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**A TALE OF TWO DAMS: TRANSPARENCY
AND GOVERNANCE ANALYSIS**
OF THE KALIWA DAM PROJECT
AND UPPER WAWA DAM PROJECT

PROF. VICTOR ANDRES "DINDO" C. MANHIT
PROF. RIZAL G. BUENDIA, PH.D

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STRATBASE ADRI FOR STRATEGIC AND INTERNATIONAL STUDIES
Manila, Philippines

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Design by Carol Manhit
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ABOUT THE ORGANIZATION

Victor Andres “Dindo” C. Manhit is the President of Stratbase Albert Del Rosario Institute for Strategic and International Studies. Concurrently, he is Philippine Country Head of the renowned BowerGroupAsia (BGA). He was a former Chair and recently retired Associate Professor of the Political Science Department of De La Salle University. Among the government positions he held include Undersecretary for External Affairs and Special Concerns of the Department of Education, Culture and Sports and Deputy Secretary for Administration and Financial Services of the Philippine Senate. Meanwhile, his legislative experience encompasses the 8th, 9th, 10th, and 12th Congress as the Chief of Staff of the late Former Senate President Edgardo Angara and senior policy research adviser in key senate committees.

BOARD OF TRUSTEES

Ambassador Albert del Rosario† was the Secretary of Foreign Affairs of the Philippines from 2011 to 2016. He also served as Philippine Ambassador to the United States of America from 2001 to 2006. Prior to entering public service, Amb. Del Rosario was on the Board of Directors of over 50 firms. He received numerous awards and recognition for his valuable contributions to the Philippines and abroad.

Manuel V. Pangilinan is CEO and managing director of First Pacific Company Limited. He is also the chairman of Metro Pacific Investments Corp., Philippine Long Distance Telephone Company, Manila Electric Co. (Meralco), and Smart Communications, among others. He is a recipient of several prestigious awards including the Ten Outstanding Young Men of the Philippines (TOYM) Award for International Finance in 1983 and the Presidential Pamana ng Pilipino Award by the Office of the President of the Philippines in 1996.

Edgardo G. Lacson is an honorary chairman of the Philippine Chamber of Commerce and Industry (PCCI). He is the Chairman of the Employers Confederation of the Philippines. He holds numerous leadership positions in various companies. He served as a Director of The Philippine Stock Exchange, Inc. and is an Honorary Member of the Rotary Club-Diliman.

Benjamin Philip G. Romualdez is the former president of the Chamber of Mines of the Philippines. He also holds, among others, the following positions: Chairman of MST Management, Inc., President of Oxford University and Cambridge University Club of the Philippines, Director at Philippine-Australia Business Council (PABC), Trustee/Vice President of Doña Remedios Trinidad Romualdez Medical Foundation, Inc, and Trustee/Vice President of Dr. Vicente Orestes Romualdez (DVOR) Educational Foundation, Inc.

Ernest Z. Bower is a senior adviser for Southeast Asia at the Center for Strategic and International Studies (CSIS), having founded the first chair for the region. He is CEO of BowerGroupAsia (BGA) and a leading expert on Southeast Asia.

Renato C. de Castro, Ph. D is a full professor of international studies at De La Salle University – Manila (DLSU). In 2009, Dr. de Castro became the U.S. State Department ASEAN Research Fellow from the Philippines and was based in the Political Science Department of Arizona State University. A consultant in the National Security Council of the Philippines during the Aquino administration, he has written over 80 articles on international relations and security.

Judge Raul C. Pangalangan, Ph. D is a judge of the International Criminal Court. He was previously the dean of the University of the Philippines College of Law and publisher of the Philippine Daily Inquirer. He has taught in many universities around the world, such as Melbourne University, Hong Kong University, and Harvard Law School.

Epictetus E. Patalinghug, Ph. D is a professor emeritus at the Cesar E.A. Virata School of Business, University of the Philippines (UP), Diliman. He received his doctorate degree in Agricultural Economics from the University of Hawaii. His works have been featured in various publications around the world.

Francisco A. Magno, Ph. D is the executive director of the Jesse M. Robredo Institute of Governance and former President of the Philippine Political Science Association. He is a professor of political science at DLSU and previously served as Chair of the Political Science Department and Director of the Social Development Research Center.

Carlos Primo C. David, Ph. D. is a licensed geologist and professor in UP Diliman having obtained his PhD in Environmental Science and Geology from Stanford University. He is a former the Executive Director of DOST-PCIEERD. A project leader of the DOST's Project NOAH, Dr. David pioneers short term rainfall forecasting in the country and climate change-related research on water resources. (On government leave)

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ABSTRACT

The study is a comparative examination of the two flagship infrastructure projects of the country -the New Centennial Water Source- Kaliwa Dam Project and Wawa Bulk Water Supply Project- Upper Wawa Dam, otherwise known as the Kaliwa Dam Project and Upper Wawa Dam respectively - in terms of the extent and depth of their transparency and governance. In assessing these projects, the sources of project funds, namely the Official Development Assistance and Public-Private Partnership were analyzed in the areas of project costs, terms and conditions, alongside economic, political, and social benefits and risks. The research also looks at the existing regulatory frameworks and investigates their implications on transparency and good governance. The Construction Sector Transparency Initiative Infrastructure Data Standard is a methodology used in this paper to assess transparency and accountability. This assessment serves as the framework that determines the openness or restrictiveness of government or project owners in disclosing information and facts on data points or “items” of concern across six key stages of the infrastructure project cycle, namely: identification, preparation, completion, contract phase, procurement, and implementation. The paper makes use of proactive disclosure, or publicly available documents for this valuation. Based on the findings, the following general recommendations are given: sectors involved must broaden transparency and accountability measures, deepen consultation with the indigenous communities, sustain continuing community engagement and fair resettlement programs, strengthen anti-corruption measures in regulatory frameworks, fortify the role of government in business-to-business transactions, and explore other potential partners for the NCWS-KDP. These policy suggestions aim to guide policy makers and provide actionable information for other interested parties or stakeholders. While the study does not directly deal with corruption, the study shows that more transparent projects are better able to deliver services and balance water supply requirements with environmental and social considerations.

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Dams and reservoirs provide water supply and low-carbon energy that are becoming increasingly critical in a time where water scarcity and alternative sources of energy are prevailing global issues. While they are constructed as a source of water and energy, they can cause enormous environmental impact, contributing to an increase in greenhouse gases emissions (Lu et. al 2020), especially during construction (Liu et.al. 2013). They upset the movement of sediments and nutrients (Maavara et.al. 2020). Nonetheless, dams and water infrastructures are essential to achieve Sustainable Development Goals (SDG) because they guarantee water security today (Grigg 2019). Goal 6 of the 2015 United Nations General Assembly (UNGA) SDGs is to “ensure availability and sustainable management of water and sanitation for all” by 2030 (UNGA 2015).

Accordingly, dams built across rivers have divergent outcomes. On the one hand, they are vital and crucial to human development. They serve as storage and function as safe retention of water in large quantities for irrigation. They generate hydropower, supply water for domestic and industrial use, prevent and/or control flood, reduce erosion, stabilize groundwater levels, and promote recreation (boating, camping, picnic areas, among others). On the other hand, some land and reservoir water management of dams have several unfavorable effects on people, the wildlife and environment. The World Commission on Dams (WCD) Executive Summary’s final report in 2001¹ for instance states that in “too many cases an unacceptable and often unnecessary price has been paid to secure those

benefits, especially in social and environmental terms, by people displaced, by communities downstream, by taxpayers and by the natural environment” (WCD 2001, pp. 6-7). Indeed, dams have contrasting effects and consequences to people, society, and the environment.

In the Philippines, population growth, urbanization, pollution, and climate change have collectively precipitated peoples’ problems in access to clean and safe drinking water, availability of government’s water resources, and society’s steady supply of unpolluted water for industrial and agricultural purposes. The demand for potable sources of water over and above for flood control, storage, and hydroelectric power generation has grown over time especially in Metro Manila, the home of nearly 15 million people and one of the most densely populated metropolitan cities in the world.

The water crisis in the early 1990s became the justification for the privatization of the water sector. The government of the Philippines issued the National Water Crisis Act in 1995 (Republic Act [R.A.] No. 8041) that laid down the legal foundation for the privatization of Metropolitan Waterworks and Sewerage System (MWSS), a government-owned agency engaged in water supply, treatment, and distribution serving Metro Manila and in charge of water privatization pursuant to its Water Security Plan (WSP) for 2018-2023 (Cal 2019). RA 8041 gave then-President Fidel Ramos emergency powers for a period of one year to manage the projected 75% increase in national demand for water. Addressing this issue requires the construction of several water infrastructure projects such as new dams and reservoirs to provide additional sources of water, the modernization of the country’s water distribution system, and the improvement of water quality (NEDA 2021).

Against this backdrop, the study examines two of the Philippines’ flagship dam projects, the New Centennial Water Source-Kaliwa Dam Project (NCWS-KDP) and Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD), otherwise known as the Kaliwa Dam Project (KDP) and Upper Wawa Dam (UWD), by comparing the extent and depth of their transparency and governance.

Overall, the study has the following long-term objectives:²

1. Shape and contribute to the existing literature and ongoing discussions on the country’s infrastructure development under the new administration;

2. Illustrate the risks and opportunities of Official Development Assistance (ODA)-funded projects vis-à-vis Public-Private Partnership (PPP)-funded projects as operationalized in the cases;
3. Promote transparency and accountability of the public and private sectors, to raise awareness in civil society, and to strengthen anti-corruption efforts in the Philippines particularly in the infrastructure space;
4. Encourage policymakers and other important stakeholders in reassessing existing policies and instituting initiatives to further the growth and development of the Philippines' infrastructure sector; and
5. Strengthen and promote the active participation of think tanks and the private sector in the democratic process by contributing to policy analysis and discussions.

In line with these objectives, the paper specifically intends to gauge the system of governance, financing scheme, and existing regulatory frameworks that provide incentives to needed investments to two leading infrastructure projects – NCWS-KDP and WBWSP-UWD, both meant to address the water crisis in Metro Manila and nearby provinces. In addition, the research evaluates the projects' adherence to two (2) principles of good governance – transparency and accountability – through the conduct of the Construction Sector Transparency Initiative (CoST) assessment analysis to determine whether transparency, accountability, and information accessibility are practiced throughout the different phases of the projects.

Moreover, as the study carries out CoST analysis and assays case studies and regulatory frameworks, the impact of PPP and ODA-funded projects are contextualized in terms of identifying the critical factors affecting the implementation of large-scale development projects. It also highlights the advantages and disadvantages of using PPP and ODA as funding sources in areas of project costs, length, and economic benefits. Lastly, the study lays out its socio-economic and political implications on Philippine society.

It is expected that the study will lead to the sharing and exchange of ideas and information that will provide relevant stakeholders, with new insights on the question of evaluating large-scale infrastructure projects and their effects on society, people, and the environment.

Description of the Projects: Structure and Actors Involved

The two projects have numerous similarities and differences. Among the key parallels of the NCWS-KDP and WBWSP-UWD are the following:

First, they are flagship infrastructure programs of the Philippine government (WawaJVCo 2020) geared to ensure the country's water security by increasing raw water supply and meet present and future potable water demand of Metro Manila and nearby provinces of Cavite, Rizal, and Quezon. This is significant especially when El Nino, a warming of sea surface temperature that normally occurs approximately every five years occurs. These infrastructure programs also attempt to address the shortage and depletion of water supply at Angat-Ipo-La Mesa water system, as well as mitigate the recurring flooding issue in the lower communities specifically in the province of Rizal and cities of Marikina and Pasig (MWSS u.d.; WAWAJVCo - Prime Infra). Correspondingly, the projects are expected to relieve the burden on the 60-year-old Angat dam whose storage capacity is at 850 million cubic meters, currently the source of 98% of the raw water delivered to Metro Manila and nearby provinces of Cavite and Rizal on top of furnishing the irrigation needs of 25,000 hectares of farmlands in Bulacan and Pampanga.

Second, the projects are being implemented/regulated by the MWSS. Emanating from the National Water Crisis Act of 1995 (RA 8041), the privatization of water services in 1997 enjoined the participation of the private sector in the bidding process for concession contracts of water services and deliveries. The open competition led MWSS to award Maynilad Water Services, Inc., better known as Maynilad, and Manila Water Company, Inc. (MWCI) to have the sole right to make available potable water and used water (wastewater) services to Western and Eastern halves of Metro Manila, respectively, for a concession period of 25 years (see Figure 1). They are expected to spend up to USD7 billion during the contract period to improve and expand the system (IFC Completion of Manila Water Privatization).

Third, projects are similarly situated along the province of Rizal, among other provincial boundaries. They transgress into the ancestral domain of the indigenous peoples (IPs) of Dumagats/Remontados who have built strong ties to their lands as a result of living in the forest for generations. This has been recognized by the National Commission on Indigenous Peoples (NCIP) and any

Figure 1 . Metro Manila Water Supply System Concession Service Area



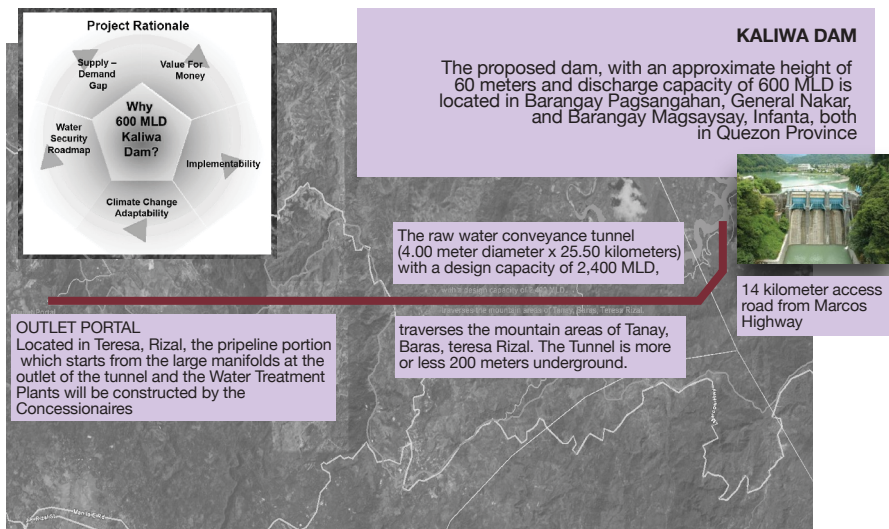
Source: *Maynilad on the Mend*, Asian Development Bank

dislocation, relocation, and destruction of ancestral domains will require the IPs' free, prior, and informed consent (FPIC) as provided by RA 8371 or the 1997 Indigenous Peoples Rights Act (IPRA).

And finally, fourth, on environmental and IP concerns, both projects have received full Environmental Compliance Certificate (ECC) from DENR's Environmental Management Bureau (EMB) required under Presidential Decree 1586. The ECC declares that a particular project will not have any adverse impact on the environment and the community's health, welfare, and socio-economic condition.

The NCWS-KDP through its project owner, MWSS, received its ECC from DENR-EMB on 11 October 2019. In the case of WBWSP-UWD, the ECC was issued after WawaJV Co. Inc. forged a Memorandum of Agreement (MOA) in July 2020 with the Dumagat and Remontado IPs of Antipolo that signified the latter's approval on the construction of its Tayabasan Multi-Basin System. It was

Figure 2 . Location Map of Kaliwa Dam Project



Water Security
97% of water supply for Metro Manila is provided solely by Angat Dam. Metro Manila is seen to experience water supply shortfall by 2020. Kaliwa Dam will serve as a redundant water source to reduce dependence on Angat Dam.

The Kaliwa Dam involves a design reservoir capacity of 57 million cubic meters (mcm) with an annunciation area of 291 hectares inside the REINA Natural Park, Wildlife Sanctuary and Game Preserve (NPWSG) under Presidential Proclamation No. 1636. The estimated watershed area is about 9,800 hectares.

Source: Metropolitan Water and Sewerage System (<https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/>)

on the same date that FPIC was handed out by the NCIP to WawaJV Co. Inc. for the first phase of the project.

For the second phase, the final MOA in the FPIC process was granted on the 17th and 23rd of March 2022 in Antipolo City and Municipality of Rodriguez (formerly known as Montalban), Rizal province respectively. The event was supervised by the FPIC Team and attended by representatives of the NCIP offices. “The MOA signing is a milestone of the FPIC Process that we are undertaking. It shows the full support from the community for the Upper Wawa Dam,” said Melvin John Tan, WawaJVCo’s President.³ In the case of the NCWS-KDP, its Certificate Precondition FPIC from the NCIP was granted on the 7th of November 2022.

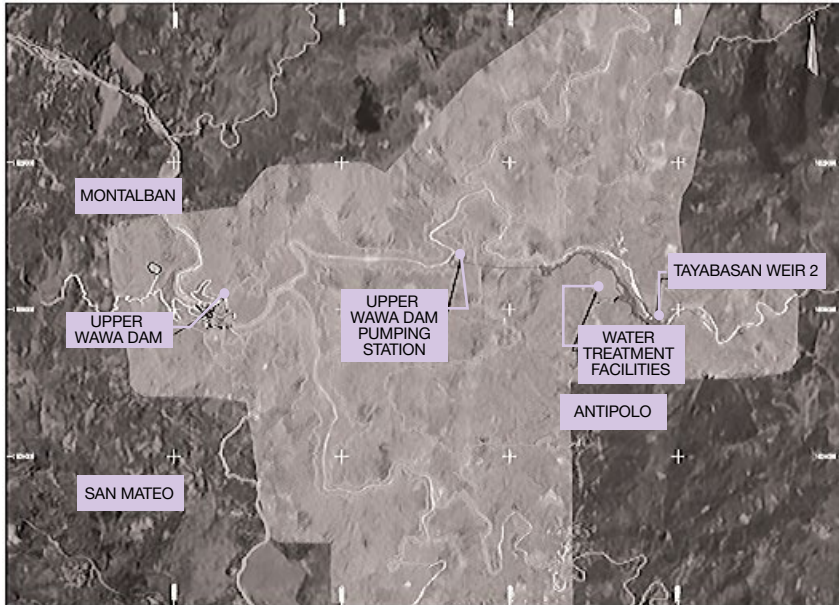
On the other hand, the projects are in contrast in the following areas:

1. *Location* - The NCWS-KDP covers a surface area of 291 hectares of two provinces, namely Quezon and Rizal. Specifically, it encompasses the Barangay of Pagsangahan of the municipality of General Nakar and Barangay Magsaysay of

Figure 3 . Location Map of Upper Wawa Dam Project

THE PROJECT MAP

The Upper Wawa Dam is located about 4 kilometers upstream of the existing Wawa Dam in Montalban Rizal; while the Tayabasan Weir is about 7 kilometers further upstream in Antipolo City, Rizal.



Source: The Wawa Bulk Water Supply Project presentation provided by WawaJVCo

the municipality of Infanta, both in Quezon. In the province of Rizal, particularly in the municipality of Teresa, a 27.7 kilometer raw water conveyance tunnel will be built traversing from the dam's location to the water treatment facilities (see Fig. 2).

It is located within the Kaliwa River Watershed (KRW) in Sierra Madre Mountain range and forms part of the Sierra Madre Biodiversity Corridor (SMBC) with 14 priority biodiversity conservation sites (Villegas and Pollisco Jr 2008). Likewise, the area is considered as an Environmentally Critical Area (ECA) which is partly covered by Proclamation No. 573 (1969) and encompasses the Kaliwa Watershed Forest Reserve (KWFR) that is in the interior of the National Integrated Protected Area System (NIPAS), proclaimed as National Park and Wildlife Sanctuary and Game Refuge Reservation by virtue of Proclamation 1636 (1977). The project's location in protected and ecological important areas is the main environmental concern for its impact on biodiversity.

Conversely, WBWSP-UWD is in the province of Rizal, particularly in Barangay Pintong Bukawe, a municipality of San Mateo and Barangay San Rafael, a municipality of Rodriguez (formerly known as Montalban), and Barangay Calawis of Antipolo City (see Fig. 3). Moreover, the site is within the Upper Marikina River Basin Protected Landscape (UMRBPL), a protected landscape of 26,000 hectares under Presidential Proclamation 296, 24 Nov 2011 (Proclamation 296 s. 2011), and contained in six river systems: Wawa River, Montalban River, Boso-Boso River, Payagwan River, Tayabasan River, and Sapa Bute-Bute River (WawaJVCo. Inc 2020).

2. Type of Project - The NCWS-KDP was originally proposed as an integrated dam system along the Kaliwa River. This consists of the construction of an upstream Laiban Dam in Tanay, Rizal and downstream in Quezon province, called Kaliwa Dam (Tapnio K. 2019). The National Economic and Development Authority (NEDA), an independent cabinet-level agency of the Philippine government responsible for economic development and planning, eventually decided in 2013 to have the construction done in stages starting with the Kaliwa Dam and water supply tunnel.

The NCWS-KDP is a concrete-faced rock-fill dam (CFRD)⁴ designed to construct a sixty-two meter-high embankment over 113 hectares with an initial capacity of 600 million liters per day (MLD). Once constructed, the Laiban Dam (a component of NCWS-KDP) is projected to produce 1,800 MLD. Thus, the Dam System is expected to discharge 2,400 MLD with the corresponding 27.7 km water conveyance tunnel structured underground which will link up the water intake at Kaliwa Dam to the off-take point at the end, where the concessionaires will connect the pipeline and water treatment plants (WTPs) (DENR-EMB u.d.). The project was expected to be completed in 2023 but due to delays caused by communist insurgents and in securing permits from other government agencies, the timeline has been revised. The project is now targeted to be completed by June 2026 and operational in 2027, according to the MWSS.

In comparison, the WBWSP-UWD has a type of Earth Core Rockfill Dam (ECRD)⁵ or Roller Compacted Concrete (RCC), a gravity dam,⁶ designed to create a concrete reservoir with a surface area of approximately 414.28 hectares and a water storage of 120.1 million cubic meters (MCM) (WawaJVCo Inc 2020). Spearheaded by the WawaJV Co. Inc., a joint venture of Prime Metroline Infrastructure Holdings Corporation (Prime Infra) and the San Lorenzo Ruiz

Builders and Developers Group Inc. (SLRB) with the former owning 82% and the latter with 18% (Tan interview 9 Mar 2023), the project is engaged in two water supply infrastructures built in phases (WawaJVCo. Inc. 2020).

Phase 1 of the WBWSP, completed in July 2022 (ahead of its October 2022 schedule), involved the construction of a 25-meter-high roller compacted Tayabasan Weir 2 in Antipolo City. Composed of three (3) parts: the weir, pumping station; and the buried 650-metre-long conveyance pipeline, weir 2 is devised to deliver 80 million liters per day (MLD) of water to the Calawis Treatment Plant built by the MWCI, franchise holder with the exclusive right to provide water and wastewater (used water) services to the eastern side of Metro Manila and parts of Rizal. Phase 2 or the Upper Wawa Dam has an estimated catchment area of 242 km² and entails the construction of an 84-meter-high dam projected to deliver at least 518 MLD of water to over 500,000 households in the east zone concession area once completed foreseeably in 2025 (WawaJVCo. Inc. 2020). The volume of water is equivalent to 30% of the current supply for the eastern half of Metro Manila.

3. *Project cost and Financing* - The NCWS-KDP's total project cost is currently at PhP12.25 billion (approx. USD221.61 million in July 2023 currency exchange) after it was slashed from PHP18.72 billion (about USD338.66 million in July 2023 currency exchange) by NEDA in 2019, as recommended by MWSS. NEDA's Investment Coordination Committee (ICC)⁷ did not only revise the project's funding component; it also changed the mode of financing from PPP to ODA loan from the Peoples' Republic of China (PRC) (DOF 2019). The ICC's approval was subsequently confirmed by the NEDA Board, chaired by then-President Rodrigo Duterte.

Under the ODA, the NCWS-KDP will be funded from the loan provided by the Export-Import Bank of China (CEXIM) based on the Preferential Buyer's Credit Loan Agreement between MWSS and CEXIM (aka Exim) signed on China's President Xi Jinping's state visit to the Philippines on 20 November 2018 (DOF 2018). Article 2.2 of the commercial agreement stipulates a 2% annual interest rate while Article 2.5 obliges the borrower to pay a management fee at the rate of 0.3% and "in the aggregate amount of the Facility (loan) equal to USD633,600." (Art. 2.5). The loan's maturity is placed at 20 years, with a 7-year grace period but repayment will only be for 13 months, hence making way for a 7-year grace period. (Art 2.3) and a commitment fee at the rate of 0.3% per annum (Art. 2.6).

Further under the ODA scheme, the China Energy Engineering Corporation

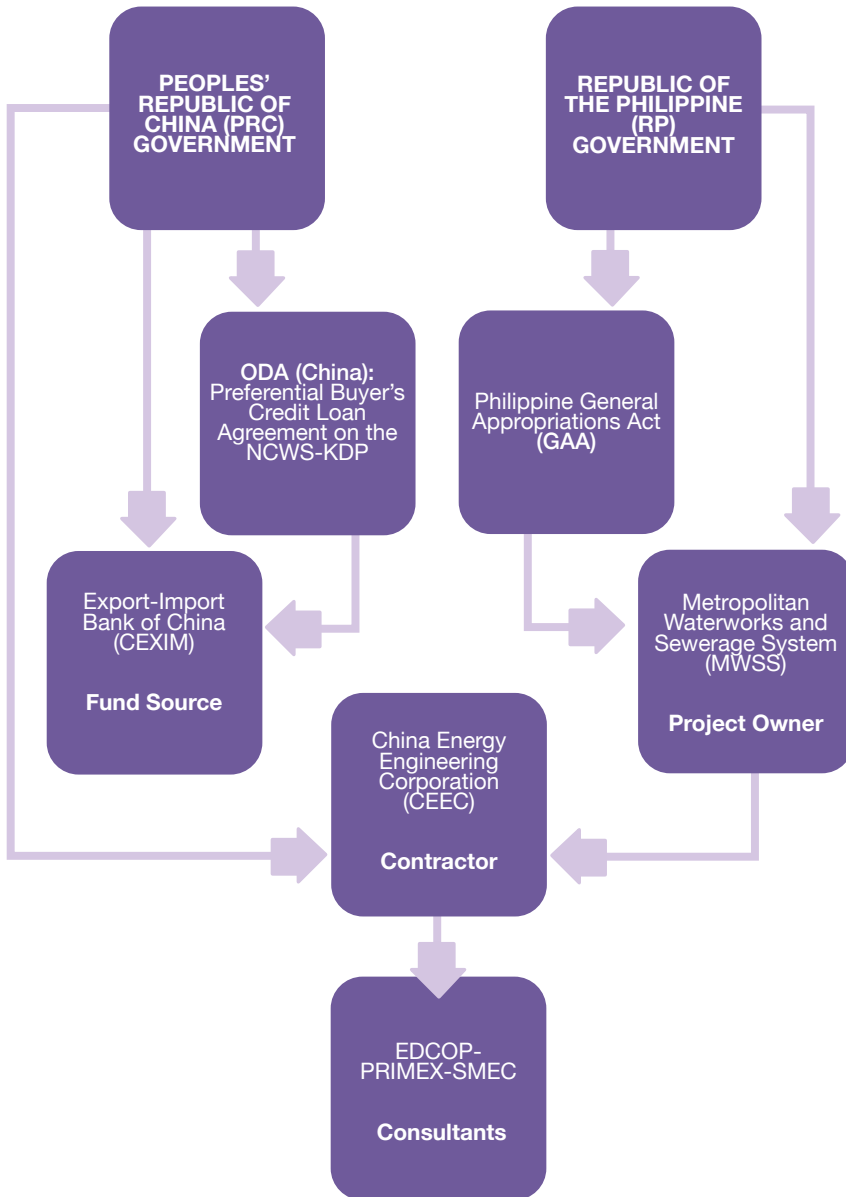
(CEEC) was awarded as the main contractor in the construction of the NCWS-KDP. Among the consultants for the CEEC are EDCOP (Engineering and Development Corporation of the Philippines), Primex Corporation (engage in real estate business), and SMEC (Snowy Mountains Engineering Corporation, an Australian-based firm which provides consulting services on major infrastructure projects) (Stratbase 2021, pp 10-11) (See Figure 4 for project map).

Alternatively, WBWSP-UWD has a total funding of PHP26 billion (approximately USD470.8 million in July 2023 currency exchange), 80% of which (PHP20.8 billion or approximately USD377 million in July 2023 currency exchange) comes from Banco De Oro (BDO) loan while the remaining 20% (PHP5.2 billion or approximately USD94 million in July 2023 currency exchange) has been provided by Mr. Enrique Razon (Tan interview 9 Mar 2023). Unlike the NCWS-KDP whose mode of financing is through ODA loan, WBWSP-UWD utilizes “offtake (OT) agreement”⁸ to obtain easy finance, in this case from BDO, which furnished 80% of the total project cost. Conceiving the agreement within the context of business-to-business transaction (B2B or B-to-B) transaction, Mr. Melvin Tan (President of WawaJVCo. Inc), said that the thirty year contract between Wawa JVCo. Inc. and MWCI (one of MWSS’s concessionaires) guarantee not only a long-term partnership between two private enterprises but also secures the repayment of debts from their creditors.

In accordance with the agreement, WawaJV Co. Inc shall be responsible for the construction, management, maintenance, and operation of the dam and the distribution of water to the MWCI on the one hand. On the other hand, it compensates the former from the proceeds collected by the latter from customers (estimated to be over 7.3 million) it served in its zone (eastern) of responsibility in Metro Manila. The government, through its regulating agency, the MWSS, draws and ties MWCI into a concession agreement (CA) until 2037 as well as exercises oversight and administrative function as stipulated in the CA. In this way, the OT Agreement assures the creditor that loans will be paid back as revenues from the project are warranted. It benefits the buyer (offtaker) and the seller alike in as much as the latter has an assured market while the former enjoys protection against future price increases and supply shortages. The partnership between the said business enterprises is welded by their common goals of growth, development, and revenue.

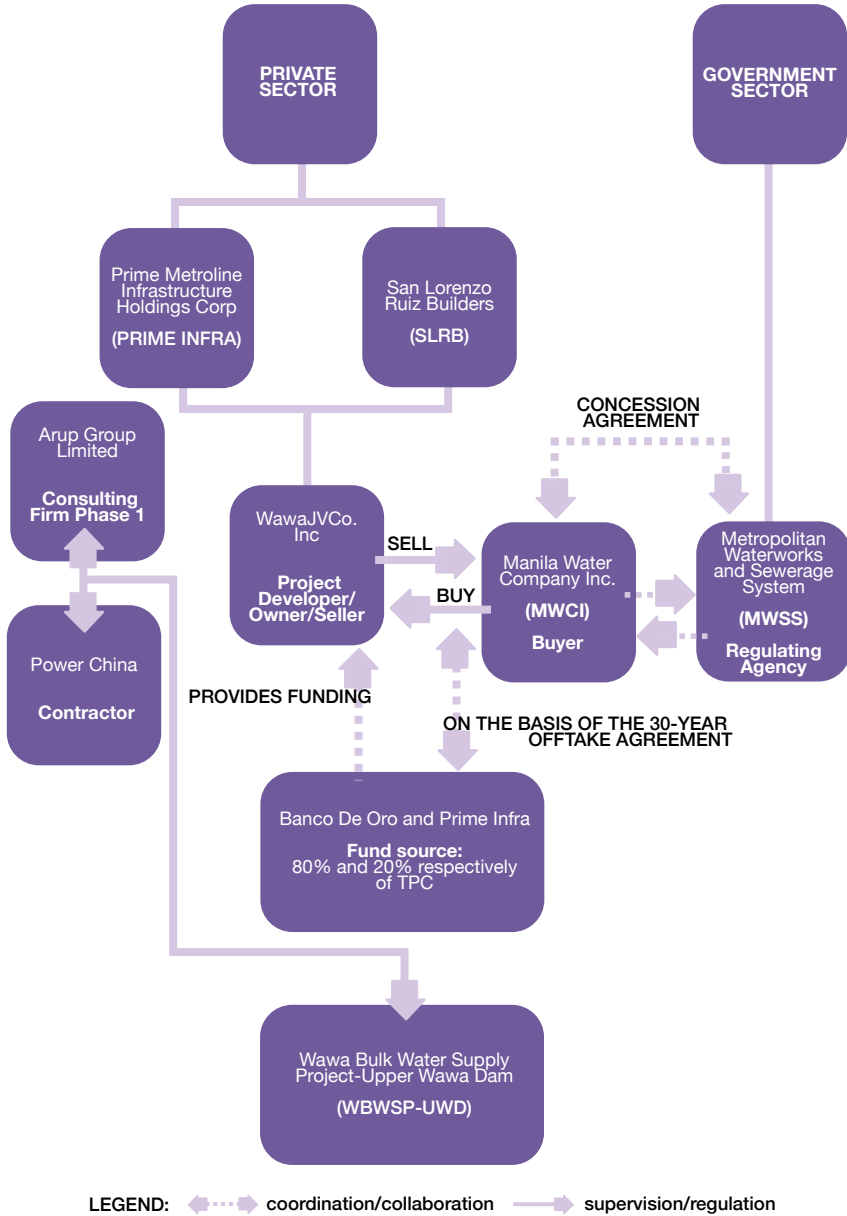
Moreover, the project has secured the consultancy services of Arup Group Limited, a British multinational professional services firm (see <https://www.arup>).

Figure 4. New Centennial Water Source-Kaliwa Dam Project (NCWS-KDP) Map



Source: Adapted from Stratbase ADR Institute for Strategic and International Studies, *The Intangible Costs of Building: The New Centennial Water Source-Kaliwa Dam Project* (2021), p. 10

Figure 5. Wawa Bulk Water Supply Project-Upper Wawa Dam Project Map



Source: Original by the author

com/our-firm) to provide the necessary technical support to the project on its first phase (GCR Staff 2020) while the Power Construction Corporation of China (Power China) has been the main contractor of the project (Tan interview 27 April 2023). Power China is a state-owned company of the Peoples' Republic of China (PRC) engaged in heavy and civil engineering construction industry (See Figure 5 for project map).

Table 1 below shows a general summary of key areas of comparison between the NCWS-KDP and WBWSP-UWD:

Table 1 . Project Comparison in Key Areas

Key Areas of the Project	New Centennial Water Source-Kaliwa Dam Project (NCWS-KDP)	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)
Project Owner	Metropolitan Waterworks and Sewerage System (MWSS)	WawaJVCo. Inc. – a joint venture corporation of: <ul style="list-style-type: none"> • Prime Metroline Infrastructure Holdings Corporation (Prime Infra) and; • San Lorenzo Ruiz Builders and Developers Group Inc. (SLRB)
Implementing/Regulating agency	MWSS	MWSS
Nature of project contract provided	Official Development Assistance (ODA) from China	Public-Private Partnership (PPP) through Offtake Agreement (OTA)
Main contractor	China Energy Engineering Corp (CEEC)	Power Construction Corporation of China (Power China)
Source of funds	Export-Import Bank of China (CEXIM)	Banco De Oro and Prime Infra
Project Cost	PHP12.25 billion (approx. USD221.61 million in July 2023 currency exchange)	PHP26 billion (approx. USD470.8 million in July 2023 currency exchange)
Project completion date	2026 2027 (operational)	Oct 2022: Phase 1 (80 MLD Tayabasan weir) completed and operational. 2025: Phase 2 (518 MLD Upper Wawa Dam) to be completed
Consultants	EDCOP (Engineering and Development Corporation); Primex Corp.; and Snowy Mountains Engineering Corporation (SMEC)	Arup Group Ltd (Phase 1)
Environmental compliance certificate (ECC) issuance from DENR-EMB	October 2019	July 2020 – Phase 1 March 2022 – Phase 2
Free, Prior and Informed Consent issued by the NCIP	November 2022	July 2020 – Phase 1 March 2022 – Phase 2

Source: Authors' data management and collation

Transparency and Accountability: Key Conceptual Concerns and Assessment

Transparency and accountability (T&A) are part of a set of principles of good governance. The World Bank (WB) considers T&A as main dimensions of good governance (Kaufmann, Kraay, Mastruzzi, 2006). The United Nations Development Programme (UNDP) also counts T&A as ingredients, among others, in democratic governance (UNDP 2010), while the Asian Development Bank (ADB) regards them as pillars of sound development management (ADB 1995, 1999). In over two decades, Gaventa and McGee (2013) reflect that T&A arose as significant governance tools in resolving developmental failures and democratic deficits. These concepts are important backbones of democratic governance in modern societies. A high sense of T&A in government as well as in private corporations is presumed to greatly diminish corruption, inefficiency, and government wastage. It enhances governance efficiency.

T&A are critical to ensuring the efficient functioning of a modern economy and fostering social well-being. In addition, strengthening the government's T&A serves as a key strategy for improving the delivery of public services and making progress in achieving development goals (Joshi 2013). Transparency has a democratic function in view that a high degree of clarity and openness would increase the capacity of the majority of the population, the poor and/or marginalized people, to play a greater role, at least at the local level, in policy formulation, implementation, and evaluation. This affects their lives and future. It also enables development agencies, governments, and donors to identify gaps and overlaps in development work, achieve greater coherence, and avoid fragmentation and competition.

T&A need each other and can be mutually reinforcing. Together they enable citizens to have a say about issues that matter to them, influence decision-making, and hold those making decisions to account. Accountability therefore needs transparency, and transparency needs accountability, to drive effective behavior or performance. In recent years, T&A have become nearly universal features not only of governments and international development organizations but policy statements and programs of private corporations as well. T&A are fundamental elements of abolishing corruption in governments, development agencies, and the private sector.

In as much as corruption is bad governance, tackling it, among others, includes adequate and credible flow of information, strong civil society, effective and transparent financial management systems, and procurement regulations whose processes are fair and open. Thus, with transparency and accountability, problems and challenges are resolved faster and more efficiently. Against this setting, the paper assesses transparency of both the NCWS-KDP and WBWSP-UWD.

Assessment in Comparative Perspective

The Construction Sector Transparency Initiative Infrastructure Data Standard (CoST IDS) is employed in this paper in assessing transparency and accountability of the NCWS-KDP and WBWSP-UWD projects and subsequently analysed comparatively. The assessment serves as the framework that determines the openness or restrictiveness of government or project owners in disclosing information and facts on data points or “items” of concern across six key stages of the infrastructure project cycle, namely: identification, preparation, completion, contract phase, procurement, and implementation.

Notwithstanding the two types of disclosure in CoST IDS – proactive (disclosing of information “without official request”) with 39 standard information/data, and reactive (disclosing of information “upon request) with 27 (Yusuf, M., Hashim, A.W., Todd, L. 2021), the paper opted to make use of proactive disclosure for this valuation. Table 2 lists the data points and respective brief definitions that need to be proactively disclosed either by the government or project owners.

Comparing project data of the NCWS-KDP and WBWSP-UWD, the latter proved to be more transparent and accountable than the former by virtue of the difference in their CoST scores (see Annex 1 for the summary and Annexes 2 and 3 for the details of each project). Comparatively, WBWSP-UWD scored 178 in 39 CoST items, with six as the highest score per item and zero as the lowest (see legend in Annex 1), and an average score of almost five, while NCWS-KDP is gauged at 104 and close to three as the mean (see Table 3).

While neither of the two projects were considered transparent with zero score in terms of project items that mainly deal with information on changes and variation of contract price assessed at the “implementation phase,” WBWSP nonetheless was deemed transparent compared to NCWS-KDP in the area

Table 2 . Project Data for Proactive Disclosure

Project Phase	Project Information/Data	CoST IDS Definition
Project Identification	1. Project owner	Name of the sponsoring Government department
	2. Sector, subsector	Develop a list of sectors relevant to country e.g., housing, transport, energy, water etc.
	3. Project name	Specify the project name.
	4. Project Location	Briefly specify location of the project
	5. Purpose	Specify the socio-economic purpose of the project.
	6. Project description	Concise description and details of the project.
Project Preparation	7. Project Scope (main output)	Main outputs from the project that are being taken forward into construction (type, quantity, unit).
	8. Environmental impact	Briefly describe the environmental impacts and mitigation measures for this project e.g., impacts on flora, fauna & woodlands, areas of natural beauty, carbon emissions etc. and mitigation measures e.g., pollution control, low carbon solutions, sustainable timber etc.
	9. Land and settlement impact	State the amount of land and property that was acquired for the project, e.g., 25km ² land, and related impacts, e.g., archaeological issues (moved saxon burial site), local/indigenous settlements (relocated 5 indigenous villages of 500 villagers each), impacts on local businesses, e.g., (30 business properties purchased).
	10. Contact details	Postal and electronic address of the Project Owner.
	11. Funding sources	Name the funding organisation(s)/sources of funding
	12. Project Budget	Specify the projected costs/allocated budget for the project (currency and amount). The budget includes land / property acquisition, environmental mitigation measures, H&S provisions, client, consultant & contractor costs, VAT etc.
	13. Project budget approval date	Date project budget was authorised.
Project Completion	14. Project status (current)	The current stage of the project. Select from identification, preparation, construction, completion, completed or cancelled.
	15. Completion cost (projected)	State projected or actual completion cost (currency and amount).
	16. Completion date (projected)	State projected or actual completion date.
	17. Scope at completion	Indicate projected or actual scope of project. Aim is to show if the completed project scope differs from the original project scope. Specify main outputs (type, quantity, unit).
	18. Reasons for project changes	Summary of primary reasons for any changes in scope, time and cost.
	19. Reference to audit and evaluation reports	Reference to publicly available technical and financial audits.

Source: Authors' data management and collation

Table 2 . Project Data for Proactive Disclosure

Project Phase	Project Information/Data	CoST IDS Definition
Contract Phase	20. Contract information	
Procurement	21. Procuring entity	Enter name of the organisation carrying out the procurement.
	22. Procuring entity contact details	Postal and Electronic address.
	23. Procurement process	Develop a list such as International Competitive Bidding, National Competitive Bidding, Donor Procurement Rules, Framework, Direct Award.
	24. Contract type	Develop a list such as Design, Supervision, Design & Supervision, Design & Build, Construction.
	25. Contract status (current)	Select from pre-award, active or closed.
	26. Number of firms tendering	Number of firms who submit a tender.
	27. Cost estimate	Currency and amount of the original pre-tender estimate of the contract.
	28. Contract administration entity	Enter name of the organisation carrying out the contract administrative entity if different from the Procuring Entity.
	29. Contract title	The formal name of the contract.
	30. Contract firm(s)	Legal name of supplier.
	31. Contract price	Currency and price at contract award.
	32. Contract scope of work	Main outputs from the contract, e.g., detailed design, supervision, project management and or type, quantity, unit for construction.
	33. Contract start date and duration	Enter dates and Number of weeks from contract start date to (anticipated) completion date.
Implementation	34. Variation to contract price	Difference between the price at contract award and the current projected price.
	35. Escalation of contract price	Escalation to date of the price of materials, labour, equipment etc. due to fluctuations in inflation, currency etc.
	36. Variation to contract duration	Difference between original duration at contract award and the current projected duration in weeks.
	37. Variation to contract scope	Any changes between original scope at contract award and the current scope.
	38. Reasons for price changes	Summary of reasons for primary changes (e.g., variations) that then lead to changes in contract price, major price fluctuations and accumulative increase or decrease in price.
	39. Reasons for scope & duration changes	Summary of reasons for primary changes (e.g., variations) that then lead to changes in the scope and duration

Source: Authors' data management and collation

Table 3 . Project CoST Information by Phases and Scores

Project Phase	NCWS-KDP		WBWSP-UWD	
	Total	Average*	Total	Average*
Project Identification	26	4.33	36	6
Project Preparation	34	4.8	39	5.6
Project Completion	19	3.2	32	5.3
Contract Phase	0	0	6	6
Procurement	25	2.0	65	5
Implementation	0	0	0	0
Total/Average	104	2.67	178	4.56

* Based on the number of project information/data systems

Source: Authors' data management and collation

of “project completion” with a score of 32 and 19 respectively. Markedly, the former successfully completed the first phase of its project, construction of Tayabasan Weir 2, ahead by three months of its October 2022 schedule (see sub-heading “Type of project” above). In all project phases, procurement recorded the biggest difference between the scores of NCWS-KDP and WBWSP at 40. The latter which earned a score of 65 compared to the former’s 25 indicates the extensive gap between the two projects with reference to transparency and accountability.

Regulatory/Policy Frameworks and Project Interactions

This part of the paper examines the engagements of projects with set-forth policy and regulatory frameworks. Generally, frameworks in the form of laws, regulations, decrees, and policies can be mandatory and coercive or voluntary (i.e., integrity pacts, codes of conduct, and policy agreements) designed to mitigate corruption. Although regulatory frameworks are not enough to prevent and fight corruption on their own, they are a pre-requisite for any such effort. They are fashioned to ensure policy compliance, transparency, accountability, and fairness. Overall, regulatory frameworks aim to strike a balance between facilitating economic activities and safeguarding societal well-being. Project

owners and stakeholders are expected to follow regulatory guidelines and requirements, improve processes, strengthen security, and achieve other business objectives.

In light of the foregoing, the paper explores two relevant regulatory frameworks under which the NCWS-KDP and WBWSP-UWD projects have been subjected to namely, the Official Development Assistance (ODA) and the Public-Private Partnership (PPP) respectively. A review of the regulatory framework seeks to understand the regulatory environment in which these projects operate and how they interact with the said frameworks within the context of transparency and accountability of government authorities, project owners, and stakeholders disclosing relevant information to the public.

Official Development Assistance

Briefly, ODA is government aid that promotes and specifically targets the economic development and welfare of developing countries. It is a category used by the Development Assistance Committee (DAC), a concept adopted by the Organisation for Economic Co-operation and Development (OECD) (Home page - OECD) to measure foreign aid that shape policies which foster prosperity, equality, opportunity, socio-economic development, environmental justice, and people's well-being in developing countries.

In the Philippines, Sec 2 of Republic Act (RA) No. 8182 or the Official Development Assistance Act of 1996 (as amended by RA 8555) defines ODA as a: "loan or loan and grant" which meets all of the following criteria: (1) promotes "*sustainable social and economic development and welfare*"; (2) "contracted with governments of foreign countries with whom the Philippines has diplomatic, trade relations or bilateral agreements or which are members of the United Nations"; (3) "*There are no available comparable financial institutions*"; and (4) "must contain a *grant element of at least 25% in both principal and interest and expressed at their present values discounted at ten percent...*" (*italics supplied*).

RA 8555 of 1998, amending RA 8182, further states in Sec. 4 that the proceeds of ODA shall be used to achieve "equitable growth and development in all provinces through priority development projects for the improvement of economic and social service facilities." It added that "NEDA shall ensure that the

ODA obtained shall be for *previously identified national priority projects which are urgent or necessary*. ODA shall not be accepted or utilized solely because of its *availability, convenience, or accessibility*” (italics supplied).

In NEDA’s 2019 ODA Portfolio Review Report, total ODA net commitments amounted to USD21.6 billion or 28.2% higher than the USD16.9 billion commitments in 2018 (CPBRD, HoR 2021). This consists of 84 loans worth USD20 billion in loans (92% of the total portfolio) and 268 grants worth USD1.6 billion in grants (8% of the total portfolio) (See Table 4). Among highly developed Western countries and multilateral funding institutions which serve as the country’s sources of ODA funds, PRC is the only socialist country. While Table 4 shows that apart from the World Bank, ADB, and Japan which respectively contributed 40%, 26% and 20% to the country’s ODA financial needs, PRC only registered a 2.7% share in ODA development finance; Table 5 exhibits the proportion of ODA loans and grants to the country’s ODA total portfolio. It also displays that PRC provided the biggest share of 16.5% in grants and lowest in loan at 83.5% out of the total ODA financial support to the country in 2019 with the exception of the UN system at 42%.

Table 4 . Sources of ODA, 2019

Country/ Institution	Net Commitments in USD Millions			Share (Percent)
	Loan	Grant	Total	
Japan	8,462.1	51.9	8,514.0	39.4
ADB	5,603.8	99.8	5,703.5	26.4
World Bank	4,251.7	54.0	4,305.7	19.9
South Korea	581.8	48.8	630.6	2.9
China	493.1	97.3	590.4	2.7
USA	N.A.	577.7	577.7	2.7
UN System	146.9	202.4	349.3	1.6
Others	437	509.3	946.3	4.3
Total	19,976.4	1,641.2	21,617.50	100.0

Source: : NEDA-ODA Portfolio Review Report 2019 as cited in Official Development Assistance: 2019 Update, Facts and Figures, Congressional Policy and Budget Research Department, House of Representatives, Jan 2021 (No. 02)

*Table 5 . Proportion of ODA Loans/Grants to Total Portfolio, 2019
(Selected Country/Institution)*

Country/ Institution	Loan	Grant	Total	% Loan to Total	% Loan to Grant
Japan	8,462.10	51.9	8,514.00	99.39	0.61
ADB	5,603.80	99.8	5,703.50	98.25	1.75
World Bank	4,251.70	54	4,305.70	98.75	1.25
South Korea	581.8	48.8	630.6	92.26	7.74
China	493.1	97.3	590.4	83.52	16.48
USA	N.A.	577.7	577.7	0.00	N.A.
UN System	146.9	202.4	349.3	42.06	57.94

Source : NEDA-ODA Portfolio Review Report 2019 as cited in Official Development Assistance: 2019 Update, Facts and Figures, Congressional Policy and Budget Research Department, House of Representatives, Jan 2021 (No. 02)

Expressed in its white paper, China's International Development Cooperation in the New Era (Full text: China's International Development Cooperation in the New Era | english.scio.gov.cn), China's 2030 Agenda for Sustainable Development, notably poverty reduction, food security, healthcare, quality education, gender equality, infrastructure, sustainable and innovative-driven economic growth, and environmental protection provides information about China's approach to development co-operation and unique Chinese characteristics, which are different from the practices of DAC members. Despite these trajectories to development, PRC's foreign development assistance is neither regulated nor measured under the OECD's protocols for ODA. It is characterized more within the ambit of South-South cooperation and "not interfering in the internal affairs of the recipient countries" (CIDCA 2023 http://en.cidca.gov.cn/2018-08/09/c_261152.htm).

Currently, the NCWS-KDP is a beneficiary of the highly concessional ODA loan provided by the PRC's Export-Import Bank of China (CEXIM) based on the 2018 Preferential Buyer's Credit Loan Agreement between MWSS and CEXIM.

The Chinese ODA is in line with PRC's foreign aid strategy under President Xi Jinping's centerpiece foreign policy's major platform, the Belt and Road Initiative (BRI). The BRI, known within China as the One Belt One Road (OBOR), is a global infrastructure development strategy adopted by the Chinese government in 2013 to invest in more than 150 countries and international organizations (Belt and Road Initiative (worldbank.org) 2018).

Following the country's regulatory framework (RA 8182 as amended by RA 8555), Asst. Secretary Antonio Joselito Lambino II of the Department of Finance (DOF) argues that ODA financing of the NCWS-KDP dam project benefits the consumers with lower project costs at PHP12.25 billion (approximately USD221.61 million in July 2023 currency exchange) compared to PHP18.7 billion (about USD338.66 million in July 2023 currency exchange) when it was originally conceived to be funded under a public-private partnership (PPP) scheme in 2014 (DOF 2019). He further points out that even if a PPP mode of financing would not have any cost to the government, it does not mean that it has no cost to the consumer, "the higher project and financing costs of a solicited PPP would have been borne by users, eventually... there's no such thing as free water."

Lambino estimates that even if fees and interest payments are added to the cost in completing the project through ODA, it would still be significantly lower at PHP14.5 billion (USD262.2 million in July currency exchange) compared to the estimated price tag of PHP18.7 billion under a PPP scheme. Thus, the government contends that financing the NCWS-KDP dam project through ODA is more beneficial to the people compared to the PPP.

Nonetheless, the 2018 MWSS-CEXIM loan agreement (otherwise known as the Preferential Buyer's Credit Loan Agreement between MWSS and CEXIM) which was sanctioned under ODA's auspices seems to compromise the country's patrimonial assets and properties as it "irrevocably waives any immunity on the grounds of sovereignty or otherwise for itself or its property in connection with any arbitration proceeding..." in case of default on the loan (Art 8.1) in view that the Agreement is governed in "accordance with the laws of China" (Art. 8.4). Consequently, unresolved disputes between MWSS and CEXIM shall be resolved and adjudicated by the Hong Kong-based institution, Hong Kong International Arbitration Centre (HKIAC) whose decision shall be "final and binding upon both parties" (Art. 8.5). This provision renders the Philippine ODA Act inoperable in resolving conflict between contending parties.

Public-Private Partnership

Conceptually, PPP involves collaboration and co-operation between a government agency and a private-sector company which are collectively engaged in financing, building, and operating projects that can be used to finance, build, and operate large-scale government projects such as roads, bridges, or public transportation networks, hospitals, and infrastructure projects for social, economic, and cultural development, among others. With private funding, such partnership allows these projects to be completed sooner or make it a possibility in the first place.

Partnerships often encompass concessions of tax or other operating revenue, protection from liability, or partial ownership rights over nominally public services and property to private sector, for-profit entities. They function well when private sector technology and innovation combine with public sector incentives to complete work on time and within budget. They do, however, have some risks, i.e., cost overruns, availability risks, etc. and disadvantages like perceived self-dealing and rent-seeking by the public (PPP Knowledge Lab | Public Private Partnership (worldbank.org)).

In appreciating the role of the private sector in national and sustainable development, Sec 20, Article 2 of the 1987 Philippine Constitution declares the following: “The State recognizes the indispensable role of the private sector, encourages private enterprise, and provides incentives to needed investments.” Bolstering this effort is the enactment of Philippine Congress of Republic Act 9184 or the Government Procurement Reform Act (2002) for the procurement of goods, supplies and services wherein the private sector is enjoined to participate. Among others, the key and relevant principles of the Act are: (1) “transparency in the procurement process” as well as in the implementation of procurement contracts; (2) “competitiveness” by giving equal opportunity to “enable *private contracting parties* who are qualified contracting parties to participate in public bidding; (3) “system of accountability” where both *public and private parties* who directly or indirectly involved in the procurement process and in the implementation of procurement contracts are, when warranted by circumstances, investigated and held liable for their actions; and (4) “public monitoring” of the procurement process and implementation of awarded contracts (see Sec. 3, Art. 1. italics provided). The monitoring function has been given to the Bids and Awards Committee (BAC) under the law’s sec. 12, Art. 5.

In addition, Republic Act 6957 (Build-Operate-Transfer [BOT] Law) enacted in 1990 and amended by Republic Act 7718 (Amended BOT Law) in 1994 provides a more focused framework in PPP infrastructure development. The former allowed Local Government Units (LGUs) to enter into contractual arrangements with the private sector to implement infrastructure projects through two variants – Build-Operate-and-Transfer (BOT) and Build-Transfer-and-Operate (BTO). The latter enhances and broadens the list of PPP government implementing agencies such as government owned and controlled corporations (GOCCs), government financing institutions (GFIs) and state universities and colleges (SUCs). The amended BOT law stimulates incentives for attracting private sector investments to venture into PPP projects and allows negotiated unsolicited proposals from private contractors as long as these comply with conditions outlined in the law.

More importantly, RA 7718 allowed for the inclusion of other contractual arrangements or schemes to implement PPP projects. Since BOT projects are envisaged as tailor-fit solutions and could vary in form depending on existing conditions, the amended BOT Law and its Implementing Rules and Regulations (IRR) authorize collaborative partnerships between government and the private sector through several and through the broad spectrum of joint venture modalities apart from BOT and BTO. Other variations of PPP are: (a) Build-Own-Operate (BOO), which requires the approval of the President of the Philippines; (b) Contract-Add-Operate (CAO); (c) Develop-Operate-Transfer (DOT); (d) Rehabilitate-Own-Transfer (ROT); (e) Rehabilitate-Own-Operate (ROO); (f) Build and Transfer (BT); (g) Build-Lease-Transfer (BLT); and (h) other variations as may be approved by the President of the Philippines (RA 7718, Sec 2 [b-j]).

In August 2022, the amended BOT Law's IRR was further modified under President Marcos Jr. to “establish the right policies, institutional frameworks and regulations that will further promote competition and transparency in our PPP regime,” according to NEDA Secretary Arsenio Balisacan. Among others, the revised IRR expanded the participation of the private sector in development projects to include “intermodal transport stations and terminals, in-land cargo terminals, park and ride facilities, automated fare collection systems, traffic management systems, traffic monitoring systems, traffic enforcement systems, congestion management systems, and parks” (PWC).

Private sector participation in public service delivery, including “big-ticket projects of the national government,” was further strengthened with the signing of Executive Order 30 last 2 June 2023 by President Marcos Jr. (Valente 2023). It re-organized the Public-Private Partnership Governing Board (PPPGB) as the overall policymaking body for all PPP-related matters, together with the project development and monitoring fund. Besides, the PPPGB was entrusted to set the “strategic direction of the PPP Program and create an enabling policy and institutional environment for PPP” (Valente 2023).

Considering the PPP framework and benefits it conferred to society, the WBWSP-UWD opted for a business-to-business (B2B or B-to-B) transaction between WawaJVCo. Inc. and MWCI through an offtake agreement. While Mr. Tan (President of WawaJV Co. Inc.) declared that “[T]he Wawa Bulk Water Supply Project is (also) a *private-public partnership* between the Metropolitan Water Sewerage System (MWSS) and Wawa JVCo” on his March 9, 2023 interview, he nonetheless remarked in his subsequent 27 April 2023 interview that “*There is no contractual arrangement between the government and Wawa JVCo under the BOT Law or its revised IRR* (referring to the 2022 Revised Implementing Rules and Regulations) as the contract is a business-to-business transaction and not a BOT project” (*italics provided*). He added that, “*The government’s involvement is mainly to step in if the concession agreement between Manila Water and MWSS expires in 2037.*” (*italics provided*).

Clearly, in the case of the WBWSP-UWD and MWCI partnership, government participation and collaboration are engaged through the enforcement of the concession agreement entered between MWSS and MWCI. The former, a government-owned water supply, treatment and distribution utility in charge of water privatization in Metro Manila, exercises oversight and administrative functions over the latter as stipulated in the concession agreement. Correspondingly, the government is mandated to protect the consumer or customer when the vendor (concessionaire) fails to honor its promises or guarantees. The purchaser has the absolute right to seek redress and justice before governmental institutions and agencies. By the same token, when water distributed by the concessionaire causes harm to the consumer, the government through the courts, may hold the former responsible and accountable.

In a nutshell, it is argued that although PPP and B2B are conceptually different, they do overlap in certain cases, more so B2B can operate within the PPP context.

In the same light, any unresolved dispute on the offtake agreement between WawaJCo. Inc. and MWCI (B2B transaction) has to be arbitrated by Philippine courts. The government enforces the terms of contracts between parties in the degree that companies bring one another to court just as individuals do. It appears, therefore, that WBWSP-UWD operates within a hybrid framework of PPP with B2B serving as a constituent of PPP.

Analysis: Transparency and Governance

As conceptually discussed earlier, transparency is one of the signposts of good governance. Governance, on the other hand, refers to the process of managing public affairs and resources that is free from corruption and with due regard to the rule of law. In general, and in particular, governance is concerned with the management and decision-making processes that ensure accountability, effectiveness, efficiency, and ethical practices of the dam projects.

In examining the transparency of the projects, the following measurements are used: CoST IDS; processes of public consultation; accepted social and environmental standards; and disclosure of contracts and agreements. Regarding governance, assessments of regulatory frameworks and oversight mechanisms were conducted.

Transparency

- *CoST IDS Scores* - In terms of the CoST IDS, the WBWSP-UWD project proved to be more transparent and accountable than NCWS-KDP with 179 total scores in 39 CoST IDS items compared with the latter having 104 covering six project phases, namely: project identification; preparation; completion; contract phase; procurement; and implementation. On average, WBWSP-UWD project chronicled nearly five while NCWS-KDP recorded nearly three with six as the highest score per item and zero as the lowest (see Table 3 above and Annexes 1 and 2).

- *Public Consultation* - Meaningful public consultation and discussion on the impact and effect of any proposed project with the affected communities, civil

society organizations, and other stakeholders is an important component of transparency. It is essential that people whose livelihood, culture, and way of life would be disturbed by the project should be consulted. Their feedback should be taken, their legitimate concerns addressed, and local perspectives incorporated into the decision-making process, not only to comply with the provisions of the law (1997 Indigenous Peoples Rights Act [IPRA] or Republic Act 8371) and international covenant (UN Declaration on the Right of Indigenous Peoples [UNDRIP]) on the indigenous peoples' (IPs) right to Free, Prior, and Informed Consent (FPIC), but also to make the project successful.

The study attests that both projects had complied with the FPIC requirement with regard to the IPs (Dumagat and Remontados). The NCWS-KDP had been accorded with FPIC by the NCIP in November 2022 in spite of the protest of Dumagat-Remontados IPs who marched to Malacañang Palace to oppose the construction of the Kaliwa Dam. The indigenous community sought a dialogue with President Marcos Jr. and demanded a halt to the construction of the project (Cabigo 2023). However, the attempt was unsuccessful.⁹ It is important to note that the certificate was issued after the construction has already commenced.

On the part of the WBWSP-UWD, its FPIC was awarded in July 2020 and March 2022 for its Phase 1 and 2 respectively. The MOA forged between Wawa JVCo Inc. and Dumagat/Remontados in both phases was witnessed by representatives of the NCIP.

- *Social and Environmental Standards* - As corollary to public consultation, the conduct of a comprehensive social and environmental impact assessment is an important aspect in appraising the transparency of dam and other big-ticket infrastructure projects. Assessments are to be made public to enable stakeholders and interested parties, groups, and individuals to review and hence provide feedback on them. Large-scale dam projects like the cases cited can have significant environmental impact, i.e., on habitat destruction, alteration of river ecosystems, and potential threats to biodiversity. Social impact may involve the displacement of local communities, particularly those living in the vicinity of the project. Therefore, any resettlement has to be planned carefully.

The issuance of the Environmental Compliance Certificate (ECC) to the project denotes that it can proceed to the next stage of project planning which is the acquisition of the necessary approval and permits from other government agencies and LGUs. Ceding the ECC suggests that the proposed project will not

cause significant negative environmental impact, as disclosed by the approved Environmental Impact Assessment (EIA). The Certificate similarly commits the proponent to the endorsed Environment Management Plan.

In the case of the NCWS-KDP, its ECC from DENR-EMB was afforded to its project owner, MWSS, on 11 October 2019. It is to be noted however that in the Commission on Audit (COA) 2020 audit report, the MWSS (project owner of NCWS-KDP) proceeded with the implementation of the PHP12.2 billion Kaliwa Dam project in Infanta, Quezon “without proof of compliance with environmental prerequisites and submission of necessary permits” (Marcelo 2021). Alternatively, WBWSP-UWD project had its ECC in July 2020.

- *Disclosure of Contracts and Agreements* - It is central to transparency that contracts, agreements, and bidding processes are disclosed to ensure that selection of contractors, allocation of funds, and the overall project management are forthright. As stated earlier, transparency strengthens democracy and promotes accountability. On contracts and agreements, the WBWSP-UWD project is more transparent, garnering the highest score of six in its CoST IDS’s contract phase while NCWS-KDP recorded zero (See Table 3 above). The former as well is assessed to have maintained a more comprehensive website that keeps the public updated on the development of the dam’s construction apart from the regular news releases it posts compared to the latter.

In an interview on the 27th of April 2023, Mr. Tan (WawaJVCo. Inc. President) said that even before the contract (offtake agreement) was signed between his company and MWCI on the one hand, and between the latter and MWSS (concession agreement) on the other hand, due disclosure of terms and conditions, consultation, and negotiation between parties were done. He confirmed that MWCI also conducted public consultations in the concession area of Marikina, Antipolo, Mandaluyong, Makati, and Taguig whereby proposed pricing and tariffs were presented, discussed, and agreed upon. Such agreement was affirmed to have been signed in August 2019.

Governance

- *Regulatory Frameworks* - A robust and vigorous regulatory framework needs to be in place to oversee and effectively manage the dam projects. The framework

must define the roles and responsibilities of relevant and appropriate government agencies, provide clear guidelines, and warrant compliance with environmental and social standards within acceptable national and international parameters.

As discussed earlier in this paper, the NCWS-KDP and WBWSP-UWD projects are governed by two different regulatory frameworks. The former is governed under the policies and regulations of the ODA as provided by RA 8182 (1996) as amended by RA 8555 (1998) while the latter is presided under a hybrid PPP (RA 6957 [1990] as amended by RA 7718 [1994] and EO 30 [2023]) with B2B as a component.

While NCWS-KDP falls within the framework of the China ODA (neither subject to nor measured under OECD protocols), the 2018 loan agreement sealed between MWSS and CEXIM under its patronages, some terms and conditions concurred in by the Philippine government may not necessarily meet the ODA's objective in promoting sustainable development among less developed countries. As cited earlier in this paper, Article 8.1 of the Preferential Buyer's Credit Loan Agreement ("Waiver of Immunity") endangers the country's national and ancestral (patrimonial) assets and properties as "[t]he Borrower irrevocably waives any immunity on the grounds of sovereignty or otherwise for itself or its property in connection with any arbitration proceeding..." in case of default on the loan.

Furthermore, the Agreement has dismissed the application of any Philippine law, policy, or rules in dispute settlement between parties as Article 8.4 ("Governing Law") expresses that "rights and obligations of the parties ... shall be governed by and construed in accordance with the *laws of China*" (italics provided) and the resolution of conflict and controversy shall be through the adjudication of the "Hong Kong International Arbitration Centre (HKIAC)...which shall be conducted in accordance with the HKIAC arbitration rules in effect at the time of applying for arbitration" (Article 8.5).

Insofar as the HKIAC is a company limited by guarantee and is a non-profit organization, it is considered one of the world's leading dispute resolution organizations. However, the use of Chinese laws in addressing conflicts and disagreements between the MWSS and CEXIM may not be fully acceptable to the former. This raises concerns about the transparency of Chinese laws, perceived to protect Chinese interest and its authoritarian regime rather than being democratic and fair, notwithstanding the integrity of the arbitration process and innovativeness of the arbitration practice.

Perceivably, the Agreement forged between MWSS and CEXIM under the ODA framework is in stark contrast to the PPP cum B2B framework under which WawaJVCo. Inc. operates. As earlier referred to, the WBWSP-UWD utilizes “offtake (OT) agreement” to obtain easy finance; a B2B transaction between WawaJVCo. Inc. and MWCI. The latter is yet bound to a concession agreement with MWSS. This is an evident component of private and public sector engagement. The hybrid PPP and B2B fulfils not only the commercial interest of private enterprises but also delivers a project and service traditionally furnished by the public sector.

With reference to disputes on agreements, settlements are done in different venues based on the type of agreement. On the offtake agreement between WawaJVCo. Inc. and MWCI, Mr. Tan pointed out that unresolved differences will have to be settled through arbitration proceedings “in accordance with the arbitration rules of the United Nations Commission on International Trade Law (UNCITRAL)”. He further revealed the process of selecting arbitrators:

“[T]here shall be three (3) arbitrators. WawaJVCo and the offtaker shall each have the right to appoint one (1) arbitrator and the two (2) arbitrators nominated shall then appoint the third arbitrator. The parties shall agree that the arbitrators may apply equitable principles if they consider their application to key issues to be consistent with the spirit of this Agreement and the underlying intent of the Parties. The Parties agree that *no dispute or difference under this Agreement will be referred to the courts for resolution except where necessary to preserve the subject matter of the action by way of injunctive or declaratory proceedings*. The venue for Arbitration shall be the Republic of the Philippines” (Interview, 27 April 2023, *italics provided*).

On the other hand, disputes and disagreements on the interpretation and application of the provisions of the Concession Agreement between MWSS and MWCI will have to be worked out by appropriate Philippine courts.

- *Oversight and Monitoring Mechanism* - Performing oversight and monitoring function is one of the key parts of good governance. It keeps track on the progress of projects over time, evaluates their compliance to rules and regulations, and resolves any irregularities, anomalies, or misdeeds that may occur in the different aspects of project development and implementation.

Under the ODA, RA 8182 as amended by RA 8555, a clear oversight tripartite

mechanism has been spelled out as responsible for overseeing the execution and accomplishment of ODA projects. Sec. 8 of the law states: “Pursuant to its constitutional duties, the Executive Department, particularly NEDA, the Commission on Audit (COA) and Congress shall discharge Oversight functions.” While NEDA is particularly tasked to conduct annual review of the status of all projects financed by ODA, the COA audits on each ongoing and completed project and the Congressional Oversight Committee on Ways and Means,¹⁰ receives reports from NEDA and COA on performance of ODA and executes its legislative function to address issues and problems pertaining to ODA as a development tool of the country. Likewise, continuous monitoring of ODA projects has been stipulated in Sec. 9 of the same law.¹¹

On the participation of the private sector in national development and involvement in competitive bidding on government infrastructure projects and consulting services, Sec. 20, Art. 2 of the 1987 Philippine Constitution and RA 9184 (Government Procurement Reform Act of 2002), respectively, are relevant. The latter has identified the principles of transparency, competitiveness, system of accountability, and public monitoring of the procurement process (Sec. 3, Art. 1). An oversight committee has been created as well, composed of legislators coming from the House of Representatives and the Senate (Joint Congressional Oversight Committee) which is good for five years (Sec. 74, Art. 25). After which, its oversight and monitoring function is assumed by the Government Procurement Policy Board’s (GPPB) Technical Support Office (TSO) (Sec. 63.2 and 63.3, Rule 20 of RA 9184’s IRR). Aside from the TSO, RA 9184 has given the Bids and Awards Committee (BAC) the responsibility in ensuring that the Head of the Procuring Entity (HoPE) “abides by the standards set forth by [the] Act and the IRR” (Sec. 12 Art. 5, RA 9184).

Regarding RA 7718 or the amended BOT Law (1994), Sec. 12 initially identified the Coordinating Council of the Philippine Assistance Program (CCPAP) as the coordinating and monitoring arm for PPP projects, placed under the Office of the President (OP). It was later renamed to Build-Operate-Transfer Center (BOT Center) in 2002 transferred its supervision from the OP to the Department of Trade and Industry (DTI) by Executive Order No. 144 and then finally renamed to Public-Private Partnership Center (PPP Center) by EO No. 8 in 2010 under NEDA. The PPP Center serves as the central coordinating and monitoring agency for all PPP projects in the Philippines whose mandate and functions are provided

for in Sec. 14.1, Rule 14 (Coordination and Monitoring of Projects) of the 2012 revised IRR of the amended BOT Law.

Policy Recommendations

Against the backdrop of issues identified and analyses of the two of the flagships dam projects of the country, the following policy recommendations are presented as general guidance for policy makers for consideration and information for other interested parties or stakeholders:

1. *Broaden transparency and accountability measures:* Transparency serves to achieve accountability. This denotes that authorities (both public and private) can be held responsible for their actions. The study has shown that even though the WBWSP-UWD project has been more transparent compared to the NCWS-KDP using CoST scores, there are still areas that need to be enhanced to broaden the transparency and accountability features of the projects. For instance, project authorities must establish mechanisms to provide the public more access to information and documents like project papers, business-to-business agreements, monitoring and evaluation systems, and anti-corruption measures.

Although information gained from interviews (in the case of WawaJVCo. Inc.) is valuable, it is vital too that knowledge conveyed orally be verified from available documents and other primary sources of information. Unfortunately, no interviews were done or were not possible with any of the authorized representatives of the Kaliwa dam project. Notably, transparency is central to empowering people. When citizens and direct stakeholders can easily obtain the public information that affects their well-being, they are better equipped to hold their leaders accountable and to participate in the decisions that affect their lives. Lack of transparency and accountability leads not only to potential corruption but also to conflict of interest and favoritism;

2. *Deepen consultation with the indigenous communities:* The NCWS-KDP has raised significant concerns regarding its impact on indigenous communities, particularly the Dumagat-Remontado IPs who have inhabited the project area since time immemorial. In as much as the construction of the dam could lead to displacement and loss of their ancestral lands – cradle of their culture, identity, values, and ways-of-life – it is extremely important that projects comply with the

legal requirement of securing the FPIC from the IPs. It is not only for the purpose to fulfilling what the national law demands but conforming with the basic human right guaranteed by United Nations Declaration on the Rights of Indigenous Peoples;

3. *Sustain continuing community engagement and fair resettlement program:* In line with consultation with IP communities, extensive and profound engagement with the affected IPs is a continuing and long-term process, not only before the construction of the dam but even after the dam has been constructed to ensure that issues and concerns of IPs in their resettlement are adequately addressed. Some of these solutions include a comprehensive resettlement and compensation plan consisting of fair compensation, restoration and/or access to traditional and new economic activities that could provide food and income-generating activities (foraging, fishing, farming, handicrafts, etc), measures that will mitigate multigenerational negative effects of relocation experiences on IPs, and the widening of opportunities to obtain needed basic social services like education, health and care, transportation, information, etc.;

4. *Strengthen anti-corruption measures in regulatory frameworks:* Admittedly, regulatory frameworks may not absolutely prevent and fight corruption on their own. Given such limitations, anti-corruption measures need to be effective in laws and policies relevant to ODA (RA 8182 as amended by RA 8555) and PPP (RA 9184, RA 6957 as amended by RA 7718 and EO 30). These measures can be in the form of more effective rules on open access to information of public interest, the disclosure and management of conflicts of interest in the public sector, the disclosure and verification of assets of public officials, and regulation of the interaction between the private and the public sector, among the key ones. Another suggestion includes making all corrupt offenses under the definition of the United Nations Convention Against Corruption mandatory under Philippine laws. This brings together public and private sector corruption into one meaning; and

5. *Fortify the role of government in business-to-business (B2B) transactions:* The government may set the rules and guidelines that businesses must follow when engaging in B2B transactions, like the “offtake agreements,” in contract enforcement, consumer protection, business support and promotion, intellectual property rights, competition, taxation, industry-specific rules and regulations, data privacy and security against cyber threats, among others.

6. *Explore other potential partners for the NCWS-KDP:* Given the lack of transparency and accountability in the NCWS-KDP, it would be worth exploring other possible partners in the endeavor. On this note, Japan could be considered as an alternative partner for the NCWS-KDP, with a proven track record of being a reliable and bigger development partner to the Philippines. Reputable institutions such as the Asian Development Bank (ADB) and the Japan International Cooperation Agency (JICA) uphold the highest standards of transparency and accountability.

What is to be Done: Suggested Action Plan

In the interest of particularizing the aforesaid policy recommendations, the study suggests the following specific policy action with their corresponding particulars to resolve the issues identified in the findings. The proposals hereunder are presented in a table format for easy reference.

A. On Specific Policy Action

Table 6 . Proposed Specific Policy Action and Particulars That May Be Adopted

Specific Policy Action	Particulars
1. Continuous training and capacity building programs	1. a. Invest in designing and conducting of continuous training and development program for government officials and project staff on transparency and accountability best practices. 1.b. Advance, promote, and deepen a culture of integrity and ethical behaviour among government officials, project staff and members.
2. Strengthen procurement processes, public disclosure, and mass accessibility	2.a. Public presentation and publication of procurement documents, assessment and evaluation standards and benchmarks, and contract awards online, media (print), posters in LGU public spaces for public inspection and perusal. 2.b. Establish clear and precise guidelines for conflict-of-interest disclosures among project stakeholders. 2.c. Create a website or portal exclusively devoted in providing significant information about the project, especially on funding, grants, loans, budgets, contractors, consultants, timelines, and progress reports. 2.d. Utilize user-friendly language and simple visual aids to make complex information more understandable for the general public.

Source: Authors' data management and collation

*Table 6 . Proposed Specific Policy Action and Particulars
That May Be Adopted*

Specific Policy Action	Particulars
3. Whistleblower protection	3.a. Implement strongly the Whistleblower Protection Act of 2009 and its mechanisms to encourage individuals to report corrupt practices or misconduct related to infrastructure projects.
4. Anti-corruption laws and measures	4.a. Toughen anti-corruption laws and streamline enforcement mechanisms to make sure that swift legal action for corrupt practices be meted out to individuals, groups, and syndicates including politicians engaged in corrupt practices in infrastructure projects.
5. International standards	5.a. Bring into line infrastructure project transparency and accountability practices with international standards and best practices such as those set by organizations like the World Bank and Transparency International as well as those established by international covenants and declarations set by UN statutes, protocols and conventions that bind the Philippine state.
6. Vigorous reporting and monitoring	<p>6.a. Require project contractors to strictly provide regular progress reports to relevant government agencies as well as to other stakeholders and the public through the website or portal that is exclusively dedicated in providing information concerning the project.</p> <p>6.b. Make use of appropriate technology like GPS tracking, IoT sensors (pieces of hardware that detect changes in an environment and collect data) and project management software to evaluate and monitor project progress in real-time.</p> <p>6.c. Apply the use of data analytics and artificial intelligence to spot irregularities, anomalies, or deviations in project implementation;</p> <p>6.d. Regularly perform comprehensive risk assessments at each stage of the project cycle (from identification and planning to implementation) to identify potential challenges and mitigation strategies as well as evaluate their impact, cost-effectiveness, and compliance with transparency and accountability measures.</p> <p>6.e. Share these assessments with the public and other stakeholders.</p>
7. Performance-based contracts	<p>7.a. Utilize performance-based contracts wherein payments are made based on key completion of identified milestones and quality standards have been met.</p> <p>7.b. Employ the participation of third-party evaluators to determine and verify contractors' performance before any payments are made to contractors.</p>
8. Partnerships with multi-stakeholder	<p>8.a. Work together with civil society organizations, international donors, and private sector entities to foster a culture of transparency and accountability.</p> <p>8.b. Hold in-depth and intensive public consultations and focus-group discussions (FGDs) with stakeholders and local communities that will be affected by the infrastructure projects.</p> <p>8.c. Empower stakeholders and communities by enhancing their investigative powers to guarantee compliance with project guidelines and standards.</p>

Source: Authors' data management and collation

B. On Particular Improvements in the Domain of Regulatory Framework

Concerning improvements on the transparency, accountability, and effectiveness of ODA and PPP regulatory frameworks, the table below identifies the possible areas where interventions can be initiated.

Table 7. Common Areas to be Reformed as per Regulatory Framework

Suggested Reform Area	Official Development Assistance (ODA)	Public-Private Partnership (PPP)
Financing/Funding	<ul style="list-style-type: none"> • Publish through the government’s website/portal details about fund disbursement, financial terms, and conditions attached to the funding of projects; • Consider results-based or performance-based financing mechanisms that make disbursements contingent to the achievement of specific project milestones and development outcomes. 	<ul style="list-style-type: none"> • Disclose through publication in a dedicated website/portal maintained by the project owner(s) the sources of project financing, including private investments, government contributions, and user fees, to the public.
Risk assessment and mitigation	<ul style="list-style-type: none"> • Perform/conduct a comprehensive risk evaluation for ODA-funded infrastructure projects and develop appropriate mitigation strategies to address potential challenges. 	<ul style="list-style-type: none"> • Define clearly the mechanism related to risk allocation in PPP contracts to ensure the equitable and impartial sharing of risks between public and private entities.
Reporting, monitoring, and evaluation	<ul style="list-style-type: none"> • Use internationally recognized appraisal standards to evaluate the feasibility of the project as well as its financial, social and environmental impacts. • Make regular reporting on project progress, financial disbursements, and impact assessments through a website/portal to make them available to the public’s, stakeholders’ and interested parties’ perusal and evaluation. • Engage the professional services of independent auditors and evaluators to assess the effectiveness, efficiency, and impact of ODA infrastructure projects. 	<ul style="list-style-type: none"> • Conduct a robust and comprehensive monitoring of PPP project including its performance based on the pre-determined key performance indicators (KPIs). • Conduct a system of ongoing evaluation, post-implementation reviews, and post-audits of PPP projects to assess their impact and lessons learned from both successes and failures based on changing market and demographic conditions.
Public awareness	<ul style="list-style-type: none"> • Vigorously conduct public awareness campaigns and 	<ul style="list-style-type: none"> • Systematically conduct an education program that will

Source: Authors’ data management and collation

Table 7 . Common Areas to be Reformed as per Regulatory Framework

Suggested Reform Area	Official Development Assistance (ODA)	Public-Private Partnership (PPP)
Anti-corruption measures	<p>feedback mechanisms to keep citizens informed about ODA projects and to allow them to report concerns or grievances.</p> <ul style="list-style-type: none"> • Implement robust and comprehensive anti-corruption measures, including due diligence on project contractors, transparent procurement processes, and the use of independent auditors. 	<p>educate the public on the benefits, risks, and accountability mechanisms associated with PPP projects.</p> <ul style="list-style-type: none"> • Carry out anti-corruption measures focusing on transparent procurement practices and whistleblower protection in order to prevent corrupt practices in PPP projects.
Capacity building	<ul style="list-style-type: none"> • Invest in comprehensive, sustained, and transformative training and capacity building programs for government agencies responsible for managing ODA projects. This includes training in project management, financial management, and procurement procedures. 	<ul style="list-style-type: none"> • Provide training and capacity-building programs for government officials and staff responsible for managing PPP projects. In the same manner, training and development programs have to be designed too appropriately for private companies engaged in projects with government agencies.
Environmental sustainability and standards	<ul style="list-style-type: none"> • Ensure that ODA infrastructure projects adhere to environmental sustainability standards and conduct thorough environmental impact assessments. 	<ul style="list-style-type: none"> • Incorporate stringent environmental and social safeguards into PPP projects to minimize negative impacts on the environment and affected communities.

Source: Authors' data management and collation

C. On Proposed Government Agency which Need to Take Action in Advancing Reforms

Furthering transparency, accountability and good governance in water infrastructure projects necessitates the collaboration of a number of key government agencies, offices, instrumentalities, and actors. These public institutions are critical actors in the process of carrying out and delivering the fundamental needs of the people, especially clean and safe potable water.

Government institutions' commitment to accountability, public engagement, and adherence to best practices are important facets of improving transparency and governance. Table 8 succinctly displays the lead government agencies and their respective functions in the course of building up transparency and accountability.

Table 8 . Key Government Agencies and Actors and Functions Towards Advancing Transparency in Water Infrastructure Projects

Government Department/ Agency/Instrumentality/ Actors	Key Function
1. Department of Public Works and Highways (DPWH):	<ul style="list-style-type: none"> • Foster DPWH's capacity to plan, implement, and oversee water infrastructure projects transparently with high sense of accountability. • Enhance its function in enforcing an standardized project appraisal, procurement, and monitoring procedures.
2. Department of Environment and Natural Resources (DENR):	<ul style="list-style-type: none"> • Make certain, without prejudices, that water infrastructure projects comply with environmental regulations by conducting an unbiased environmental impact assessments and monitoring for projects affecting natural resources. • As an attached agency of the DENR, the National Water Resources Board (NWRB), must ensure that the exploitation, utilization, development, conservation and protection of the country's water resource, are consistent with the principles of "Integrated Water Resource Management"
3. National Economic and Development Authority (NEDA):	<ul style="list-style-type: none"> • Require full and detailed project feasibility studies and cost-benefit analyses for water infrastructure projects before approval as well as establish a regular and systematic review of project's performance in line with approved plans and budgets.
4. Department of Finance (DOF):	<ul style="list-style-type: none"> • Guarantee that funding allocation and disbursement for water infrastructure projects are transparent • Execute a robust financial management and auditing system and procedures to prevent corruption
5. Department of the Interior and Local Government (DILG):	<ul style="list-style-type: none"> • Stimulate LGUs' passion to transparency and accountability by providing them regular guidance and training to good governance practices.
6. Local Government Units (LGUs):	<ul style="list-style-type: none"> • Empower LGUs and inspire their communities in project planning, implementation, and monitoring of water infrastructure projects in their area of responsibility.
7. Civil Society Organizations (CSOs):	<ul style="list-style-type: none"> • Engage the active involvement of CSOs in planning, implementing, overseeing, and monitoring of water infrastructure projects. • Establish linkage with CSOs to enjoin their cooperation and collaboration in raising public awareness of water infrastructure projects and their impact to affected communities.
8. Commission on Audit (COA):	<ul style="list-style-type: none"> • Advance COA's participation in auditing water infrastructure projects effectively by giving them full access to project documents and relevant information to enable it to perform its auditing function.
9. Public-Private Partnerships Center (PPPC):	<ul style="list-style-type: none"> • Heighten PPPC's role in facilitating transparent and accountable public-private partnerships for water infrastructure by enforcing a standardized PPP procurement guidelines

Source: Authors' data management and collation

Table 8 . Key Government Agencies and Actors and Functions Towards Advancing Transparency in Water Infrastructure Projects

Government Department/ Agency/Instrumentality/ Actors	Key Function
10. Philippine Competition Commission (PCC):	<ul style="list-style-type: none"> • Explore, investigate, and address anti-competitive agreements, mergers, acquisitions, practices, abuses of dominant position, in the water sector to ensure fair pricing, sound market regulation, increase competitiveness, expand consumer choice, quality services, and effective delivery among water concessionaires to improve public welfare.
11. Department of Education (DepEd):	<ul style="list-style-type: none"> • Raise awareness and educate pupils and students to promote responsible water use. The conscientious and sensible utilization of water resource can be integrated in the school's educational curriculum.
12. Philippine Information Agency (PIA):	<ul style="list-style-type: none"> • Make effective use government media outlets (print, broadcast, TV, and online) to disseminate knowledge and information about water infrastructure projects, their objectives, and progress to the public.
13. International Donors and Organizations	<ul style="list-style-type: none"> • Link and collaborate with international donors and organizations to avail of their technical expertise and financial resources for water infrastructure projects. • Ascertain that foreign aid and donations are transparently and efficiently utilized to improve and develop current water resources.

Source: Authors' data management and collation

D. Proposed Metrics Under which Water Infrastructure Projects Can Be Taken Efficiently and Effectively

The effective and efficient delivery of clean water and management of wastewater are contingent on the appropriateness and responsiveness of water infrastructure projects which in turn are based on the key performance indicators (KPI). Among the metrics that can be considered are presented in the table below:

Table 9 . Key Performance Indicators and Measures

Key Performance Indicators (KPI)	Expressive Measures
Cost-Effectiveness	<ul style="list-style-type: none"> • Cost per Unit of Water: Cost of producing or delivering each unit of water. Efficiency is indicated with a lower cost.

Table 9 . Key Performance Indicators and Measures

Key Performance Indicators (KPI)	Expressive Measures
Resource Utilization	<ul style="list-style-type: none"> • Return on Investment (ROI): Financial returns relative to the project's initial investment. It is more effective if the ROI is positive • Energy Efficiency: It means “doing more and better with less.” Improving water efficiency means increasing water productivity, and improving technical efficiency of water services and the management efficiency of their provision over the complete life cycle • Labor Productivity: Measure the efficiency of human resources involved in project operations and maintenance
Infrastructure Performance	<ul style="list-style-type: none"> • Water Quality: Measure particulate matter (turbidity), acidity (pH), dissolved solids, dissolved oxygen, and contaminants to ensure safe drinking water • Infrastructure Reliability: Track downtime and maintenance needs of water treatment plants, pipelines, and distribution networks. • Leakage Rate: Measure the amount of substance (mass), flowing due to a leak. Calculate the percentage of water that is lost through leaks or inefficiencies in the system
Sustainability and Environmental Impact	<ul style="list-style-type: none"> • Carbon Footprint: Assess the project's greenhouse gas emissions, especially related to energy consumption. • Biodiversity Impact: Evaluate the effects on local ecosystems, especially in the case of dam construction or reservoirs. Measurement includes canopy fogging, quadrat sampling, transect sampling, netting, and living planet index. The method used depends on the types of organisms ecologists are counting and on the habitat.
Customer Satisfaction	<ul style="list-style-type: none"> • Water Quality Perception: Conduct independent surveys to gauge public perception of water quality. • Service Availability: Measure the reliability and availability of water services to customers/end-users.
Resilience and Risk Management	<ul style="list-style-type: none"> • Emergency Response Time: Measure the time it takes to respond to and mitigate water system emergencies. • Infrastructure Resilience: Assess the amount of time it takes for an infrastructure to be brought back to its pre-event level of functionality; it measures the system's ability to withstand natural disasters and climate change impacts
Project Timelines	<ul style="list-style-type: none"> • Project Completion Time: Compare the planned vs. actual project timeline to gauge efficiency. • Construction Delays: Track and address any delays in construction phases
Financial Metrics	<ul style="list-style-type: none"> • Budget Variance: Monitor the project's budget to identify and address any cost overruns. • Cash Flow: Ensure the availability of funds at each stage of the project to avoid disruptions. • Balance sheet: Computes the rates of return for investors and evaluating a company's capital structure. • Income statement: Profit and/loss statement that determines all

Source: Authors' data management and collation

Table 9 . Key Performance Indicators and Measures

Key Performance Indicators (KPI)	Expressive Measures
Public Health Metrics	<p>revenues and expenses from both operating and non-operating activities</p> <ul style="list-style-type: none"> • Disease Incidence: Monitor waterborne diseases and outbreaks to ensure the project's effectiveness in providing safe drinking water.

Source: Authors' data management and collation

Through these proposed metrics, project managers and stakeholders can continuously evaluate and optimize water infrastructure projects to ensure they are both efficient and effective in meeting the needs of the community while minimizing environmental impacts and resource wastage.

Conclusion

In conclusion, the comparative study of the Kaliwa and Wawa Dam Projects highlights the need to advance the cause of transparency and good governance. While both “big-ticket” infrastructure projects have lofty goals of addressing the country’s water scarcity issues and providing a reliable water supply to meet the growing demands of Metro Manila’s population and nearby provinces, hence contributing to water security and ensuring access to clean water for domestic, agricultural, and industrial purposes, the achievement of the objectives is contingent fundamentally on the degree of transparency with which the project is being administered, safeguarding the processes of management from systemic corruption.

Insofar as the study is not a study on corruption, it clearly shows that the project which is more transparent (Wawa Dam Project), despite some of its limitations, was able to deliver its services far ahead of the Kaliwa Dam Project. Apparently, WawaJVCo. Inc. has been relatively successful in balancing water supply requirements with environmental and social considerations.

The cost and source of financing of both dam projects are important areas of comparison. Granting that NCWS-KDP has a lower estimated project cost

(PHP12.25 billion approximately USD221.61 million in July 2023 currency exchange) compared to WBWSP-UWD's PHP26 billion (approximately USD470.8 million in July 2023 currency exchange), the former's loan agreement with China has some deleterious economic and political consequences to the country's sovereignty and financial stability. The WBWSP-UWD on the other hand, was able to enjoy the participation of other business enterprises through its "offtake agreement" as a viable and sustainable source of funding.

At this stage of the study, it could be argued that a relatively transparent organization heightens its legitimacy and value for money as it fosters economical, efficient, and effective use of resources and provision of services and promotes equity in the allocation and use of resources in its operations. Transparency, which focuses on clarity and openness of the culture, drives behavior and increases responsibility in the management of resources.

When an organization makes public how funds are used, it creates an incentive to ensure more efficient use of those resources and achieve greater cost-effectiveness and efficiency. This improves its performance data and increases operational effectiveness. A policy paper published by the World Bank highlights that "transparency is important not only because it increases the efficiency in the allocation of resources, but also because it may help in ensuring that the benefits of growth are redistributed and not captured by the elite" (Kauffmann and Bellver 2005, p. 2).

To reiterate, furthering transparency and good governance in dam projects is essential to certify their success and minimize potential negative impacts on the environment and local communities. To achieve this goal, governments, private sector entities, and other key stakeholders must work together. As a final note, the following instructions or policy actions are conceived and itemized for the government, private sector, and other stakeholders.

For the Government, the existence of clear policies and regulations is imperative. It should make and enforce clear and comprehensive policies and regulations governing water infrastructure projects that promotes transparency, accountability, and public participation. These policies and regulations must be accessible to the public and provide a clear process for approvals, monitoring, and compliance.

Second, public participation must be promoted by government. It should encourage and facilitate public consultations and involve communities in the

process of planning, implementation, and evaluating of water infrastructure projects. Applicable mechanisms for collecting and addressing public issues, concerns, and feedback should also be established.

Third, transparency in budgeting and other financial records must be assured. Government budgets and other financial records related to water infrastructure projects are transparent, detailed, and accessible to the public. A dedicated website or portal should be devoted for the regular publication of financial reports on project financial standing aside from expenditures for the perusal of the public and other interested parties.

Fourth, whistleblower protection should be totally observed by strongly implementing the Whistleblower Protection Act of 2009 and mechanisms to encourage reporting of corruption or irregularities without fear of retaliation from authorities.

Fifth, open data and information sharing strictly followed by establishing online platforms or databases for sharing project-related data, contracts, and progress reports and making knowledge and information easily available and accessible to the public.

As for the Private Sector, adherence to ethical practices is crucial in terms of operating with integrity, uprightness, honesty, and ethical standards in all aspects and phases of water infrastructure projects.

Second, transparent bidding and procurement should always be pursued to ensure equitable, fair, and competitive bidding processes. Disclosing and sharing of all relevant and appropriate information to potential bidders also promotes the goodwill of transparency.

Third, regular reporting should be done to provide progress reports and updates related to the water infrastructure projects to government agencies and the public. This should include financial disclosures, project milestones, and any challenges faced. Fourth, community engagement is also vital as private stakeholders need to constantly engage with local communities affected by the project and consequently address their concerns and provide regular updates on the project's impact.

Fifth, anti-corruption measures should be complied with. In the area of corporate governance, the private sector must implement strict anti-corruption measures within the organization and enjoin employees to report unethical behavior and corrupt practices of high government and private company officials and staff.

Lastly, for other Stakeholders, civil society organizations and NGOs must monitor water infrastructure projects and advocate for their transparent and accountable implementation. They should also report any irregularities and inconsistencies in project planning and implementation to relevant authorities and the public.

For the media, the broadcast, print and social media should report fairly on water infrastructure projects, highlighting the issues of transparency and accountability. The conduct of investigative reporting on issues of corruption and irregularities related to the planning and implementation of water infrastructure projects should also be done. The media should also serve as a watchdog to hold government and private sector entities accountable on the successes and failures of water infrastructure projects.

And for the public, the population should stay informed about water projects in their respective areas of residence and actively participate in public consultations, discussions, and other forms of dialogues. The reporting of any suspicious activities or corruption to the appropriate authorities should always be practiced.

The suggested instructions for governments, private sector organizations, and other stakeholders can collectively or collaboratively enhance transparency and accountability in water infrastructure projects, ultimately making certain the efficient and equitable distribution of this vital resource.



¹ The World Commission on Dams (WCD) was a global environmental governance forum that existed between 1997 and 2001. It was composed of 12 eminent personalities whose mandate was to review and research the environmental, social and economic impacts and effectiveness of the development of large dams globally including the effect on dam affected communities and project developers, resolve long-standing controversies between supporters and opponents of large dams, assess the development effectiveness of large dams and to develop best practice guidelines for large dam construction and management, based on an extensive review of scientific evidence and wide-ranging stakeholder consultation, and make recommendations for best practices in dam planning, construction, operation, and decommissioning.

² See CIPE Proposal Template p.3.

³ A concrete face rockfill dam (CFRD) is a type of dam widely used in hydropower projects all around the world. Concrete slabs, supported and stabilized by the underlying rockfill materials, are connected with the toe plinth by the peripheral joints, so as to form an impermeable system (see Chen, S.S. et. al. 2016).

⁴ Earth core rockfill dam is made of earth (or soil) built up by compacting successive layers of earth, using the most impervious materials to form a core and placing more permeable substances on the upstream and downstream sides. The earth core is placed against a dumped and compacted rockfill. It is necessary to provide adequate filters between the earth core and the rockfill on the upstream and downstream sides of the core so that the soil particles are not carried by water and piping does not occur (see <https://old.amu.ac.in/emp/studym/100017853.pdf>)

⁵ Gravity dams is a masonry or concrete dam which resists the forces acting on it by its own weight. They are designed to hold back large volumes of water. By using concrete, the weight of the dam is actually able to resist the horizontal thrust of water pushing against it. This is why it is called a gravity dam (see <https://old.amu.ac.in/emp/studym/100017853.pdf>)

⁶ NEDA's Investment Coordination Committee is composed of the Secretary of Finance, as chairman; the NEDA Secretary, as co-chair; and the Executive Secretary, the Secretaries of Agriculture, Trade and Industry, Budget and Management and the Governor of the Central Bank of the Philippines, as members. The ICC evaluates the fiscal, monetary and balance of payments implications of major national projects, and recommends to the President the timetable of their implementation on a regular basis; advises the President on matters related to the domestic and foreign borrowings program; and submits a status of the fiscal, monetary and balance of payments implications of major national projects.

⁷ An arrangement or contract between a producer and a buyer to purchase or sell portions of the producer's upcoming goods. It is normally an agreement prior to the construction of an infrastructure project or facility to secure a market and revenue stream for its future output. This is typically used to help the selling company acquire project financing for future construction, expansion projects, or new equipment through the promise of future income and proof of existing demand for the goods (See Investopedia. Available at <https://www.investopedia.com/terms/o/offtake-agreement.asp#:~:text=An%20offtake%20agreement%20is%20an,stream%20for%20its%20future%20output>).

⁸ However, when the research team requested for a copy of the FPIC, Mr. Tan referred the team to NCIP. Although the team tried to reach out to NCIP, a copy of the FPIC was unsuccessfully received.

⁹ Inquirer Research. 2023. "Marcos snub dismisses marchers vs Kaliwa dam project." <https://newsinfo.inquirer.net/1734874/marcos-snub-dismisses-marchers-vs-kaliwa-dam-project>

¹⁰ Sec. 8 (c) of RA 8182 as amended by R.A. 8555 provides: "There shall be a Congressional Oversight Committee composed of the Chairmen of the Committee on Ways and Means of both the Senate and the House of Representatives, five (5) members each from the Senate and the House representing the majority and two (2) members each from the Senate and the House representing the minority to be designated by the leaders of the majority and minority in the respective chambers."

¹¹ Sec. 9 of RA 8182 as amended by R.A. 8555 says: "All concerned implementing and oversight agencies shall submit to the NEDA all information and reports as may be required by it to review draft contracts and to assess the performance of individual ongoing projects as well as the overall performance of all projects which are funded in whole or in part by ODA."

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Annex 1 . Project CoST Information by Phases and Scores

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
Project Identification	1	Project owner	Metropolitan Waterworks and Sewerage System (MWSS)	4	WawaJVCO Inc	6
	2	Sector, subsector	Water Resources	4	Infrastructure - Water	6
	3	Project name	New Centennial Water Source-Kaliwa Dam Project (NCWS-KDP)	4	Wawa Bulk Water Supply Project	6
	4	Project location	The NCWS-KDP will be situated in Sitio Cablao, Brgy. Pagsangahan, General Nakar, Quezon / Sitio Queborosa, Brgy. Magsaysay, Infanta, Quezon	4	It is in Barangay Calawis in Antipolo City, Barangay Pintong Bukawe, San Mateo, and Barangay San Rafael, Rodriguez in the province of Rizal. The location is considered a protected area under Presidential Proclamation No 294 dated November 24, 2011 and will cover the river systems of Wawa River, Montalban River, Boso-Boso River, Payagwan River, Tayabasan River, and Sapa Bute-Bute River.	6
	5	Purpose	The purpose of the project is to ensure a backup water source and increase the supply of water to meet the growing demand in Metro Manila and nearby areas such as Cavite and Rizal.	5	The project aims to address the water crisis in Metro Manila and the province of Rizal, the problems of flooding in downstream communities during typhoons, and to help protect the eastern part of Metro Manila, including Pasig City and Marikina City, and Rizal province. It aims to provide at least 518 million liters per day which shall increase the water capacity of Manila Water Company by over 30 percent.	6
	6	Project description	The New Centennial Water Supply Project or Kaliwa Dam Project aims to address the increasing water	5	The project is composed of two (2) phases. Phase 1 or the Tayabasan Weir is a 25-meter-roller compacted concrete structure designed to deliver 80 MLD. It has	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
			<p>demand of Metro Manila, Rizal, and Quezon. These areas are home to approximately 17.46 million people or 3.49 million households. By constructing a new dam, the project intends to provide an additional water source and reduce the reliance on the Angat Dam. This project is designed to be “climate resilient” and is based on comprehensive studies conducted by the World Bank and the Japan International Cooperation Agency (JICA). It aligns with the Sustainable Development Goals (SDGs), particularly the goal of ensuring access to clean water supply. While there are other water sources available, the high cost of treatment makes them less feasible. Reliance on Kaliwa, Kanan, and Agos rivers has been identified as a means to achieve water security.</p>		<p>been operational since July 2022. Phase 2 or the Upper Wawa Dam began construction last December 2022 and is expected to be completed by December 2025. It shall deliver 518 MLD.</p>	
Project Preparation	7	Project scope (main output)	<p>The New Centennial Water Supply-Kaliwa Dam Project involves the following main outputs: (1) The construction of a dam structure in Barangay Pagsangahan, General Nakar, Quezon, and Barangay Magsaysay, Infanta, Quezon. The dam will have a height of 60 meters and an initial supply capacity of 600</p>	5	<p>Phase 1 of the project or the Tayabasan Wier is comprised of three components namely a weir, pumping station, and a buried water pipeline. The weir serves as a barrier across the width off a river that alters and controls the flow of water and results in a change in the height of the river level. This is also where water is impounded. The pumping station shall bring the bulk water to the treatment plant while the buried water pipeline is where the water</p>	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
			<p>million liters per day. It will include features such as a spillway, diversion tunnels, low-level outlet, and reservoir. The dam's capacity will be 57 cubic meters. (2) The construction of a tunnel with a diameter of 4 m and a length of 27.70 km. The tunnel will have a depth ranging from 70 meters at the lowest peak to 500 m at the highest peak. (3) The establishment of water treatment plants.</p>		<p>passes to reach the plant. Phase 2 of the project or the Upper Wawa Dam has a water storage capacity of 120.1 million cubic meters (MCM). It has an estimated catch area of 242 km² and shall involve the construction of an 84-meter high dam . It shall also feature a flood control component which will be able to hold 43.7 MCM of flood water.</p>	
	8	Environmental impact	<p>The New Centennial Water Supply-Kaliwa Dam Project is associated with various environmental impacts, which include: (1) Modification of the land and water terrain, resulting in soil displacement and erosion; (2) Potential deterioration of river water quality; (3) Adverse effects on wildlife, such as species death, disturbance, and displacement, as well as destruction or damage to their habitats; (4) Disturbance of aquatic habitats, leading to the temporary displacement or death of species; (5) Increase in the generation of solid waste; and (6) Permanent loss or disturbance of existing vegetation.</p>	5	<p>The joint venture conducted an Environmental Impact Assessment (EIA) and obtained an Environment Compliance Certificate (ECC) from the Department of Environment and Natural Resources (DENR).</p>	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
	9	Land and settlement impact	The New Centennial Water Supply-Kaliwa Dam Project has land and settlement impacts, which include: (1) Loss of land and farming areas, properties, crops, and community facilities, along with the displacement and loss of income caused by the acquisition of Right-of-Way; (2) Portions of the project area fall within the ancestral domain (AD) of the Dumagat Remontado Indigenous Peoples (IPs); (3) and the ancestral domains encompass the Kaliwa Watershed and its river systems, which contain sacred and ritual sites, as well as serve as a source of drinking water.	4	In July 2020, the joint venture has won the approval of the Dumagat and Remontado indigenous peoples (IPs) of Antipolo. The company engaged the IP community in negotiations and was able to forge a Memorandum of Agreement (MOA) illustrating the community's support and approval of the construction of the Wawa Bulk Water Supply Project – Tayabasan Multi-Basin System. In March 2022, Wawa JVCo Inc., obtained the approval from Dumagat or Remontado indigenous peoples (IPs) of Antipolo and Montalban for the development and construction of the Upper Wawa Dam, the second phase of the Water Bulk Water Supply project. The negotiation and the signing of the memorandum of agreement (MOA) between the company and the IPs were held at the Kaysakat National High School in Barangay San Jose, Antipolo City in March 17, 2022 and in Phase 1B Gymnasium, Kasiglahan Village, Rodriguez in March 23, 2022. The event marks the fourth and final MOA in the Free and Prior, Informed Consent (FPIC) process of the project.	6
	10	Contact details	4th Floor, Administration Building, MWSS Complex, 489 Katipunan Avenue, Balara, Quezon City, 1105 Landline : 8920-55-21 E-mail: info@mwss.gov.ph; dcc@mwss.gov.ph	4	16F Three E-Com Center, Block 21, Bayshore Drive cor. Ocean Drive, Mall of Asia Complex, Pasay 1300 (02) 83965320	6
	11	Funding sources	Official Development Assistance (ODA); Export-Import Bank of China	5	Public-Private Partnership	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
Project Completion	12	Project budget	PHP 12.189 Billion	5	The project, with a total funding of PHP 26 billion, is solely funded by Wawa JVCo through a loan from Banco de Oro (BDO) Unibank Inc. and equity from Mr. Enrique K. Razon. According to Mr. Tan, 80% of the budget comes from the BDO loan while 20% is funded by Mr. Razon.	5
	13	Project budget approval date	Approved by the NEDA Board of the NCWS-KDP under Official Development Assistance (ODA) from China on 27 June 2017	5	August 06, 2019	5
	14	Project status (current)	As of February 2023, the Kaliwa Dam project in Rizal and Quezon provinces is 22% complete, according to the Metropolitan Waterworks and Sewerage System (MWSS).	3	Phase 1 - Completed and operational Phase 2 - Under construction	5
	15	Completion cost (projected)	PHP 12.189 Billion	5	The project, with a total funding of PHP 26 billion, is solely funded by Wawa JVCo through a loan from Banco de Oro (BDO) Unibank Inc. and equity from Mr. Enrique K. Razon. According to Mr. Tan, 80% of the budget comes from the BDO loan while 20% is funded by Mr. Razon.	5
	16	Completion date (projected)	On February 2023, MWSS administrator Leonor C. Cleofas said the goal is to finish the Kaliwa Dam by the end of 2026 and start operations by 2027.	4	Phase 1 - Target completion (2021) Revised target completion (October 2022); Actual completion (July 2022) Phase 2 - Completed by December 2025	6
	17	Scope at completion		0	Phase 1 of the project or the Tayabasan Wier is comprised of three components namely a weir, pumping station, and a buried water pipeline.	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
					<p>The weir serves as a barrier across the width of a river that alters and controls the flow of water and results in a change in the height of the river level. This is also where water is impounded. The pumping station shall bring the bulk water to the treatment plant while the buried water pipeline is where the water passes to reach the plant.</p> <p>Phase 2 of the project or the Upper Wawa Dam has a water storage capacity of 120.1 million cubic meters (MCM). It has an estimated catch area of 242 km² and shall involve the construction of an 84-meter high dam. It shall also feature a flood control component which will be able to hold 43.7 MCM of flood water.</p>	
	18	Reasons for project changes	<p>The project initially had a target completion date of 2023. However, delays caused by communist insurgents and challenges in obtaining necessary permits required by the Department of Environment and Natural Resources (DENR) and National Commission on Indigenous Peoples (NCIP), have led to a revised timeline. As a result, the project is now expected to be completed by June 2026, with operations scheduled to commence in 2027. The total project cost of the NCWS-KDP currently stands at PHP 12.25 billion after it was reduced from the initial PHP 18.72 billion by</p>	3	<p>Initially scheduled to be completed in 2021, Prime Infra announced in November 2019 an unforeseen delay in delivering water to Metro Manila from Wawa dam due to delays in government approval of the project. The company had to also wait for the final approval of the project from the MWSS.</p> <p>Mr. Tan also said that they experienced delays during the height of the COVID-19 pandemic due to mobility restrictions imposed during the lockdowns. This affected the mobility of human resources and equipment, and the delivery of supplies. However, the phase 1 of the project was still completed ahead of the revised schedule.</p>	4

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
			NEDA in 2019. The NEDA's Investment Coordination Committee (ICC) not only revised the project's funding component but also changed the financing mode from a Public-Private Partnership (PPP) to an Official Development Assistance (ODA) loan from the Peoples' Republic of China. The approval of the ICC was later affirmed by the NEDA Board, led by then President Duterte.			
	19	Reference to audit and evaluation reports	2021 Consolidated Audit Report on Official Development Assistance-Funded Programs and Projects	4	Financial, and audit reports, as well as Securities and Exchange Commission (SEC) of Manila Water Company may be found in the link on the "Link to information" column.	6
Contract Phase	20	Contract information		0	Offtake Agreement - The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement (the "Term"). The Term shall be divided into two (2) phases: Phase 1 and Phase 2. Phase 1 of this Agreement shall commence on the Signing Date and end on May 6, 2037 ("Phase 1"), provided that Phase 1 shall be extended in the event that MWCI secures an extension of its concession from MWSS. Phase 2 of this Agreement shall commence either on May 7, 2037 or the end of the extended Concession of MWCI, and end on the Expiry Date ("Phase 2").	6

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
Procurement	21	Procuring entity	Metropolitan Waterworks and Sewerage System (MWSS)	4	WawaJVCO Inc	6
	22	Procuring entity contact details	4th Floor, Administration Building, MWSS Complex, 489 Katipunan Avenue, Balara, Quezon City, 1105	4	16F Three E-Com Center, Block 21, Bayshore Drive cor. Ocean Drive, Mall of Asia Complex, Pasay 1300 (02) 83965320	6
	23	Procurement process	National Competitive Bidding Process	2	National competitive bidding	6
	24	Contract type	Detailed Engineering and Design and Construction	2	Design & Build	6
	25	Contract status (current)		0	Active	6
	26	Number of firms tendering	3 (China Energy Engineering Corporation, Power Construction Corporation of China Limited and Consortium of Guangdong Foreign Construction)	2	No available information	0
	27	Cost estimate	During the website's latest update, no information was available publicly.	0	PHP 15 - 20 billion	6
	28	Contract administration entity		0	Not applicable	0
	29	Contract title	NCWS-KDP 001-2018	4	Raw Water Supply Offtake Agreement	6
	30	Contract firm(s)	China Energy Engineering Corporation Limited (CEEC)	4	WawaJVCO Inc	6
	31	Contract price	Total Contract Loan: USD 211,214,646.54. Actual contract price with CEEC is not available.	3	Philippine Peso	5

Project Phase	Item	Project Information	New Centennial Water Source Kaliwa Dam Project (NCWS-KDP)	Score	Wawa Bulk Water Supply Project-Upper Wawa Dam (WBWSP-UWD)	Score
Implementation	32	Contract scope of work	Not Available	0	The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement the "Term"	6
	33	Contract start date and duration	Not Available	0	The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement the "Term"	6
	34	Variation to contract price	Not Available	0	No available information	0
	35	Escalation of contract price	Not Available	0	No available information	0
	36	Variation to contract duration	Not Available	0	No available information	0
	37	Variation to contract scope	Not Available	0	No available information	0
	38	Reasons for price changes	Not Available	0	No available information	0
	39	Reasons for scope & duration changes	Not Available	0	No available information	0
Total				104		
Average				2.67		

Legend:

6	Information available on the website of the host-government or the project owner in a fairly easy to understand format, and an official full document related to the data point is provided
5	Available on the websites of host-government or the project owner in a fairly easy to understand format and this website contain at least 10 other data points indicating the effort of the government to consolidate the information disclosure to the public
4	Available on the websites of host-government or the project owner in a fairly easy to understand format
3	Available on the websites of host-government or the project owner
2	Available on publicly available websites and uses host-country language or English
1	Available on publicly accessible websites
0	No information is available

Annex 2 . New Centennial Water Source - Kaliwa Dam Project

Project Phase	Item	Project Information	Definition	Score	Link to Information
Project Identification	1	Project owner	Metropolitan Waterworks and Sewerage System (MWSS)	4	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/
	2	Sector, subsector	Water Resources	4	https://www.neda.gov.ph/wp-content/uploads/2020/09/Revised-List-of-IFPs-as-of-19-August-2020.pdf
	3	Project name	New Centennial Water Source-Kaliwa Dam Project (NCWS-KDP)	4	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/
	4	Project location	The NCWS-KDP will be situated in Sitio Cablaog, Brgy. Pagsangahan, General Nakar, Quezon / Sitio Queborosa, Brgy. Magsaysay, Infanta, Quezon	4	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/
	5	Purpose	The purpose of the project is to ensure a backup water source and increase the supply of water to meet the growing demand in Metro Manila and nearby areas such as Cavite and Rizal. The New Centennial Water Supply Project or Kaliwa Dam Project aims to address the increasing water demand of Metro Manila, Rizal, and Quezon. These areas are home to approximately 17.46 million people or 3.49 million households. By constructing a new dam, the project intends to provide an additional water source and reduce the reliance on the Angat Dam.	5	https://emb.gov.ph/wp-content/uploads/2019/08/Kaliwa-Dam_EIS.pdf
	6	Project description	This project is designed to be "climate resilient" and is based on comprehensive studies conducted by the World Bank and the Japan International Cooperation Agency (JICA). It aligns with the Sustainable Development Goals (SDGs), particularly the goal of ensuring access to clean water supply. While	5	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/frequently-asked-questions/

Project Phase	Item	Project Information	Definition	Score	Link to Information
			there are other water sources available, the high cost of treatment makes them less feasible. Reliance on Kaliwa, Kanan, and Agos rivers has been identified as a means to achieve water security.		
Project Preparation	7	Project scope (main output)	The New Centennial Water Supply-Kaliwa Dam Project involves the following main outputs: (1) The construction of a dam structure in Barangay Pagsangahan, General Nakar, Quezon, and Barangay Magsaysay, Infanta, Quezon. The dam will have a height of 60 meters and an initial supply capacity of 600 million liters per day. It will include features such as a spillway, diversion tunnels, low-level outlet, and reservoir. The dam's capacity will be 57 cubic meters. (2) The construction of a tunnel with a diameter of 4 m and a length of 27.70 km. The tunnel will have a depth ranging from 70 meters at the lowest peak to 500 m at the highest peak. (3) The establishment of water treatment plants.	5	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/frequently-asked-questions/
	8	Environmental impact	The New Centennial Water Supply-Kaliwa Dam Project is associated with various environmental impacts, which include: (1) Modification of the land and water terrain, resulting in soil displacement and erosion; (2) Potential deterioration of river water quality; (3) Adverse effects on wildlife, such as species death, disturbance, and displacement, as well as destruction or damage to their habitats; (4) Disturbance of aquatic habitats, leading to the temporary displacement or death of species; (5) Increase in the generation of solid waste; and (6) Permanent loss or disturbance of existing vegetation.	5	https://emb.gov.ph/wp-content/uploads/2019/08/Kaliwa-Dam_EIS.pdf
	9	Land and settlement impact	The New Centennial Water Supply-Kaliwa Dam Project has land and settlement	5	http://eia.emb.gov.ph/wp-content/uploads/2019/09/ESP-in-

Project Phase	Item	Project Information	Definition	Score	Link to Information
Project completion			impacts, which include: (1) Loss of land and farming areas, properties, crops, and community facilities, along with the displacement and loss of income caused by the acquisition of Right-of-Way; (2) Portions of the project area fall within the ancestral domain (AD) of the Dumagat Remontado Indigenous Peoples (IPs); (3) and the ancestral domains encompass the Kaliwa Watershed and its river systems, which contain sacred and ritual sites, as well as serve as a source of drinking water.		English.pdf
	10	Contact details	4th Floor, Administration Building, MWSS Complex, 489 Katipunan Avenue, Balara, Quezon City, 1105	4	https://mwss.gov.ph/contact/
	11	Funding sources	Official Development Assistance (ODA): Export-Import Bank of China	5	https://www.dof.gov.ph/download/kaliwadam-project-loan-agreement/?wpdmdl=23115&refresh=6076e831429111618405425
	12	Project budget	PHP 12.189 Billion	5	https://www.dof.gov.ph/download/kaliwadam-project-loan-agreement/?wpdmdl=23115&refresh=6076e831429111618405425
	13	Project budget approval date	Approved by the NEDA Board of the NCWS-KDP under Official Development Assistance (ODA) from China on 27 June 2017	5	
	14	Project status (current)	As of February 2023, the Kaliwa Dam project in Rizal and Quezon provinces is 22% complete, according to the Metropolitan Waterworks and Sewerage System (MWSS).	3	https://www.bworldonline.com/
	15	Completion cost (projected)	PHP 12.189 Billion	5	https://www.dof.gov.ph/download/kaliwadam-project-loan-agreement/?wpdmdl=23115&refresh=6076e831429111618405425

Project Phase	Item	Project Information	Definition	Score	Link to Information
	16	Completion date (projected)	On February 2023, MWSS administrator Leonor C. Cleofas said the goal is to finish the Kaliwa Dam by the end of 2026 and start operations by 2027.	4	https://www.bworldonline.com/
	17	Scope at completion		0	
	18	Reasons for project changes	The project initially had a target completion date of 2023. However, delays caused by communist insurgents and challenges in obtaining necessary permits required by the Department of Environment and Natural Resources (DENR) and National Commission on Indigenous Peoples (NCIP), have led to a revised timeline. As a result, the project is now expected to be completed by June 2026, with operations scheduled to commence in 2027. The total project cost of the NCWS-KDP currently stands at PHP 12.25 billion after it was reduced from the initial PHP 18.72 billion by NEDA in 2019. The NEDA's Investment Coordination Committee (ICC) not only revised the project's funding component but also changed the financing mode from a Public-Private Partnership (PPP) to an Official Development Assistance (ODA) loan from the Peoples' Republic of China. The approval of the ICC was later affirmed by the NEDA Board, led by then President Duterte.	3	https://www.bworldonline.com/editors-
	19	Reference to audit and evaluation reports	2021 Consolidated Audit Report on Official Development Assistance-Funded Programs and Projects	4	https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjexZq38fj-AhXnyqACHawBAfcQFnoECCoQAQ&url=https%3A%2F%2Fwww.coa.gov.
Contract Phase Procurement	20	Contract information		0	

Project Phase	Item	Project Information	Definition	Score	Link to Information
	21	Procuring entity	Metropolitan Waterworks and Sewerage System (MWSS)	4	https://mwss.gov.ph/our-corporate-profile/
	22	Procuring entity contact details	4th Floor, Administration Building, MWSS Complex, 489 Katipunan Avenue, Balara, Quezon City, 1105	4	https://mwss.gov.ph/contact/
	23	Procurement process	National Competitive Bidding Process	2	https://www.philstar.com/
	24	Contract type	Detailed Engineering and Design and Construction	2	https://mb.com.ph/2020/09/09/coa-questions-technicalities-in-kaliwa-dam-project/
	25	Contract status (current)		0	
	26	Number of firms tendering	3 (China Energy Engineering Corporation, Power Construction Corporation of China Limited and Consortium of Guangdong Foreign Construction)	2	https://business.inquirer.net/277187/p18-7-b-kaliwa-dam-project-a-negotiated-deal-says-coa
	27	Cost estimate	During the website's latest update, no information was available publicly.	0	
	28	Contract administration entity		0	
	29	Contract title	NCWS-KDP 001-2018	4	https://www.dof.gov.ph/download/kaliwa-dam-project-loan-agreement/?wpdmdl=23115&refresh=6076e831429111618405425
	30	Contract firm(s)	China Energy Engineering Corporation Limited (CEEC)	4	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/frequently-asked-questions/
	31	Contract price	Total Contract Loan: USD 211,214,646.54. Actual contract price with CEEC is not available.	3	https://mwss.gov.ph/projects/new-centennial-water-source-kaliwa-dam-project/
	32	Contract scope of work	Not Available	0	
	33	Contract start date and duration	Not Available	0	

Project Phase	Item	Project Information	Definition	Score	Link to Information
Implementation	34	Variation to contract price	Not Available	0	
	35	Escalation of contract price	Not Available	0	
	36	Variation to contract duration	Not Available	0	
	37	Variation to contract scope	Not Available	0	
	38	Reasons for price changes	Not Available	0	
	39	Reasons for scope & duration changes	Not Available	0	
Total				104	
Average				2.67	

Legend:

6	Information available on the website of the host-government or the project owner in a fairly easy to understand format, and an official full document related to the data point is provided
5	Available on the websites of host-government or the project owner in a fairly easy to understand format and this website contain at least 10 other data points indicating the effort of the government to consolidate the information disclosure to the public
4	Available on the websites of host-government or the project owner in a fairly easy to understand format
3	Available on the websites of host-government or the project owner
2	Available on publicly available websites and uses host-country language or English
1	Available on publicly accessible websites
0	No information is available

Annex 3 . Wawa Bulk Water Supply Project

Project Phase	Item	Project Information	Definition	Score	Link to Information
Project Identification	1	Project owner	WawaJVCO Inc	6	https://primeinfra.ph/portfolio/wawa-jvco/
	2	Sector, subsector	Infrastructure - Water	6	https://primeinfra.ph/portfolio/wawa-jvco/
	3	Project name	Wawa Bulk Water Supply Project	6	https://primeinfra.ph/portfolio/wawa-jvco/
	4	Project location	It is in Barangay Calawis in Antipolo City, Barangay Pintong Bukawe, San Mateo, and Barangay San Rafael, Rodriguez in the province of Rizal. The location is considered a protected area under Presidential Proclamation No 294 dated November 24, 2011 and will cover the river systems of Wawa River, Montalban River, Boso-Boso River, Payagwan River, Tayabasan River, and Sapa Bute-Bute River.	6	https://eia.emb.gov.ph/wp-content/uploads/2020/12/Executive-Summary-for-Public-ESP_English.pdf
	5	Purpose	The project aims to address the water crisis in Metro Manila and the province of Rizal, the problems of flooding in downstream communities during typhoons, and to help protect the eastern part of Metro Manila, including Pasig City and Marikina City, and Rizal province. It aims to provide at least 518 million liters per day which shall increase the water capacity of Manila Water Company by over 30 percent.	6	https://primeinfra.ph/portfolio/wawa-jvco/
	6	Project description	The project is composed of two (2) phases. Phase 1 or the Tayabasan Weir is a 25-meter-roller compacted concrete structure designed to deliver 80 MLD. It has been operational since July 2022. Phase 2 or the Upper Wawa Dam began construction last December 2022 and is expected to be completed by December 2025. It shall deliver 518 MLD.	6	https://eia.emb.gov.ph/wp-content/uploads/2020/12/Executive-Summary-for-Public-ESP_English.pdf ; Document shared by WawaJVCo

Project Phase	Item	Project Information	Definition	Score	Link to Information
Project Preparation	7	Project scope (main output)	<p>Phase 1 of the project or the Tayabasan Wier is comprised of three components namely a weir, pumping station, and a buried water pipeline. The weir serves as a barrier across the width off a river tat alters and controls the flow of water and results in a change in the height of the river level. This is also where water is impounded. The pumping station shall bring the bulk water to the treatment plant while the buried water pipeline is where the water passes to reach the plant.</p> <p>Phase 2 of the project or the Upper Wawa Dam has a water storage capacity of 120.1 million cubic meters (MCM). It has an estimated catch area of 242 km² and shall involve the construction of an 84-meter high dam . It shall also feature a flood control component which will be able to hold 43.7 MCM of flood water.</p>	6	https://primeinfra.ph/portfolio/wawa-jvco/ ; https://primeinfra.ph/wawajvco-inaugurates-first-phase-of-bulk-water-supply-project/ ; https://www.bworldonline.com
	8	Environmental impact	The joint venture conducted an Environmental Impact Assessment (EIA) and obtained an Environment Compliance Certificate (ECC) from the Department of Environment and Natural Resources (DENR).	6	https://eia.emb.gov.ph/wp-content/uploads/2020/12/Notice-PH-WawaJVCo-Inc.pdf ; https://eiais.emb.gov.ph/internal/Secured/Uploads/ECC/de9c86c2-bd0d-4387-9a8e-ca7b614f162b.pdf ;
	9	Land and settlement impact	<p>In July 2020, the joint venture has won the approval of the Dumagat and Remontado indigenous peoples (IPs) of Antipolo. The company engaged the IP community in negotiations and was able to forge a Memorandum of Agreement (MOA) illustrating the community's support and approval of the construction of the Wawa Bulk Water Supply Project – Tayabasan Multi-Basin System.</p> <p>In March 2022, Wawa JVCo Inc., obtained the approval from Dumagat or Remontado indigenous peoples (IPs) of Antipolo and Montalban for the development and</p>	5	https://primeinfra.ph/prime-infras-wawajvco-secures-ip-approval/ ; https://www.bworldonline.com/

Project Phase	Item	Project Information	Definition	Score	Link to Information
			<p>construction of the Upper Wawa Dam, the second phase of the Water Bulk Water Supply project.</p> <p>The negotiation and the signing of the memorandum of agreement (MOA) between the company and the IPs were held at the Kaysakat National High School in Barangay San Jose, Antipolo City in March 17, 2022 and in Phase 1B Gymnasium, Kasiglahan Village, Rodriguez in March 23, 2022. The event marks the fourth and final MOA in the Free and Prior, Informed Consent (FPIC) process of the project.</p>		
	10	Contact details	16F Three E-Com Center, Block 21, Bayshore Drive cor. Ocean Drive, Mall of Asia Complex, Pasay 1300 (02) 83965320	6	https://primeinfra.ph/contact-us/
	11	Funding sources	Public-Private Partnership	6	https://neda.gov.ph/wp-content/uploads/2023/05/Overview-of-the-Infrastructure-Flagship-Projects-under-the-Build-Better-More-Program.pdf ; https://eia.emb.gov.ph/wp-content/uploads/2020/12/Executive-Summary-for-Public-ESP_English.pdf ; https://primeinfra.ph/wawa-water-supply-project-financing-wins-water-deal-of-the-year/
	12	Project budget	The project, with a total funding of PHP 26 billion, is solely funded by Wawa JVCo through a loan from Banco de Oro (BDO) Unibank Inc. and equity from Mr. Enrique K. Razon. According to Mr. Tan, 80% of the budget comes from the BDO loan while 20% is funded by Mr. Razon.	5	https://www.bworldonline.com/editors-
	13	Project budget approval date	August 06, 2019	5	https://edge.pse.com.ph/downloadHtml.do?file_id=612699 ; https://www.bworldonline.com/

Project Phase	Item	Project Information	Definition	Score	Link to Information
Project Completion	14	Project status (current)	Phase 1 - Completed and operational Phase 2 - Under construction	5	https://primeinfra.ph/portfolio/wawa-jvco/ ; https://www.bworldonline.com/
	15	Completion cost (projected)	The project, with a total funding of PHP 26 billion, is solely funded by Wawa JVCo through a loan from Banco de Oro (BDO) Unibank Inc. and equity from Mr. Enrique K. Razon. According to Mr. Tan, 80% of the budget comes from the BDO loan while 20% is funded by Mr. Razon.	5	https://www.bworldonline.com/editors-
	16	Completion date (projected)	Phase 1 - Target completion (2021) Revised target completion (October 2022); Actual completion (July 2022) Phase 2 - Completed by December 2025	6	https://www.bworldonline.com/
	17	Scope at completion	Phase 1 of the project or the Tayabasan Wier is comprised of three components namely a weir, pumping station, and a buried water pipeline. The weir serves as a barrier across the width of a river that alters and controls the flow of water and results in a change in the height of the river level. This is also where water is impounded. The pumping station shall bring the bulk water to the treatment plant while the buried water pipeline is where the water passes to reach the plant. Phase 2 of the project or the Upper Wawa Dam has a water storage capacity of 120.1 million cubic meters (MCM). It has an estimated catch area of 242 km ² and shall involve the construction of an 84-meter high dam. It shall also feature a flood control component which will be able to hold 43.7 MCM of flood water.	6	https://primeinfra.ph/portfolio/wawa-jvco/ ; https://primeinfra.ph/wawajvco-inaugurates-first-phase-of-bulk-water-supply-project/ ; https://www.bworldonline.com/
	18	Reasons for project changes	Initially scheduled to be completed in 2021, Prime Infra announced in November 2019 an unforeseen delay in delivering water to Metro Manila from Wawa dam due to delays in government approval	4	https://www.bworldonline.com/editors-

Project Phase	Item	Project Information	Definition	Score	Link to Information
			<p>of the project. The company had to also wait for the final approval of the project from the MWSS.</p> <p>Mr. Tan also said that they experienced delays during the height of the COVID-19 pandemic due to mobility restrictions imposed during the lockdowns. This affected the mobility of human resources and equipment, and the delivery of supplies. However, the phase 1 of the project was still completed ahead of the revised schedule.</p>		
	19	Reference to audit and evaluation reports	Financial, and audit reports, as well as Securities and Exchange Commission (SEC) of Manila Water Company may be found in the link on the "Link to information" column.	6	https://edge.pse.com.ph/companyDisclosures/form.do?cmpy_id=270 ; https://edge.pse.com.ph/companyPage/financial_reports_view.do?cmpy_id=270
Contract Phase	20	Contract information	<p>Offtake Agreement - The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement (the "Term"). The Term shall be divided into two (2) phases: Phase 1 and Phase 2. Phase 1 of this Agreement shall commence on the Signing Date and end on May 6, 2037 ("Phase 1"), provided that Phase 1 shall be extended in the event that MWCI secures an extension of its concession from MWSS. Phase 2 of this Agreement shall commence either on May 7, 2037 or the end of the extended Concession of MWCI, and end on the Expiry Date ("Phase 2").</p>	6	https://documents1.worldbank.org/curated/
Procurement	21	Procuring entity	WawaJVCO Inc	6	https://primeinfra.ph/contact-us/
	22	Procuring entity contact details	16F Three E-Com Center, Block 21, Bayshore Drive cor. Ocean Drive, Mall of Asia Complex, Pasay 1300 (02) 83965320	6	https://primeinfra.ph/contact-us/

Project Phase	Item	Project Information	Definition	Score	Link to Information
	23	Procurement process	National competitive bidding	6	https://www.bworldonline.com/top-
	24	Contract type	Design & Build	6	https://www.phcc.gov.ph/commission-decision-no-40-m-0482017-joint-venture-prime-metro-power-holdings-corporation-san-lorenzo-ruiz-piat-energy-water-inc/
	25	Contract status (current)	Active	6	https://primeinfra.ph/portfolio/wawa-jvco/
	26	Number of firms tendering	No available information	0	
	27	Cost estimate	PHP 15 - 20 billion	6	https://www.sanlorenzoruil.com/water.php
	28	Contract administration entity	Not applicable	0	
	29	Contract title	Raw Water Supply Offtake Agreement	6	https://edge.pse.com.ph/downloadHtml.do?file_id=612699
	30	Contract firm(s)	WawaJVCO Inc	6	https://www.phcc.gov.ph/commission-decision-no-40-m-0482017-joint-venture-prime-metro-power-holdings-corporation-san-lorenzo-ruiz-piat-energy-water-inc/
	31	Contract price	Philippine Peso	5	https://www.bworldonline.com/editors-
	32	Contract scope of work	The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement the "Term"	6	https://documents1.worldbank.org/curated/
	33	Contract start date and duration	The agreement commenced on August 6, 2019, and shall terminate at the end of thirty (30) years or unless sooner terminated or renewed under the provisions of this Agreement the "Term"	6	https://documents1.worldbank.org/curated/

Project Phase	Item	Project Information	Definition	Score	Link to Information
Implementation	34	Variation to contract price	No available information	0	
	35	Escalation of contract price	No available information	0	
	36	Variation to contract duration	No available information	0	
	37	Variation to contract scope	No available information	0	
	38	Reasons for price changes	No available information	0	
	39	Reasons for scope & duration changes	No available information	0	
Total				178	
Average				4,56	

Legend:

6	Information available on the website of the host-government or the project owner in a fairly easy to understand format, and an official full document related to the data point is provided
5	Available on the websites of host-government or the project owner in a fairly easy to understand format and this website contain at least 10 other data points indicating the effort of the government to consolidate the information disclosure to the public
4	Available on the websites of host-government or the project owner in a fairly easy to understand format
3	Available on the websites of host-government or the project owner
2	Available on publicly available websites and uses host-country language or English
1	Available on publicly accessible websites
0	No information is available

ACKNOWLEDGMENTS

The Stratbase ADR Institute extends its deepest gratitude to all involved in developing this strategic agenda. This publication would not have been possible without your commitment, collaboration, and support.

The strength of this strategic agenda comes not from any single policy. Rather, it draws from the collective insight of our expert authors from the academe, public and private sectors, and civil society. Hence, we are grateful for our authors' generous sharing of knowledge and experiences that make up this strategic agenda.

We would especially like to thank Prof. Victor Andres 'Dindo' Manhit, President of the Stratbase ADR Institute, for this initiative would never have come to fruition without his leadership, vision, and direction.

Finally, we would like to thank the tireless and dedicated members of the Stratbase ADR Institute;

Our design consultant, Ms. Carol Manhit, for the publication layout and cover design;

Stratbase ADR Institute's leadership team, led by Deputy Executive Director for Programs and External Affairs, Ms. Krystyna Louise C. Dy, Deputy Executive Director for Research, Dr. Jimmy Jimenez; for their guidance;

And our research team, led by Research Manager Venice Isabelle Rañosa, Ma. Katrina Guerrero, our Senior Research and Program Associate, and Miguel Huang, our Program and Research Associate, for their diligence and hard work.

ABOUT THE AUTHORS

Prof. Victor Andres “Dindo” C. Manhit

President

Stratbase ADR Institute

Prof. Victor Andres “Dindo” C. Manhit is the Founder and CEO of The Stratbase Group, a research and strategic advisory consultancy firm, and President of its policy think-tank, Stratbase Albert del Rosario Institute for Strategic and International Studies (ADRI).

Since he founded The Stratbase Group in 2004, he has provided top-level strategic analysis and thought leadership on global issues in the Philippines. As a strategic adviser, he identified investment and business opportunities, gathered critical intelligence to overcome regulatory challenges, and developed deep relationships in key departments and agencies.

His research interest and field of specialization led him to pursue active involvement in legislation, bureaucratic work, and civil society advocacy. Among the government positions he held include being Undersecretary for External Affairs and Special Concerns of the Department of Education, Culture, and Sports and a Deputy Secretary for Administration and Financial Services of the Philippine Senate. After his stint in government, he became involved with different consortiums and networks of civil society groups. His civil society initiatives range from governance reform to environmental stewardship, as Lead Convenor of the citizen-led initiative, Democracy Watch Philippines, and Convenor of the pro-industry group, Philippine Business for Environmental Stewardship (PBEST).

Today, he regularly contributes opinion pieces to leading newspapers, Philippine Daily Inquirer and BusinessWorld.

Rizal G. Buendia, Ph.D

Non-Resident Fellow

Stratbase ADR Institute

Dr. Buendia is an independent political analyst, consultant, and researcher in Southeast Asian Politics and International Development, Wales, UK, and a former Teaching Fellow at the Politics and International Studies Department and the Department of Development Studies, School of Oriental and African Studies (SOAS), University of London.

He authored the book, *Ethnicity and Sub-nationalist Independence Movements in the Philippines and Indonesia: Implications for Regional Security* (2002) and published four (4) major monographs on Bangsamoro, ASEAN, and regional geopolitics.

He is currently a member of the International Editorial Board of the *Asian Journal of Criminology* (Melbourne, Australia), Founding Member of the Asian Criminological Society (Beijing, China), and former Editor in Chief of the *Asia Pacific Social Science Journal*. He is also member of the Association for Asian Studies (AAS), Asian Political and International Studies Association (APISA), the International Political Science Association (IPSA), and the Phi Gamma Mu International Honor Society-Beta Chapter.

He obtained his Doctor of Philosophy (Ph.D.) degree in Political Science at the National University of Singapore (NUS) under the NUS by-research Ph.D. scholarship and earned his Master of Public Administration (MPA) with Highest Distinction at the University of the Philippines-Diliman (National College of Public Administration and Governance [NCPAG]).

The views, opinions and conclusions expressed in this paper are those of the authors and do not necessarily reflect those of the Institute or any of its officers and trustees.

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The Financial Tower
6794 Ayala Avenue
Makati City,
Philippines 1226

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