacy. Paradiplomacy can be used to achieve the interests of actors to cooperate with multi-actors from non-traditional actors such as individuals, organizations, groups, and sub-

state actors in global cooperation (More & Kurniawati, 2022).

In Indonesia, the central government gives its optional authority to local governments as sub-state actors to cooperate with foreign parties. The existence of local governments in this cooperation is due to their autonomous position, namely as decision-makers in the policy realm in their regions. So far, cooperation carried out by local governments has been more oriented towards improving the regional economy, education, health, and

Corresponding author(s): Nurur rahmah nia sholihah, Email: [rahmania882@gmail.com](mailto:rahmania882@gmail.com)

**Article history:** Received, 24 January 2024; Revised, 22 April 2024; Accepted, 2 May 2024.

To cite this article: Sholihah, N. R. N., & Prinanda, D. (2024). Paradiplomacy on Sustainable Water Optimization: An Analysis of the Cooperation Between the Malang City Government and United States Agency for International Development Indonesia (USAID) in the USAID-IUWASH TANGGUH Project. *JPSI (Journal of Public Sector Innovations)*, 8(2), 105–115.  
<https://doi.org/10.26740/jpsi.v8n2.p105-115>

tourism. However, along with the climate crisis, the government is encouraging local governments to develop strategic cooperation with various actors involved in the issue of water security. The impacts of climate change, such as drought, flooding, rising temperatures, and rising sea levels, threaten the government's capacity to provide water services and the feasibility and distribution of clean water to the community. Therefore, efforts are needed to build resilience to climate change as an essential step in managing water supply (International Water Association, 2024).

The Indonesian government has encouraged local governments to prioritize regional programs and budgets related to the development of drinking water and sanitation services so that they can be implemented optimally (Sandy, 2020). Fulfilling the need for clean water for the community is a mandate for the government to carry out development in its region through Law Number 23 of 2014 concerning Regional Government and Government Regulation Number 38 of 2007 concerning the division of government affairs. This policy regulates the provision of drinking water as a mandatory affair for local governments as a basic infrastructure service, which is realized through the existence of the Regional Drinking Water Company (PDAM) (Kornita, 2020).

One of the local governments facing serious challenges related to the availability of clean water is Malang City. Malang City has an area of 114.26 km<sup>2</sup> with a population of around 843,810 people. In the last decade, the city has experienced rapid economic growth originating from the service sector. The city also grew rapidly because it became a buffer city for industries in the surrounding cities. This condition has triggered an increase in population, where the rate of population growth requires more and more water availability, while land that can be developed to optimize water resources will decrease due to the increasing need for land for human activities (Barenlitbang Kota Malang, 2019).

Another problem is that the city of Malang has experienced several natural disasters in the form of floods that have had an impact on the source of clean water supply for the Malang City Regional Drinking Water Company (Perumda AM Tugu Tirta). This disaster hit the water source, which caused the water to become cloudy due to the high intensity of rain and the presence of the water source not far from the river (Perdana & Hartik, 2022). The area around Malang also experienced an increase in the intensity of heavy rain, which resulted in landslides or floods that disrupted clean water services for residents due to the breaking of three transmission pipes

belonging to Perumda AM Malang City. This incident had an impact on the distribution of clean water to 13 villages in Malang City. This disaster has an impact on clean water infrastructure and must be repaired immediately to anticipate disasters in the future (Edgar, 2021).

The Malang City Government has budgeted the APBD specifically for drinking water management. However, this budget is not enough to meet budget needs, so collaboration with external partners is expected to help meet financing through various options. The government's policy in supporting the drinking water development program is through cooperation between the Malang City Government and the United States Agency for International Development (USAID) through the Indonesia Urban Resilient Water, Sanitation, and Hygiene (IUWASH Tangguh) program. The purpose of this collaboration is to increase access to safe drinking water and sanitation, as well as hygiene behavior (WASH) in vulnerable urban areas and strengthen WASH services and climate-resilient water resource management (PSDA).

Several previous studies have discussed the implementation of cooperation with USAID in the drinking water improvement program. In the study 'Implementation of USAID IUWASH PLUS Water and Sanitation Program Development Assistance in Indonesia in 2021' by using the concept of foreign aid, the implementation of the drinking water improvement program has been discussed (Farid R & Zahidi 2023). Muthiah Duhaha's (2023) research which discusses Cooperation of the Republic of Indonesia with USAID in Handling Sanitation and Drinking Water Problems in North Sumatra which is explained also uses the concept of foreign aid. The similarity with this study is that it discusses efforts to increase access to drinking water for the community. However, the difference is that this study discusses the IUWASH Tangguh program using the the paradiplomacy framework in environmental security by focusing on improving drinking water.

## METHOD

This study uses a qualitative method to describe the activities carried out by multi-actor cooperation in the program to increase access to safe drinking water and climate resilience. This study involved the Malang City Regional Development Planning Agency (Bappeda) which acts as the main actor in planning and bridging cooperation, USAID representatives, and the community. Data collection was obtained through triangulation of interview techniques, observation, and policy document studies. In-depth interviews were conducted with

representative of Bappeda, program facilitators, Governance Specialist, Social Behavior Change/GESI Specialist from USAID who provided assistance to the program. The author also attended several meetings held by USAID with regional officials to better understand the decision-making process. To support the completeness of the data, the researcher also conducted a literature study of reports, journals, books, and national and regional work plan documents.

## RESULTS AND DISCUSSION

### *Environmental Security*

The expansion of the scope of the study of International Relations has led to a shift in security issues; one of the issues that has developed along with the complexity of society in the economic field is the emergence of environmental problems. Environmental security has become an important concern among security, environmental, and development researchers and policymakers in environmental and development studies (Dabelko, 2022). Environment and security have many meanings, which also cause differences in the meaning of environmental security. The environment has meaning as a living organism, a physical and chemical component of the entire earth system, or it can also be understood as the external conditions that surround an entity (Boyden et al, 1990; Dabelko, 2022). Meanwhile, security can be described as a physical and psychological condition that feels safe and peaceful from danger or threats. Environmental security can be interpreted as a state of national security or human beings becoming threatened due to environmental changes, or, in fact, the environment that has changed to no longer be safe for humans (Hough, 2019).

Environmental security is a concept that is considered important in security studies because of the increasing awareness that changes in the environment are not only risky for the ecosystem but also pose a risk to human welfare. This is because environmental changes can threaten basic environmental access such as clean water, soil and food. Environmental change also contributes to violations of civil and political rights such as the right to livelihood, the right to health, restricting access to the economy, and the social opportunities that people need to meet their livelihoods (Matthew et al, 2009; Dabelko, 2022).

Environmental securitization can be understood as an effort to maintain or preserve the local environment and the biosphere on Earth. One of the agendas carried out in overcoming problems in the government environment

contains decision-making and policies that discuss efforts to overcome environmental problems, improving people's ability to adapt to climate change, which aims to reduce human activities that can have an effect on environmental degradation. For developing countries themselves, environmental damage has a negative impact that is significantly felt by vulnerable populations. This is also because there are still many people whose lives depend on natural resources such as agriculture and marine (Sayyidati, 2017).

MacQuarrie and Wolf (2013) believes there is a possibility that it could cause or even exacerbate tensions between countries, especially at the *substate* level, which has often faced conflicts over declining water availability. However, from here, the potential for cooperation in the water sector can also be seen as a tool for environmental peace. Therefore, the issue of water security is closely related to the issue of environmental security because human welfare is greatly influenced and depends on the availability of water.

In addition, it is also important to maintain water governance that functions to ensure the availability of water for all people who need it. Water governance and management also needed to consider the occurrence of climate change and global warming, which are now increasingly having an impact on life. Water scarcity can be caused by mistakes in water management, lack of institutional capacity and adaptive behaviour to water scarcity, which can further impact the environment and even cause economic and social instability. Supporting water governance by increasing institutional capacity can be done through holding workshops, and support from the government is needed in the form of regulations that regulate the increase in water availability and the alignment of goals between the central government and local governments (Niyitunga, 2019).

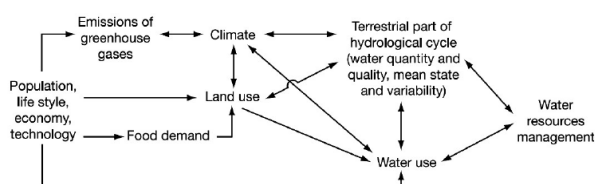
### *Obstacles to Secure Drinking Water Access*

Factors that cause the urban water crisis in Indonesia: Population problems; The overall coverage of the Perumda AM services is still small, which indicates the limited access that the community has, adding uncertainty in getting access to clean water and safe drinking water; The change of seasons factors that have an impact on the uncertainty of water supply is uneven (USAID IUWASH PLUS, 2021). The problems related to access to drinking water above indicate that the government's steps to maintain environmental security from climate change factors and efforts to preserve it are very important because they can concern human welfare in meeting their needs.

Almost all human activities require water, and there is even an increase in demand or need for water due to the increase in the number of people. The rate of population growth and the movement of people to cities causes land use that sometimes does not consider soil and water conservation and increases population activities such as cooking, bathing, drinking water needs, industrial activities and other activities that can have an impact on erosion, agriculture and groundwater exploitation (Sakinah & Pahlawan, 2023).

The number of people in Malang City in 2021 amounted to 843,810 people, with this population density per square kilometre being 7,667 people. Until now, the conditions of land use and utilization in Malang City have changed the increasingly widespread built-up areas in areas that should not be utilized/used, either naturally or planned. This is also due to the increasing population of Malang City, which is accompanied by population density and increasing land needs for housing, which has implications for increasing environmental damage. In fact, it is not uncommon for alternatives to convert built land for residential areas that use river borders and Green Space Areas (RTH). The main contributing factor to population density is migration because Malang City is an urban area that is an economic centre and an education centre (Barenlitbang Kota Malang, 2019).

Picture 1. Human Needs in Meeting Water Needs



Source: Taufik et al. (2022)

From Figure 1, it can be understood the relationship between water demand and factors that affect the increase in water demand and factors that can affect water quality. For example, increasing population, economic activities, technology and human lifestyles will affect the increase in food and land needs, which from these activities will increase the carbon gas emissions produced, where the increase in food and land needs will also require more and more water supply. Meanwhile, the increase in carbon gas emissions will affect the climate conditions. Volatile climate change will ultimately affect the hydrological system the quantity and quality of water. All of these activities have a significant effect on the water source

treatment management system, so the government must make preventive efforts to maintain water availability in its area (Taufik et al., 2022).

The definition of drinking water and drinking water quality requirements has been defined through the Indonesian Minister of Health Regulation No.492/Menkes/Per/IV/2010, namely water that meets health requirements has gone through a treatment process or without treatment and can be directly consumed (Kementerian Kesehatan RI, 2010). Safe drinking water is water that has met the standards in terms of quality. Namely, it has met the applicable quality standards, such as not being polluted by pollutants and not endangering health either directly or indirectly (Setditjen P2P, 2023). The state of access to proper and safe drinking water that is not optimal will affect public health, especially in low-income communities (MBR), which get the majority of water sources from unprotected wells such as publicly owned water sources or water sources owned by neighbours. This causes the vulnerable community to be exposed to diseases, which are also at risk of transmission to other areas, which endangers urban health.

There are several problems that can affect public health, including the lack of running water *hygiene* practices that are difficult to implement, such as washing hands which cause a high risk of exposure to diseases due to microorganisms, bacteria and viruses. In addition, improperly treated water will cause the water to be contaminated with pathogenic bacteria that can cause disease. This problem is vital for public health, but not a few low-income people still have difficulty getting proper drinking water (USAID IUWASH PLUS, 2021).

The obstacles that are often faced by the community in obtaining drinking water services through proper and safe pipeline access include financial factors where MBR's income is uncertain while the cost for the initial connection of the piping network drinks does not include the cost of installing pipes in the house, the drinking water service factor is not optimal for MBR due to the lack of water supply at the location, and the availability of alternative sources that can provide access to drinking water such as well water and bottled water. However, this does not guarantee that the water they get is decent and safe. Meanwhile, the availability of piped water coverage is not in all regions due to the difficulty of development and maintenance, especially in poorly planned, densely populated areas and informal areas where the status of ownership of assets or properties is not legal.

Coupled with the complexity of the requirements requested by Perumda AM, such as regulations that require

the ownership of permits for the construction of new pipeline joints per parcel and additional proof of land and building tax (PBB) bills. In addition, technical constraints that require a change in the construction of cooking from vertical meters to horizontal, which have an impact on the location of the parcel, can even interfere with public road access for houses located in narrow alleys (Farida Rahmawati et al., 2023), especially when the location of households that have not been served by the pipeline network from Perumda AM has to pay additional costs for the installation of house connections (SR) or multiple costs to buy water from other sources, and lack of understanding of piped drinking water access.

The existence of water that cannot meet the needs of the community and the deterioration of water quality, especially due to the influence of climate change, while the increasing demand for water has become an increasingly common problem in the field of water resources. In fact, access to clean water is increasingly difficult and will affect many sectors, one of which is health, which can cause death. In fact, the community only realized the condition/quality of clean water in their environment after the trigger was held with the Sanitarian Puskesmas team. Therefore, assistance in the form of socialization, training and so on is urgently needed by the community to increase awareness so that a sustainable joint commitment is formed. to conserve and maintain the availability of water to meet the needs of the community. This indicates that environmental resilience is closely related to the need for clean water that is safe to be used as drinking water (USAID IUWASH PLUS, 2021).

To meet the need for clean water and drinking water, planning, management, implementation of construction projects, infrastructure rehabilitation, infrastructure maintenance and monitoring and evaluation of clean water supply systems are required. This includes systems that use piping networks as well as those that do not use piping. Malang City has a drinking water supply obtained from various water sources from areas in Malang City and its surroundings, with 68.9% coming from Malang Regency, 19.4% coming from Batu City, and Malang City only having 11.7% (Nirwana et al., 2019). There are two types of drinking water distribution in Malang City, namely by using a pipeline network and not a pipeline network commonly called 'not a pipeline network' (BJP). Drinking water that uses a pipeline network has a water source from the Perumda AM Tugu Tirta, namely JP PDAM and the Drinking Water Entrepreneurs Association (HIPPAM), which is managed by community groups but is under the responsibility of the Department of Public Works, Spatial

Planning, Housing and Residential Areas (PUPRPKP) Malang city, namely JP HIPPAM, both from water supply and in the procurement of pipeline infrastructure. The total number of houses that have been connected to JP PDAM is 170,416 houses, while JP HIPPAM is 12,545 houses (Bappeda Kota Malang, 2023).

Non-Pipeline Network or BJP is drinking water obtained through the digging of wells, borewells or other springs. Monitoring of water sources from the BJP will be carried out by the Sanitarian team of the Health Center. Of these various types of drinking water distribution, there is no security system to empower water sources, especially to anticipate a decrease in water discharge and water quality due to climate change.

In one of the areas in Malang City, namely Sukun District, it has been identified that around 32,207 people use Perumda AM services seen from customer data from the entire population, while other people still use groundwater; this indicates that there are still a few people in the area who have guaranteed access to clean water (Balqis et al., 2023).

### ***Triggering Factors for Accelerating Access to Safe Drinking Water***

Some of the key factors that can trigger the acceleration in increasing access to drinking water are commitments from the government through supportive regulations, a variety of service options and drinking water financing options, improving the performance of Drinking Water Supply System (SPAM) operators, or through cooperation that can support the acceleration of the achievement of targets. Support through regulations is an important factor in accordance with Government Regulation Number 2 of 2018 concerning Minimum Service Standards of Regency/ City Governments to meet the needs of drinking water in their areas as a form of fulfilling the basic needs of basic services for the community. In addition, activities are also held that can stimulate stakeholders in supporting the process of developing regulations both from the national level to the regional level, such as involving APEKSI to support local governments in providing the necessary documents and encouraging the preparation of RPJMD at the City/Regency level that can support the improvement of WASH services (DAI Global LLC, 2023).

In line with the 2020-2024 National Medium-Term Development Plan (RPJMN), the Government of Indonesia has set a target for 100% access to decent drinking water and a target of 100% safe drinking water by 2026. Malang has a Regional Medium-Term Development Plan (RPJMD) with the substance of development programs in

Malang City in four missions, one of which is to prioritize access to quality education, health, and other basic services guaranteed for residents. The realization of this mission can be seen through the vision of city development, namely the concept of 'Malang Nyaman', one of which discusses the field of drinking water, garbage and waste management, which is prioritized in securing raw water and meeting the target of 100% drinking water and access to proper sanitation (Barenlitbang Kota Malang, 2019).

To support this, the Malang City Government has budgeted around 0.77% of the APBD specifically for drinking water management from 2020 to 2022 (Pemkot Malang, 2023). However, this budgeting is considered insufficient to meet budgeting needs, especially in the drinking water sector, so through collaboration with external partners, it is hoped that it can help facilitate budgeting through various options. The Malang City Government's commitment to supporting the achievement of safe drinking water through the establishment of policies, regulations and strategic documents is supported by programs that involve collaboration with various parties, one of which is collaboration with *United States Agency for International Development* (USAID).

The United States Agency for International Development (USAID), which was established in 1961 by the United States government, is a foreign aid agency that focuses on helping developing countries in the fields of health, humanitarian, environmental and economic fields. The signing of USAID cooperation with Indonesia has been in effect since 1950 when technical and economic cooperation began. The government of Indonesia has been striving for access to drinking water for all its people, which can be supported through integration with other programs, as evidenced by the cooperation agreement with USAID, which has been established for more than ten years. This agreement begins with the USAID IUWASH, IUWASH PLUS and IUWASH Tangguh programs, each of which is implemented within a period of five years (USAID IUWASH Tangguh, 2022).

The collaboration between the Government of Indonesia and foreign institutions, namely *the United States Agency for International Development* (USAID), in IUWASH clean water management in the initial period, namely from 2010 to 2016, has brought good results. This can be seen from the increasing approach to the community and changes in community habits in water management (Dary et al., 2019). The *Assistance Agreement* carried out in the USAID IUWASH PLUS program was carried out in 2014 and came into effect from 2016 to 2021 (Adetya & Rasyidah, 2022). The implementation of this agreement

focuses on clean water and sanitation that is decent and safe for urban residents as a manifestation of the SDG's 2030, where one of the targets is the urban poor. The targeted reach of this program is poor and vulnerable groups, especially those who want to alleviate barriers and increase access to the water, sanitation, and hygiene (WASH). Through this five-year cooperation program, the Government of Indonesia continues to collaborate, especially on improving safe drinking water and climate resilience, including the management of water resources that can support safe drinking water services, namely with a sustainable supply of raw water, especially in overcoming climate risks.

Followed by the implementation of the USAID IUWASH PLUS program, which was held in eight cities in East Java province, has resulted in access for the community to clean water for 433,195 people and new pipe connections for the B40 community totalling 105,245 (Farid R et al., 2023). As a form of improving water quality services implemented through the Prima Drinking Water Zone (ZAMP) program in the Pondok Blimbing Indah Housing area, Malang City as a *pilot project*. The ZAMP program produces water that can be consumed directly from the faucet without the need for traditional (cooked) processing or treatment. This program is carried out as an application of Government Regulation Number 16 of 2005, where Perumda AM, in distributing water to the community, must be qualified for drinking water in 2008. (Prawira, 2018)

In the latest program, namely USAID IUWASH Tangguh (*Indonesian Urban Water and Sanitation Hygiene - Tangguh*), APEKSI as the Association of Municipalities of All Indonesia partnered with USAID to accelerate the achievement of the target of 100% Safe Drinking Water Access by 2026 for six selected cities such as Pematang Siantar City, Pontianak, Magelang, Salatiga, Surabaya, and Malang (APEKSI, 2023). Cooperation with USAID that continues the implementation of the USAID IUWASH Tangguh program to set goals in the form of accelerating development in the field of climate-resilient drinking water and sanitation (Pokja PPAS, 2022). Where the selection of these regions is based on regional readiness both from the commitment of the local government and the completeness of documents such as the APBD, RPJMD and other planning documents that must be collected, the City of Malang agreed on the USAID IUWASH Tangguh program in 2021 (USAID IUWASH Tangguh, 2023)

The beginning of the collaboration was included in the IUWASH program with the target of 'Feasible' access, followed by IUWASH Plus, which focuses on

environmental sanitation for the urban poor, and currently, the IUWASH Tangguh program, which focuses on 'Safe' access to drinking water and sanitation. IUWASH Tangguh, which focuses on 'Safe' access to drinking water, is in line with the SDG's target of not only 'Feasible' access but also ensuring safe access to drinking water and sanitation and is more resilient to climate change. This is also supported by the policy of the Government of Indonesia, which has ratified the agreement on climate change. The majority of programs run and assisted by USAID are government programs that require further facilitation so that the program can run smoothly.

#### ***Analysis of USAID's Cooperation with the Malang City Government***

The implementation of Regional Cooperation with Overseas Institutions (KSDLL) in a region refers to Government Regulation Number 28 of 2018 concerning Regional Cooperation. Article 23, Paragraph 2 explains that cooperation can be carried out in activities to develop science, technology, and culture, improve technical capabilities and government management, promote regional potential, and others. In addition, this regulation also explains the requirements for carrying out cooperation so that the cooperation between the Malang City Government and USAID is a continuation of the cooperation carried out by the central government, which has selected several cities as the target of the implementation of the program, the cooperation already has diplomatic relations with the country of origin of the institution concerned, the cooperation is carried out within the scope of local government affairs by not interfering in domestic government affairs. The collaboration between the Malang City government and USAID is carried out in accordance with the direction of the regulation, namely through the development of science and improving technical and government management capabilities for the community, regional apparatus, and drinking water service providers.

In accordance with the purpose of implementing this collaboration, the assistance provided by USAID IUWASH is not in the form of physical activities but in the form of improving Human Resources or actors who play a role in it in terms of knowledge, *mindset*, *skills*, and motivation, based on existing conditions to support the achievement of safe drinking water targets. The implementation of the IUWASH Tangguh program, which is carried out in several technical assistance activities by USAID, namely dialogue and policy advocacy that can support increasing access to safe and climate-resilient drinking water, *knowledge management* from the

community and drinking water service providers, supporting and strengthening working groups in the surrounding areas as non-governmental organizations that are closely related to the community, and increasing drinking water capacity through an evaluation process. Further details of the activities will be described as follows:

#### ***Policy dialogue and advocacy***

Advocacy is carried out through technical assistance in developing regional planning for the 2025-2045 RPJPD and 2025-2029 RPJMD in line with long-term and medium-term national targets, especially priority issues in the *Water, Sanitation, and Hygiene (WASH)* and *Water Resilient Management (WRM)* sectors. Activities in the form of *Sanitation Index* and *Governance Index* Workshops that can help determine locations that are used as assisted villages in Malang City; *Focus Group Discussion (FGD)* to identify investment programs in the drinking water sector of Malang City and inventory Perumda AM's investment needs by inviting Perumda AM Tugu Tirta.

In addition, an FGD was held to prepare an Annual Work Plan (RKT), which uses an integrated approach of the results of three types of *indices* to monitor and evaluate performance assessments, especially in the services of the Drinking Water Access and Sanitation (AMSAN) and Water Resources Management (PSDA) sectors, namely using the *PDAM Index*, *Governance Index*, and *Sanitation Index* that are climate resilient and *Gender responsiveness* which can later increase the sector's achievements every year. For assistance in water resource management, a Digitalization FGD was carried out to record the discharge and quality of the water source/production of Perumda AM Tugu Tirta (USAID IUWASH Tangguh, 2022). This is done because, so far, Perumda AM has only measured production meters without monitoring the discharge of water sources. So, if there is a decrease in discharge from water sources, it will not be easy to know if there is no document that records it formally.

#### ***Knowledge management***

Socialization and understanding are not only aimed at the community but also at the person in charge/regional drinking water service provider. The Malang city government collaborates with USAID to help socialize the importance of preserving water resources by raising awareness from all aspects of society. This socialization was in the form of technical assistance carried out in two villages, namely Merjosari Village, Lowokwaru District and Samaan Village, Klojen District. The technical assistance carried out in the two villages resulted in the



conceptual dissemination of safe drinking water and sanitation as well as the identification of *Water, Sanitation, and Hygiene* (WASH) problems in their environment. After being identified, technical assistance was carried out in the form of triggering activities and the preparation of Community Activity Plans (RKM) related to drinking water and sanitation at the RW and Village levels at two technical assistance locations. The implementation of the World Water Day Commemoration is to increase understanding, commitment, and collaboration from all stakeholders in supporting increased access to safe drinking water.

This socialization can run well and is supported by social behaviour *change* (increasing the adoption of social behaviour), increasing participation, and the role of women in supporting the success of water resources management programs. This change in behaviour contributes positively to the maintenance of the quantity and quality of sustainable water sources. The adoption of this activity is manifested in activities carried out together with the community, as well as advocacy through various media.

**Supporting and strengthening regional level Working Groups**

The assistance carried out is not only in the form of socialization to the community but also training is carried out to prepare a work plan (RENJA) in the field of safe drinking water, safe sanitation, water resource management and *Gender Equality and Social Inclusion* (GESI) for housing and residential areas working groups (Pokja PKP). In addition, social inclusion and public accountability are also discussed to ensure that people get equal opportunities regardless of their background through policies and actions that support equal access (United Nations, 2024). To support the running of this program, cooperation will be carried out with local non-governmental organizations, the private sector, and community groups at the regional level, which are considered to have a significant impact as organizations that are close to the community.(United Nations, 2024)

**Increasing drinking water capacity**

Technical assistance includes optimizing budget allocation in the WASH development plan, reviewing the needs and gaps in human and vocational training in the drinking water sector, and increasing the capacity of human resources in drinking water utilization companies, which will then be officially implemented. Technical assistance was also provided to Perumda AM Tugu Tirta Malang as a drinking water provider in Malang City to socialize the PDAM *Index* and socialize capacity building for energy

efficiency, which will be carried out in collaboration between USAID IUWASH Tangguh and USAID SINAR. Socialization was carried out for the introduction of the PDAM *index* tool, which is useful for monitoring groundwater and/or surface water using applications/systems in monitoring water resources and measuring *baseline* results (situation/ condition or basic information of the target in natural conditions before intervention) which from these results can be evaluated and actions that need to be taken next. In addition, a workshop was also held to discuss the assessment of budgets that are useful for increasing public spending, especially in the safe drinking water, safe sanitation and water resources management sectors. With *this Index*, USAID IUWASH Tangguh examines the effectiveness and efficiency performance of Perumda AM related to the scope of clean water services, operational performance, environmental quality, human resources and gender equality, customer relations, financial indicators, investment and financing sources.

Picture 2. Implementation of the 2023 Governance Index (Godex) Preparation Workshop



Source: Author's Documentation

Figure 2 is the implementation of the *Governance Index Preparation Workshop*, which was carried out to measure the implementation of the *Minimum Service Standards (SPM)* for drinking water access for community needs through data loading in several indicators. The implementation of the workshop also invited regional apparatus operators such as the Health Office, Public Works Office, Spatial Planning, Housing and Residential Areas, and Perumda AM Tugu Tirta, Head of the Legal Section, to ensure harmony in data input.

**Analysis of Sustainable Water Optimization as a Result of Collaboration**

The implementation of activities through assistance from USAID indicates the government's efforts to increase



understanding, ability and efforts to conserve water resources in Malang City, which can be seen from the following data on access to decent and safe drinking water:

Table 1. Data on Access to Decent and Safe Drinking Water in Malang City

Assistance Location	Total Population 2022	Drinking Water Achievement			
		2021		2022	
		Proper	Safe	Proper	Safe
Malang City	844.933	94,20 %	N/A *	95,82 %	84,59 %

Source: Malang City Annual Activity Plan *Project Year 3*  
 \*N/A (data not yet available)

Table 2. Malang City Drinking Water SPM Achievement Data

SPM	Drinking Water	Year		
		2020	2021	2022
Malang City	Proper	93,29%	94,20%	95,82%
	Safe	N/A	N/A	84,59%

Source: Malang City Annual Activity Plan *Project Year 3*

Tables 1 and 2 show the achievement of increasing access to decent and safe drinking water along with targets that can trigger *stakeholders* to continue to support the running of the program in accordance with the concept of *environmental security*, where the state seeks to secure its resources through decision-making and policies to overcome environmental problems and improve climate adaptation for its people. Indonesia, as a country with good water resource potential, has made efforts to secure the environment to support the achievement of safe drinking water targets and the preservation of water resources through technical assistance from USAID as an external development partner to maintain sustainable water access and achieve the target of safe drinking water access, such as the use of *PDAM Index* which can monitor the effectiveness and efficiency of Perumda AM. The implementation of activities in 2023 will be dominated by mentoring and learning activities to increase awareness among community and regional apparatus operators and to collaborate in achieving the safe drinking water target. Thus, the government's efforts in implementing environmental security can be understood as a manifestation of preventing conflicts that can arise due to the disruption of resource availability.

For the activity plan for *Project Year 3* or the period from October 2023 to September 2024, the activities that will be carried out include assistance in the preparation of regional policies and strategies (Jakstrada) for drinking water through the preparation of a Feasibility Study for the Drinking Water Development System (SPAM);

collaboration with Regional Apparatus Operators (OPD) supporting *Corporate Social Responsibility* (CSR) for assistance in the preparation of *concept notes* (proposal) CSR in the field of drinking water, and connecting Perumda AM with other alternative funding sources to support the development of SPAM; facilitating the preparation of proposals and in the implementation of the Community Work Plan (RKM) from Samaan and Merjosari Villages, and replicating in two new assisted villages; campaigns and promotion of safe drinking water through social media which are also carried out on an ongoing basis in the community.

Meanwhile, technical assistance for Perumda AM is in the form of the preparation of a 2024-2028 business plan, the improvement of the existing Prima Drinking Water Zone (ZAMP) system and will identify new potential areas, strengthening the HIPPAM institution and activities that are always carried out every year in the form of performance measurement through the *PDAM Index* or *Governance Index* to support the Malang City Government which is carried out with Perumda AM Tugu Tirta in achieving the target of 100% decent drinking water and safe drinking water. These activities are very important to help optimize collaboration at the local level in dealing with problems that can affect the community's ability to obtain access to safe drinking water, which can be achieved through sustainable cooperation.

## CONCLUSION

In accordance with the concept of environmental security where the state seeks to secure its resources and improve the climate adaptation capacity of its people, the Malang city government has developed a paradiplomacy model in the issue of water security. This collaboration involves the central government, local government, local communities and foreign institutions such as USAID through the IUWASH Tangguh program. This collaboration is bound based on previously determined roles and tasks.

In implementing this collaboration, the Malang City government applies various requirements in establishing cooperation. The assistance provided by USAID IUWASH is not in the form of physical assistance activities, but in the form of improving the quality of Human Resources from actors involved in clean water security. This assistance is in the form of improving the quality in terms of knowledge, mindset, skills, motivation, to support the achievement of safe drinking water targets. Assistance is carried out through dialogue and policy advocacy activities to prioritize issues in the WASH and WRM sectors,

knowledge management for the community and those responsible/providers of drinking water services with the aim of creating social behavior change in a more positive direction towards the environment. While to increase drinking water capacity, technical assistance is provided in the form of implementing three indexes to help drinking water service providers have a reference in conducting evaluations. This paradigm strategy has helped increase access to safe drinking water in Malang City. This collaboration is in line with the Indonesian Government's plan to accelerate the achievement of the target of 100% Access to Safe Drinking Water by 2026.

## REFERENCES

- Adetya, V., & Rasyidah, S. R. (2022). Peran USAID Melalui Program IUWASH-PLUS dalam Penyediaan Sanitasi dan Air Bersih di Kota Bogor Tahun 2020-2021. *Al-Qodiri: Jurnal Pendidikan Sosial Dan Keagamaan*, 20(2). <https://doi.org/https://doi.org/10.53515/qodiri.2022.20.1.1-11>
- APEKSI. (2023). *100% Akses Air Minum Aman di 6 Kota – #APEKSInergi*. <https://apeksi.id/air/>
- Balqis, A. S., Siswoyo, H., & Yuliani, E. (2023). Penilaian Kualitas Air Tanah dan Pengaruhnya terhadap Kesehatan Masyarakat di Kecamatan Sukun Kota Malang. *Jurnal Sains Dan Edukasi Sains*, 6(2), 65–74. <https://doi.org/https://doi.org/10.24246/juses.v6i2p65-74>
- Bappeda Kota Malang. (2023). *SICALMERS dan NAWASIS: Pelaksanaan Monitoring dan Evaluasi Penyusunan Dokumen Perencanaan Pembangunan Perangkat Daerah Bidang Infrastruktur*.
- Barenlitbang Kota Malang. (2019). *RPJMD Kota Malang 2018-2023*. <https://barenlitbang.malangkota.go.id/wp-content/uploads/2019/07/Perda-Nomor-1-Tahun-2019-Tentang-RPJMD-Kota-Malang-2018-2023-2.pdf>
- Dabelko, G. (2022). *Environmental Security* (Allan Collins, Ed.; Sixth Edition, pp. 250–252). Oxford University Press. [https://books.google.co.id/books?hl=id&lr=&id=yyRXEAAAQBAJ&oi=fnd&pg=PP1&dq=environmental+security&ots=FD5frteuU1&sig=YALLn16z4SkcEoX7\\_Fc4MdWd5JM&redir\\_esc=y#v=onepage&q&f=false](https://books.google.co.id/books?hl=id&lr=&id=yyRXEAAAQBAJ&oi=fnd&pg=PP1&dq=environmental+security&ots=FD5frteuU1&sig=YALLn16z4SkcEoX7_Fc4MdWd5JM&redir_esc=y#v=onepage&q&f=false)
- DAI Global LLC. (2023). *Project Year 3 Workplan*. <https://iuwashtangguh.or.id/wp-content/uploads/2023/12/IUWASH-Tangguh-PY3-AWP.pdf>
- Dary, N. H., Nurhaeni, I. D. A., & Suharto, D. G. (2019). Public-Private Partnership in Indonesian Urban Water Sanitation and Hygiene Program: Human Resource Capacity's Innovation. *IAPA Proceedings Conference*, 448–471. <https://doi.org/https://doi.org/10.30589/proceedings.2019.247>
- Edgar, R. (2021). 3 Saluran Pipa PDAM Kota Malang Alami Kerusakan Imbas Banjir Bandang di Kota Batu. *Tribun Jawa Timur*.
- Farid R, A. M., & Zahidi, M. S. (2023). Implementasi Bantuan Pembangunan Program Air dan Sanitasi USAID IUWASH PLUS di Indonesia Tahun 2021. *Ganaya: Jurnal Ilmu Sosial Dan Humaniora*, 6(1), 204–217. <https://doi.org/https://doi.org/10.37329/ganaya.v6i1.2220>
- Farida Rahmawati, Diana Fitriani, Chatryne Marthadivea V G, & Christabel Owena Yanuar. (2023). Implementasi Program Hibah Air Minum 2024 Di Perumda Tugu Tirta Kota Malang. *Journal Publicuho*, 6(2), 525–533. <https://doi.org/10.35817/publicuho.v6i2.150>
- Hough, P. (2019). Back to the future: environmental security in nineteenth century global politics. *Global Security - Health, Science and Policy*, 4(1), 1–13. <https://doi.org/10.1080/23779497.2019.1663128>
- International Water Association. (2024). *Water Safety Plans: a robust framework for water utilities to adapt to climate change*. Climate Resilient Water Safety Planning to Improve Water Supply and Public Health. <https://iwa-network.org/projects/climate-resilient-water-safety-planning-to-improve-water-supply-and-public-health/>
- IUWASH Tangguh. (n.d.). *Peningkatan Pengelolaan Sumber Daya Air untuk Mendukung Layanan Air Minum yang Tangguh*. Retrieved January 12, 2024, from <https://iuwashtangguh.or.id/kegiatan-kami/peningkatan-pengelolaan-sumber-daya-air-untuk-mendukung-layanan-air-minum-yang-tangguh/>
- Kementerian Kesehatan RI. (2010). Peraturan Menteri Kesehatan Republik Indonesia No.492/MENKES/PER/iv/2010. In *PAMSIMAS*. <https://pamsimas.pu.go.id/peraturan-menteri-kesehatan-republik-indonesia-no-492/#:~:text=IV%2F2010%20%E2%80%9320Pamsimas.>
- Kornita, S. E. (2020). Strategi Pemenuhan Kebutuhan Masyarakat terhadap Air Bersih di Kabupaten Bengkalis. *Jurnal Samudra Ekonomi Dan Bisnis*, 11(2), 166–167. <https://doi.org/https://doi.org/10.33059/jseb.v11i2.1883>

- MacQuarrie, P., & Wolf, A. T. (2013). Understanding Water Security. In R. Floyd & R. Matthew (Eds.), *Environmental Security: Approaches and Issues*. Routledge.  
[https://books.google.co.id/books?hl=id&lr=&id=IxAhBQAAQBAJ&oi=fnd&pg=PP1&dq=water+scar+city+environmental+security&ots=1krZ8OD4nb&sig=kQJBbGBb1nh1DY2IySJAYNcnarg&redir\\_esc=#v=onepage&q&f=false](https://books.google.co.id/books?hl=id&lr=&id=IxAhBQAAQBAJ&oi=fnd&pg=PP1&dq=water+scar+city+environmental+security&ots=1krZ8OD4nb&sig=kQJBbGBb1nh1DY2IySJAYNcnarg&redir_esc=#v=onepage&q&f=false)
- Mohd Azmi, N. (2022). Redefinition of Security Concept: The Value of Securitisation Theory: Pendefinisian Semula Konsep Sekuriti: Nilai Teori Sekuritisasi. *Perspektif Jurnal Sains Sosial Dan Kemanusiaan*, 2(2), 59–69.  
<https://doi.org/10.37134/perspektif.vol14.2.5.2022>
- More, A. A., & Kurniawati, D. E. (2022). Analisis Paradiplomasi dalam Kerja Sama Pemerintah Daerah Tulungagung dan United Nations Children’s Fund (UNICEF) dalam Menangani Permasalahan Sosial Anak. *Sang Pencerah: Jurnal Ilmiah Universitas Muhammadiyah Buton*, 8(2), 407–420. <https://jurnal-umbuton.ac.id/index.php/Pencerah/article/view/2213/1223>
- Mukti, T. A. (2013). *Paradiplomacy: Kerja Sama Luar Negeri oleh Pemda di Indonesia*. The Phinisi Press.
- Mukti, T. A. (2020). *Politik Paradiplomasi dan Isu Kedaulatan di Indonesia*. The Phinisi Press.
- Nirwana, E. E., Hijri, Y. S., & Kamil, M. (2019). *Government Cooperation in Malang City And Malang Regency Government In Management Water Resources Wendit* (Vol. 2, Issue 1).
- Niyitunga, E. B. (2019). A Conceptual Analysis for Understanding Water Scarcity and its Threats to International Peace and Security. *School of Public Governance, Management and Public Policy*, 11(3). <https://journals.co.za/doi/abs/10.10520/EJC-19606370bb>
- Pemkot Malang. (2023). *Wali Kota Malang Sampaikan Strategi Wujudkan Air Minum Aman dalam Rakornas*.  
<https://malangkota.go.id/2023/09/12/wali-kota-malang-sampaikan-strategi-wujudkan-air-minum-aman-dalam-rakornas/>
- Perdana, N., & Hartik, A. (2022). Dampak Banjir di Malang, Warga Kesulitan Air Bersih. *Kompas Surabaya*.  
<https://surabaya.kompas.com/read/2022/03/15/205138478/dampak-banjir-di-malang-warga-kesulitan-air-bersih>
- Pokja PPAS. (2022). *Terpilih Sebagai Lokasi Sasaran Program USAID IUWASH Tangguh, Provinsi Banten Siap Percepat Capaian Target Air Minum dan Sanitasi Aman*.  
<https://www.nawasis.org/portal/berita/read/terpilih-sebagai-lokasi-sasaran-program-usaid-iuwash-tangguh-provinsi-banten-siap-percepat-capaian-target-air-minum-dan-sanitasi-aman-52553>
- Prawira, A. Y. (2018). *Perlindungan Hukum Bagi Konsumen Terhadap Pendistribusian Air Yang Tidak Lancar (Air Tidak Mengalir) Oleh Badan Usaha Milik Daerah (Studi Di Pdam Kota Malang)* [Universitas Brawijaya].  
<http://repository.ub.ac.id/id/eprint/11447/>
- Sakinah, M. D., & Pahlawan, I. (2023). Cooperation Between the Republic of Indonesia and the United States Agency for International Development (USAID) in Addressing Sanitation and Drinking Water Problems in North Sumatera. *Jurnal Online Mahasiswa Fakultas Ilmu Sosial Dan Ilmu Politik*, 10(11), 1–13.  
<https://jom.unri.ac.id/index.php/JOMFSIP/article/view/34942>
- Sandy, O. F. (2020). Analisis Peran Aktor dalam Implementasi Kebijakan Pembangunan Sanitasi di Kabupaten Probolinggo. *Jurnal Ilmiah Administrasi Publik*, 6(3), 415–422.  
<https://doi.org/10.21776/UB.JIAP.2020.006.03.10>
- Sayyidati, A. (2017). Isu Pemanasan Global dalam Pergeseran Paradigma Keamanan pada Studi Hubungan Internasional. *Jurnal Hubungan Internasional*, 6(1).  
<https://doi.org/10.18196/hi.61103>
- Setditjen P2P. (2023). *Laporan Tahunan: Pengamanan Kualitas Air Minum Tahun 2022*.  
<https://p2p.kemkes.go.id/laporan-tahunan-pengawasan-kualitas-air-minum/>
- Taufik, M., Khairina, E., Hidayat, R., Kalalinggi, R., & Fadhlurrohman, M. I. (2022). Study of Government’s Strategy on Clean Water Availability in Indonesia. *Jurnal Kesehatan Lingkungan Indonesia*, 21(1).  
<https://doi.org/10.14710/jkli.21.1.111>
- United Nations. (2024). *Social Inclusion*. United Nations Department of Economic and Social Affairs Poverty.  
<https://www.un.org/development/desa/socialperspectiveondevelopment/issues/social-integration.html>
- USAID. (n.d.). *USAID in Indonesia History*. Retrieved January 14, 2024, from <https://www.usaid.gov/indonesia/history>
- USAID IUWASH PLUS. (2021). *Dokumen Pembelajaran Program Unggulan USAID IUWASH PLUS*.  
<https://www.iuwashtangguh.or.id/wp-content/uploads/2022/01/FINAL-T1-P3.pdf>
- USAID IUWASH Tangguh. (2022). *RKT Kota Malang PY2*.
- USAID IUWASH Tangguh. (2023). *RKT Kota Malang PY3*.