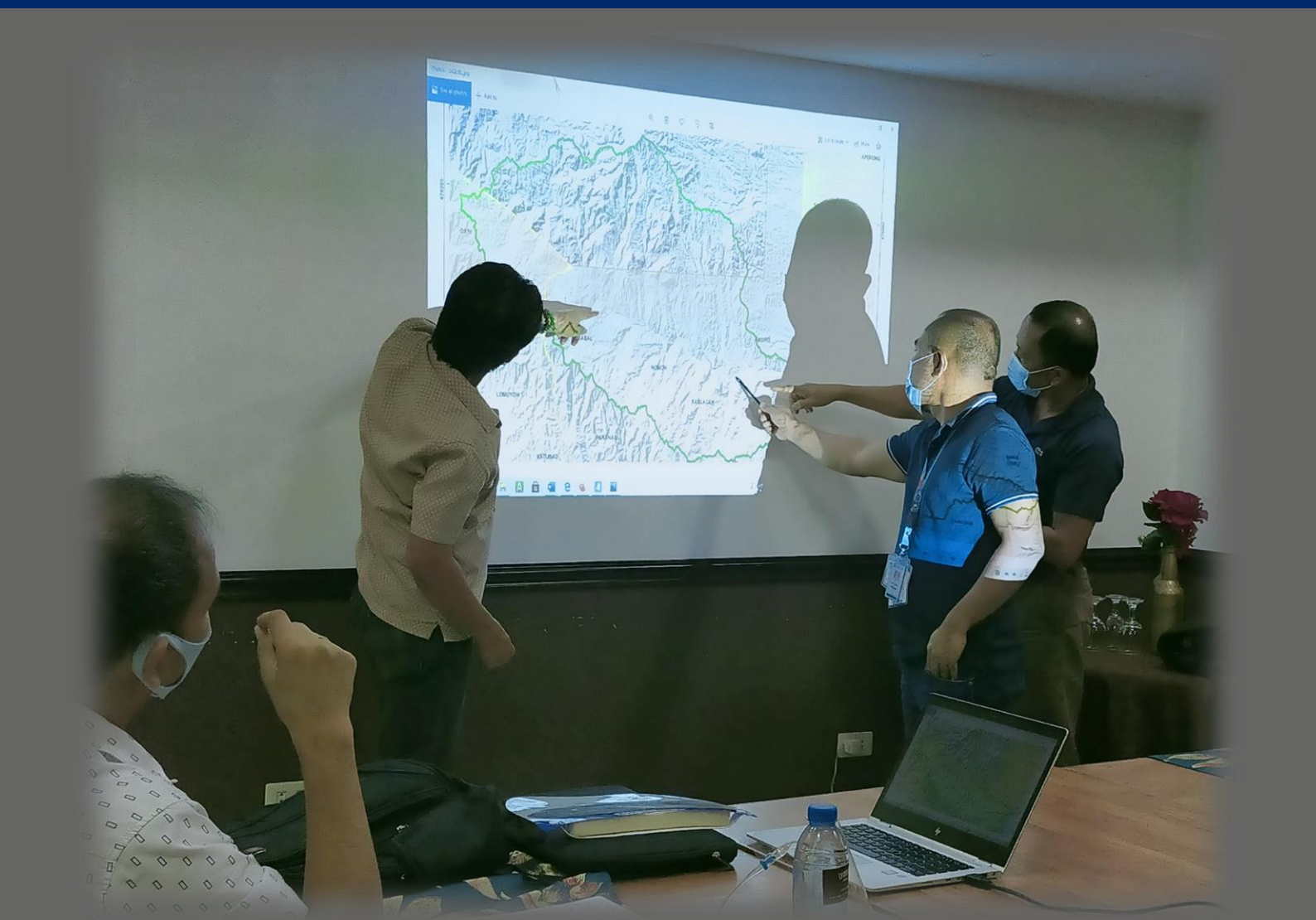




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USAID Philippines Safe Water Activity

# Baseline Assessment Report



**Contract No.:** 72049220D00002  
**Contract End Date:** December 1, 2024  
**Implemented by:** DAI Global LLC  
**March 2021**

This report was produced for review for USAID by the USAID Safe Water Activity, implemented by DAI.

## **PREFACE**

The United States Agency for International Development (USAID), through its Mission to the Philippines, has contracted DAI Global, LLC (DAI) as the implementing partner for the Safe Water (SW) activity under Contract No. 72049220D00002. The effective date of the contract is December 2, 2019 to December 1, 2024. DAI partners with five organizations—Orient Integrated Development Consultants, Inc.; Lutheran World Relief, Manila Observatory, Geosciences Foundation Inc., and CEST Inc.

This report presents the baseline assessment (base year 2019) of the water supply and sanitation services, and state of watersheds in the priority areas identified in Year 1 and 2 of the project. It also provides baseline information on the custom indicators of the project related to capacity development, governance and institutional strengthening.

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# ACRONYMS AND ABBREVIATIONS

|        |   |
|--------|---|
| AIP    | Annual Investment Plan                          |
| BACIWA | Bacolod City Water District                     |
| BDP    | Barangay Development Fund                       |
| BMRB   | Buayan-Malungon River Basin                     |
| BUB    | Bottom Up Budgeting                             |
| BWSA   | Barangay Water and Sanitation Association       |
| CBMS   | Community-Based Monitoring System               |
| CMS    | Central Management System                       |
| COVID  | Coronavirus Disease                             |
| CSO    | Civil Society Organization                      |
| DBP    | Development Bank of the Philippines             |
| DENR   | Department of Environment and Natural Resources |
| DILG   | Department of Interior and Local Government     |
| DOH    | Department of Health                            |
| DOT    | Department of Tourism                           |
| DPWH   | Department of Public Works and Highways         |
| DWR    | Department of Water Resources                   |
| EGS    | Ecosystem Goods and Services                    |
| FALGU  | Financial Assistance to LGUs                    |
| FAS    | Financial and Accounting System                 |
| FFPI   | Forest Foundation Philippines, Inc              |
| FGD    | Focus Group Discussion                          |
| GAD    | Gender and Development                          |
| GFPS   | Gender Focal Point System                       |
| GHG    | Greenhouse Gas                                  |
| GIS    | Geographic Information System                   |
| GSCWD  | General Santos City Water District              |
| GST    | Gender Sensitivity Training                     |
| IDI    | In-Depth Interview                              |
| IEC    | Information, Education, Communication           |
| IRR    | Implementing Rules and Regulations              |
| LGU    | Local Government Unit                           |
| LGSF   | Local Government Support Fund                   |

|        |   |
|--------|---|
| LWCP   | LGU Watershed Conservation Plan                       |
| LWUA   | Local Water Utilities Administration                  |
| MEL    | Monitoring, Evaluation and Learning                   |
| MFI    | Mahintana Foundation, Inc.                            |
| MFI    | Microfinance Institution                              |
| MLGU   | Municipal Local Government Unit                       |
| MOA    | Memorandum of Agreement                               |
| MOU    | Memorandum of Understanding                           |
| NEDA   | National Economic and Development Authority           |
| NG     | National Government                                   |
| NGO    | Non-Governmental Organizations                        |
| NWRB   | National Water Resources Board                        |
| ODA    | Official Development Assistance                       |
| PAMB   | Protected Area Management Board                       |
| PAWD   | Philippine Association of Water Districts             |
| PCSD   | Palawan Council for Sustainable Development           |
| PES    | Payment for Ecosystem Services                        |
| PO     | People's Organization                                 |
| PPA    | Program, Projects and Activities                      |
| PPC    | Puerto Princesa City                                  |
| PPCWD  | Puerto Princesa City Water District                   |
| PWSF   | Provincial Water Security Framework                   |
| PWSSMP | Philippine Water Supply and Sanitation Master Plan    |
| RHubs  | Regional Water and Sanitation Hubs                    |
| RWSA   | Rural Water Supply Association                        |
| SDG    | Sustainable Development Goals                         |
| SEP    | Strategic Environmental Plan                          |
| SOW    | Scope of Work   |
| SpTP   | Septage Treatment Plant                               |
| STF    | Septage Treatment Facility                            |
| STTA   | Short-Term Technical Assistance                       |
| SURGE  | Strengthening Urban Resilience for Growth with Equity |
| SW/A   | Safe Water/ Safe Water Activity                       |
| TA     | Technical Assistance                                  |

|         |   |
|---------|---|
| TOR     | Terms of Reference                                      |
| TPWSMO  | Taytay Palawan Water System Management Operating Office |
| TWG     | Technical Working Group                                 |
| URAF    | Unified Resource Allocation Framework                   |
| USAID   | United States Agency for International Development      |
| USG     | United States Government                                |
| VAWC    | Violence against Women and Children                     |
| WASH    | Water, Sanitation and Hygiene                           |
| WASHFIN | Water, Sanitation and Hygiene Finance Project           |
| WC      | Watershed Council                                       |
| WD      | Water District  |
| WDM     | Water Demand Management                                 |
| WMC     | Watershed Management Council                            |
| WQM     | Water Quality Management                                |
| WRC     | Water Regulatory Commission                             |
| WRM     | Water Resource Management                               |
| WSP     | Water Service Providers                                 |
| WSS     | Water Supply and Sanitation                             |
| WWD     | World Water Day   |
| ZOD     | Zero Open Defecation                                    |



# EXECUTIVE SUMMARY

Safe Water (SW) is the flagship project of USAID in the Philippines for water and sanitation sector development. An [redacted] initiative over a five-year implementation period, from December 2019 to December 2024, SW project aims to improve the water security of water-stressed communities in the Philippines. Water security is characterized by: i) increased access of underserved or unserved communities to safe water supply and sanitation services; and ii) more sustainable water management of surface and groundwater resources to meet human, economic and ecosystem needs. The project has three inter-related objectives: increased access to resilient water supply and sanitation services; improved water resource management; and strengthened water sector governance. The project operates in Manila for national level activities and oversight of field offices and in three target sites, namely: Puerto Princesa City and Palawan Province, Bacolod City and Negros Occidental Province, and General Santos City and Sarangani Province.

The Safe Water Team started conducting the baseline assessment in July 2020. The overall objectives were understanding the (i) level of access and quality of water and sanitation services in the project sites (ii) state of water resources and how these are managed; and (iii) issues on water sector governance at the national and project site levels.

The Team worked with LGUs, Water Districts and other stakeholders from the project sites and with concerned oversight National Government Agencies (NGAs). Both quantitative and qualitative data were gathered through desk review of various secondary data from national and local surveys and documents, in-depth-interviews (IDIs) and focus groups discussions (FGDs). The study’s base year is 2019. The key findings of the baseline study according to objectives of the SW project are summarized as follows.

## Objective I: Increased Access to Climate Resilient Water and Sanitation Services

Safe Water will use an integrated approach that emphasizes technical assistance and capacity building for greater sustainability to achieve these overarching targets:

- 1.1 million people receiving improved water supply service quality
- 272,000 people gaining access to basic or safely managed sanitation services
- 1 million people benefiting from the adoption and implementation of measures to improve water resources management

In 2019, three quarters (76%) of the total population (4,332,131 out of 5,669,415) of the three focal provinces (including General Santos City) have access to limited, basic and safely managed drinking water services (Figure 1). The other 24%, comprising 1,337,284 people, collect water from unsafe and unreliable sources such as surface water (unprotected spring, river, stream, lake, rain water, others), and unimproved water services (tubed / piped shallow well, dug well, peddler, others). Twenty-nine (29) percent of

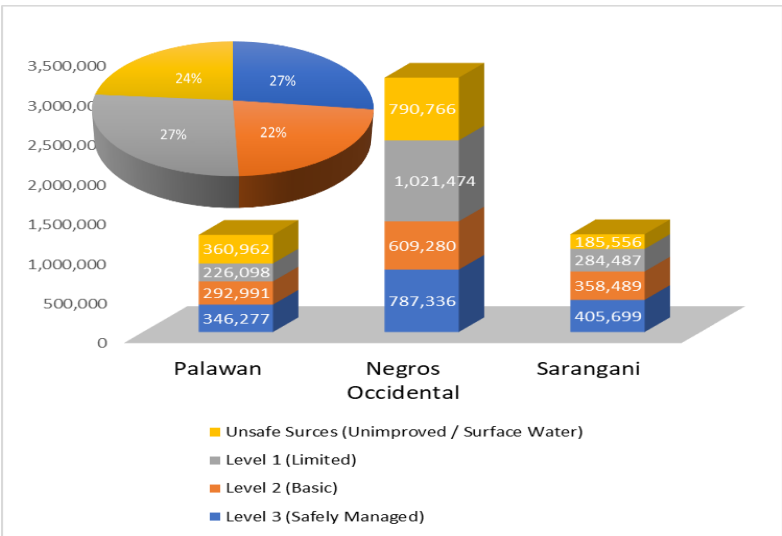


Figure 1: Breakdown of SW Covered Areas According to Access to Water by Type of Service (Number of People)

the population of Palawan, 25% for Negros Occidental and 15% for General Santos City and Sarangani are reliant on unimproved or surface water. Even those with access to basic / safely managed services suffer service quality issues. These quality issues include (i) poor water quality due to turbidity, high content of iron and manganese, and presence of e-coli particularly in some Level I water supply systems; (ii) intermittent service especially during peak hours; and (iii) low water pressure among others.

In terms of access to sanitation services, 77% or about 4.38 million people have access to limited, basic or safely managed sanitation services (Figure 2). The remaining, 1.3 million (23%) people, are using either unimproved sanitation facilities or practicing open defecation.

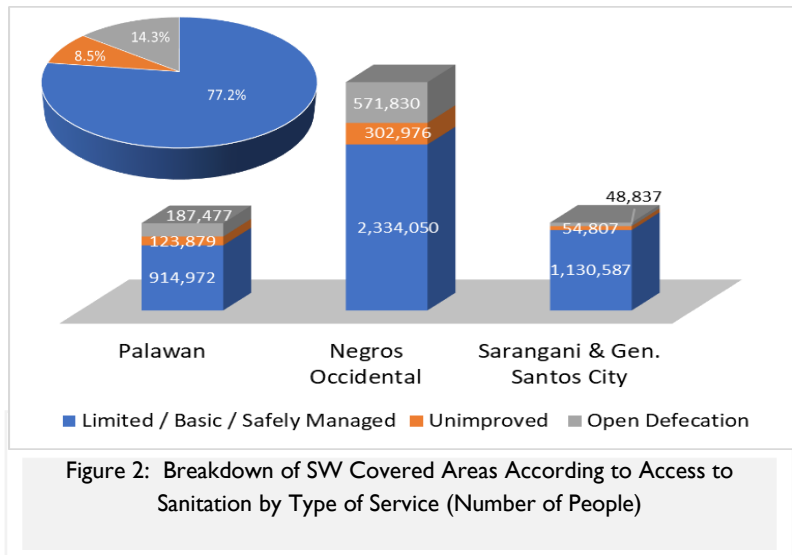
The key barriers to increasing access and improving quality of water and sanitation (WSS) services are (i) financial constraints of the LGUs, WDs / WSPs; (ii) inadequate technical capacity in the O&M of water supply systems; and (iii) low appreciation or knowledge of some consumers on the health

and economic costs of unsafe water and sanitation services. The pandemic has exacerbated resource constraints as LGUs and water service providers realigned funds to COVID 19 response; and as collection efficiency is reduced due to economic downturn. Also, the economic downturn resulted to reduced household incomes, which could affect investment decisions for water supply connections or improved sanitation facilities.

To increase the level of access and improve quality of WSS services, the key interventions identified by stakeholders include (i) assistance to LGUs, WDs and other WSPs to access financing from various financing windows, including compliance with the requirements for loan or grant applications; (ii) capacity building to LGUs, WDs and other WSPs on the O&M of water systems, project development (feasibility study, detailed engineering), utility management, formulation of business plans and ring-fencing, amongst others; (iii) Information and Education Campaign (IEC) to promote safe water supply, sanitation and hygiene; and (iv) establishing partnerships with private sector or CSOs with common goals for WSS.

**Objective 2: Improved sustainable management of water resources**

The management of water resources is critical to water security. The Team will assist LGUs and other watershed stakeholders (watershed management council, People’s Organizations, Proponent Groups and others) develop and implement measures to conserve or rehabilitate watersheds to reduce the greenhouse gas (GHG) emissions in the watersheds that will be covered by the project. In 2019, the



total GHG emission incurred in the six (6) priority watersheds<sup>1</sup> covered by the assessment stood at 418,896 metric tons

The causes or drivers of deforestation that result in significant level of GHG emission include land conversion to sugar cane, banana, mango and other agricultural crops; firewood gathering and charcoal making; slash and burn farming; illegal cutting / timber poaching activities; quarrying; and increasing migration to upland areas. Perhaps, these practices have persisted because only 1% of the watersheds' areas is under improved management, and LGU investments for watershed protection is merely 0.6% of their annual budget.

The following are measures that can address deforestation issues, i.e., reforestation and agro-forestry, watershed management planning, enforcement of the Lawin Forest and Biodiversity Protection System, establishment of Ranger Stations for monitoring and enforcement, strengthening of community-based forest management peoples' organizations.

Moreover, the Watershed Management Councils (WMCs), which are critical to performing oversight functions in the management of a watersheds, are mostly inactive, and hence, need to be reorganized or reconstituted and capacitated in fulfilling their functions.

Relevant interventions to enable the LGUs, POs, and other WSS stakeholders to implement landscape activities include (i) formulation of watershed management plans, and relatedly, updating of forest land use plans; (ii) technical assistance to mobilize and develop project proposals for funding by local and national government; (iii) reactivation of WMCs (iv) understanding financing sources and how to access them; (v) assistance to develop additional forest protection measures or activities engaging the upland communities; and (iv) forging partnerships with private sector or CSOs.

### **Objective 3: Improved Water Sector Governance**

Under this objective, the Team will assist WSS institutions to strengthen the enabling environment of the sector. In particular, it will assist NEDA and other national government agencies implement the Philippine Water Supply and Sanitation Master Plan (PWSSMP) and the Unified Resource Allocation Framework, including advocacy and facilitation of WSS structural reform initiatives, such as the creation of the Department of Water Resources, Water Regulatory Commission or the National Water Resource Management Council. NEDA has identified key actions related to the Master Plan, prepared the operating plan for URAF, and drafted the Executive Order for the NWMC. The Team will help with the policy implementation instruments such as a NEDA Board Resolution for URAF and its implementing rules and regulations, coordination of the action plans of the Master Plan and the required investment program. Moreover, NEDA directed the Team to localize the implementation of the Master Plan's key reform areas in the project sites.

The baseline information for each of the project indicators is provided in Table I.

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<sup>1</sup> Watersheds that are identified as SW areas in Year 1, which comprise of Irawan and Montible watersheds in Palawan; Bago and Malogo 1 watersheds in Negros Occidental; and Buayan Malungon River Basin (BMRB) and Siguel watershed in Sarangani and General Santos City.

**Table 1: Safe Water Baseline Data Summary, 2019**

| Indicator Category   | Safe Water Project Indicators   | Baseline Figures / Information   |
|--|---|--|
| <b>Objective 1 (Increased Access to Climate Resilient Water and Sanitation Services)</b> |   |  |
| F-Indicator<br>HL.8.1-1<br>HL.8.1-2  | Outcome 1.1: Number of people gaining access to basic or safely managed drinking water services as a result of USG assistance.  | <b>2,800,072</b> out of 5,669,424 people (49%) in the target regions; of which 1.54 million (27%) and 1.26 million (22%) people accessing basic and safely managed drinking water services respectively.               |
| F-Indicator<br>HL.8.1-3  | Outcome 1.2: Number of people receiving improved service quality from an existing basic or safely managed drinking water service as a result of USG assistance.                                 | The universe for this indicator is 2,800,072 within the target regions. Existing WSS services have room for improvement.   |
| F-Indicator<br>HL.8.2-2<br>HL.8.2-3  | Outcome 1.3: Number of people gaining access to limited, basic or safely managed sanitation services as a result of USG assistance  | <b>4,379,609</b> out of 5,669,424 people (77%) in the target regions; of which 1,821,283 (32%), 2,556,952 (45%) and 1,375 (0.02%) people accessing limited, basic and safely managed sanitation services respectively. |
| F-Indicator<br>HL.8.2-7  | Outcome 1.4: Number of people receiving improved sanitation service quality from an existing "limited" or "basic" services as a result of USG assistance  | The achievement of the project will cover portion of the 1,129,212 people having access to either limited or basic sanitation services at baseline.  |
| Custom Indicator   | Intermediate Result 1.1: Number of WSPs with increased operational, technical and financial management capacity through Safe Water activities   | The baseline for this indicator is zero. Safe Water will prioritize its assistance to 188 water districts and LGU-run utilities.   |
| Custom Indicator   | Intermediate Result 1.2: Number of coordination mechanisms institutionalized at the local, watershed and regional levels through Safe Water activities  | Sixteen (16) coordination mechanisms in place in the Year 1 priority sites; however, effectiveness can be improved. The Team will continue the baseline assessment for sites that will be added each year.             |
| F-Indicator<br>HL.8.4-1  | Intermediate Result 1.3: Value of new funding mobilized to water and sanitation sectors as a result of USG assistance   | The baseline for this indicator is zero, considering the zero-based budgeting policy of the government for annual appropriations.  |
| <b>Objective 2 (Improved sustainable management of water resources)</b>                  |   |  |
| F-Indicator<br>EG 13-6   | Outcome 2.1: Greenhouse gas (GHG) emissions, estimated in metric tons of CO2 equivalent, reduced, sequestered, or avoided through sustainable landscapes activities supported by USG assistance | The estimated total GHG emission brought about by the forest losses in the six (6) watersheds in 2019 stood at <b>418,896 metric tons</b> .  |
| F-Indicator<br>HL 8.5-1  | Outcome 2.2: Number of people benefiting from adoption and implementation of  |  |

| Indicator Category                                    | Safe Water Project Indicators   | Baseline Figures / Information   |
|---|---|--|
|   | measures to improve water resources management as a result of USG assistance.   | The baseline for these indicators is zero, as the project will account for only the beneficiaries of SW interventions.   |
| Custom Indicator                                      | Outcome 2.3: Number of people receiving livelihood co-benefits (monetary or non-monetary) associated with USG sustainable landscapes activities.  |  |
| Custom Indicator                                      | Outcome 2.4: Changes in runoff-ratio in targeted catchments   | TBD upon completion of the Hydrologic Study  |
| Custom Indicator                                      | Outcome 2.5: Changes in water quality as measured by water turbidity.   | TBD upon completion of the Hydrologic Study  |
| Custom Indicator                                      | Outcome 2.6: Changes in the volume of groundwater recharge/infiltration.  | TBD upon completion of the Hydrologic Study  |
| Custom Indicator                                      | Intermediate Result 2.1: Number of hectares under improved watershed management through Safe Water activities   | <b>2,136</b> hectares (6% “ of the 33,878 hectares of forest lands in the Bago watershed) and only 1% of the rest of watershed areas in the targeted sites are under improved management |
| Custom Indicator                                      | Intermediate Result 2.2: Number of LGU WSPs, and watershed stakeholders with improved capacity to plan, manage and monitor water and forest resources sustainably, using data and innovative technologies | The baseline for this indicator is zero.   |
| Custom Indicator                                      | Intermediate Result 2.3: Amount of investment mobilized (in US\$ equivalent) for sustainable landscapes, as supported by USG assistance   | The baseline for LGU and national government investments is zero considering the zero-based budgeting policy of the government.  |
|   | Intermediate Result 2.4: Number of people who apply improved conservation law enforcement practices as a result of USG assistance   | No baseline for this indicator as the project will account for only the beneficiaries of SW interventions.   |
| <b>Objective 3 (Improved water sector governance)</b> |   |  |
| Custom Indicator                                      | Outcome 3.1: Number of policies or plans developed, enhanced or implemented to promote water security   | Thirty (30) policies and plans existing in Year 1 priority sites from LGUs and WSPs, but most need improvements  |
| F-Indicator   | Outcome 3.2: Number of water and sanitation sector institutions strengthened to manage water resources or improve   | No quantitative data. Types of institutions are described in Table 27.   |

| <b>Indicator Category</b>      | <b>Safe Water Project Indicators</b>   | <b>Baseline Figures / Information</b>  |
|--------------------------------|--|--|
|                                | water supply and sanitation services as a result of USG assistance   |  |
| Custom Indicator               | Intermediate Result 3.1: Number of major reform initiatives supported  | SW's project implementing arrangement with NEDA includes support for the action plans of 6 of 8 Key Result Areas (KRAs) <sup>2</sup> of the PWSSMP and the URAF  |
| Custom Indicator               | Intermediate Result 3.2: Number of mechanisms developed and/or enhanced for exchanging knowledge on water security   | Five (5) mechanisms in place for knowledge exchange in the Year I priority sites of SW. The assessment will continue as new sites are added.   |
| <b>Crosscutting indicators</b> |  |  |
| Custom Indicator               | CC1: Number of tools, technologies, or measures implemented to manage water resources or improved WSS through Safe Water activities  | Thirteen tools currently used, e.g., Lawin Forest and Biodiversity Protection System, Drone and Software "Agisoft", Groundwater Resource and Vulnerability Assessment Database, Checklist for water testing / Assessment of Risks, and others.   |
| Custom Indicator               | CC2: Number of partnerships developed and/or institutionalized to manage water resources or improve water supply and sanitation services as a result of USG assistance               | Twenty-one (21) partnerships comprising of Joint Venture Agreements, MOAs, and other partnership agreements in SW Year I priority sites.   |
| Custom Indicator               | CC3: Percentage change of women in decision-making positions in WSPs or sector institutions supported by Safe Water  | 32% of the people in decision making positions of various WSPs in the target region are women  |
| Custom Indicator               | CC4: Number of persons trained with USG assistance for advancing gender equality or female empowerment through their roles in public or private sector institutions or organizations | Among the Year I priority sites, only 5 out of 11 WDs have undertaken gender-related training activities; these are: Alabel Level III Water System, General Santos City Water District, Puerto Princesa City Water District, Bago City Water District and Talisay City Water District. |
| Custom Indicator               | CC5: Proportion of female participants in USG assisted programs designed to increase access to productive economic resources (assets, credit, income, employment).                   | Women constitute above 40% of participants in various capacity building programs increasing access to productive economic resources  |

<sup>2</sup> SW has no direct or intervention for KRA 7 - Managing Data and Information; and KRA 8 - Driving Research and Development

# INTRODUCTION

## I. Project Background

USAID designed the project to help the Philippine Government sustain its gains in the development of the water and sanitation sector, continue to address gaps and expand the scope to include resource management for sustainability of supply—in terms of both quantity and quality, and improve the sector’s governance through institutionalization of long term and structural policy and institutional reforms.

Following the key objectives of the project, the Team will leverage technical assistance to mobilize investments for expansion and improvement of water supply and sanitation (WSS) services and improve capacities of service providers and utility governance. The Team will also recommend measures, informed by data and analysis, to improve water resource management and will assist the national government through NEDA in the implementation of the sector master plan and the new financing policy.

SW’s Theory of Change and Results Framework are described below:

Theory of Change:

- IF** the Safe Water Project partners effectively with sector stakeholders to:
- Develop and disseminate accurate and reliable information on the state of water resources, climate change impacts, and domestic demand projections;
  - Strengthen capacity and competency of sector actors to interpret, analyze and use data for decision-making;
  - Develop integrated and coordinated planning platforms for water and sanitation service providers and water resource managers; and
  - Strengthen the enabling environment for the effective regulation, financing, and rationalization of institutional roles in the sector

**THEN**

National and local government institutions will be able to develop and implement the long-range policies necessary to balance sector investment, water resource management, and domestic needs for improved and expanded water and sanitation services,

**WHILE**

Water and sanitation service providers will have the ability and the motivation to adopt measures to support water resource protection, efficiency, and financial sustainability in operations,

**AND**

water consumers will have the knowledge and will to support a sustainable sector through water resource protection, efficient water use, and willingness to pay,

**LEADING TO** An integrated, evidence-driven, and institutionalized governance and investment framework that will sustain water resources and water and sanitation services for the long term

**THEREBY:** Improving water security for water-stressed communities in the Philippines.

The Results Framework (RF) that exhibits alignment of the project approaches to meet the goals of increased access to resilient water supply and sanitation services, improved management of water

resources and strengthened water sector governance over the life-of-project (LOP) is attached as Annex I for reference.

## II. Objectives of the Baseline Assessment

The overall objective of the baseline assessment is to define benchmark figures, as of Year 2019, of the result indicators, against which achievements of the Safe Water Project will be measured. The specific objectives include:

Water and Sanitation:

1. To assess and describe the level of access and quality of service of the target population to basic or safely managed water supply and limited or basic or safely managed sanitation services;
2. To assess and describe the operational, technical and financial management capacity of various WSPs;
3. To identify and describe existing coordination mechanisms for the WSS sectors at the local, watershed and regional levels; and
4. To determine and assess the level of funding allocated or mobilized by the LGUs and other institutions to the WSS sectors;
5. To identify opportunities and challenges the Team has to consider in designing the interventions towards increasing the level of access and quality of the WSS services in the target areas;

Water Resource Management:

6. To describe the conditions of the watershed areas covered by the SW Project particularly, regarding the state of forest loss and its equivalent greenhouse gas (GHG) emissions;
7. To describe the on-going efforts and investments of the LGUs and other WSS institutions in undertaking various landscape activities for the protection of forests;
8. To determine on-going landscape activities including livelihood activities for the protection of forest in the watersheds including number of beneficiaries;
9. To determine portion of the forestlands in the watersheds that are considered to be under improved watershed management as well as challenges confronted in the management of forest;
10. To assess and describe the capacity of the LGU WSPs, and watershed stakeholders to plan, manage and monitor water and forest resources;
11. Identify key challenges and opportunities that the Team has to consider in designing sustainable approaches and interventions in protecting the forests from further degradation;

Water Sector Governance:

12. Identify key challenges and opportunities that the SW project has to consider in prioritizing activities to help NEDA and other national government agencies implement the sector master plan and the new financing policy;
13. Identify key policies or plans as well as reform initiatives in place at the national, regional, provincial, watershed and city / municipal levels that would relate to the WSS services or



water security;

14. Identify key WSS sector institutions across project sites;
15. Identify mechanisms that facilitate exchanging of knowledge on water security for and among the project sites;

Crosscutting:

16. Identify and describe existing means, which include tools / technologies / measures and partnerships associated with managing the WRM and WSS across project sites;
17. Describe the extent or level of participation of women in managing the WSPs as well as activities and programs that promote gender equality.

### III. Scope and Limitation of the Study

The SW Results Framework (Annex 1) specifies 26 indicators that will be used as parameters to measure performance of the project. Eight (8), of which, are Standard Foreign Indicators (F-Indicators) that USAID requires for water and sanitation related projects. The remaining 18 are custom indicators, identified based on the implementation approach and the range of interventions of the project.

The baseline data on the indicators related to access to water and sanitation account for the entire provinces of Palawan, Negros Occidental and Sarangani and General Santos City. The baseline for the other indicators are built using data from the 17 cities / municipalities within the said project sites that were selected as Year 1 priority areas of the project (Table 2).

**Table 2: Sites Informing the Baseline Assessment for Non WSS Access-related Indicators**

| Province                             | SW Project Year 1 Sites (Cities / Municipalities)  |
|--------------------------------------|--|
| Palawan                              | Puerto Princesa<br>Coron<br>Dumaran<br>Taytay  |
| Negros Occidental                    | Bacolod<br>Bago<br>Isabela<br>Murcia<br>San Carlos<br>Silay<br>Talisay<br>Salvador Benedicto |
| Sarangani and General Santos (South) | Alabel<br>Kiamba   |

| Province  | SW Project Year I Sites (Cities / Municipalities) |
|-----------|---|
| Cotabato) | Maasim<br>Malungon<br>General Santos City         |

This baseline assessment covers 23 of the 26 indicators. The three indicators that are not covered include intermediate results under objective 2 namely: changes in runoff-ratio in targeted catchments; changes in water quality as measured by water turbidity; and changes in the volume of groundwater recharge/infiltration, which have yet to be covered and assessed by the on-going hydrologic studies of five watersheds, Buayan-Malungon, Montible, Bago, Siguel and Malago. These studies that will document the current state of water resources and the water balance are still underway and will be completed in March 2021.

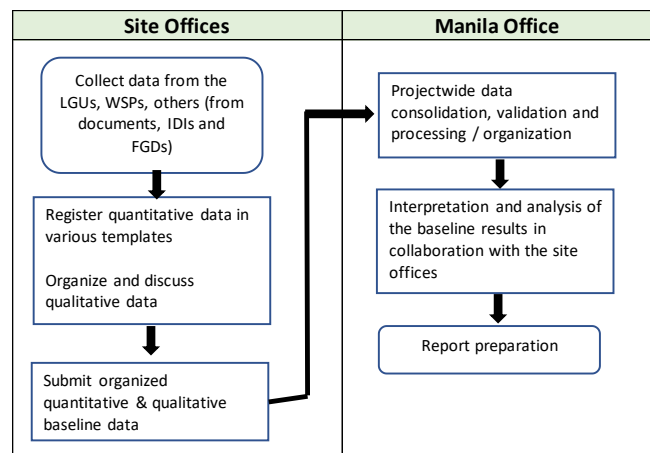
#### IV. Data Collection Process

The gathering of baseline data was done in two phases. The first phase focused on desk review of available secondary data, gathering quantitative data through on-line communication and coordination (e-mails, phone calls) while travel was restricted. The second phase focused on gathering qualitative data through in-depth Interviews (IDIs) and Focus Group Discussions (FGDs) with the LGUs, WSPs and other stakeholders. The IDIs were conducted when travel and in-person meetings were allowed. Annex 2 provides the list of LGUs, WDs / WSPs and other institutions that participated in the baseline assessment.

##### Phase I: Gathering of secondary data

The Team requested the Community Based Monitoring System (CBMS) reports and Annual Investments Plans (AIPs) of LGUs, and annual reports and financial records and other related documents of water districts. The site offices utilized baseline data

templates developed by the Manila Office in collecting and organizing data from the source documents. The data were collected by the site offices and thoroughly reviewed and validated by the Manila Office. The data were stored / uploaded in various databases, organized in various formats and analyzed on a project-wide scale by the Manila Office (Figure 3). The collection of documents from the LGUs, data registry, processing and analysis took until mid- September 2020.



Flow of Baseline Data Collection, Processing and Analysis

## Phase 2: Gathering of qualitative data in selected sites

In August 2020, the Team started the IDIs and FGDs with various officials of the concerned offices of the Provincial / City / Municipal LGUs in the targeted areas listed in Table 2. Key officials and personnel from the concerned offices of the LGUs (Health Office, Environment and Natural Resources Office, Engineering, others, and others), WDs / WSPs and government institutions (DENR, others) were selected as respondents to the interviews and FGDs.

The process, however, was sporadic because of episodic granular lockdowns in project areas.

The IDIs revealed key factors or constraints / challenges and actions being undertaken, as well as further assistance or measures necessary to improve access to safe water supply in each area covered. The latter will help the Team (i) define specific activities or interventions that will complement or build on the on-going actions or measures; and / or (ii) respond to the long term sustainability measures needed in the project sites.

The Team will continually do qualitative assessment as the project expands its reach in cities and municipalities within the three provinces.



Interview with MHO Dr. Dan Del Rosario, Municipal Health Officer (the person wearing blue gown) held on July 29, 2020 at Municipal Health Office (Taytay, Palawan)

## FINDINGS

This section presents baseline findings according to objective and indicator, which are drawn from both quantitative data and IDIs / FGDs.

### I. Access of underserved or unserved communities to safe water supply and sanitation services

This section presents the level of access of the targeted population to the water and sanitation services as well as concerns and challenges that are critical to the formulation of plans and strategies to promote water security in the project sites. The other indicator that relates to level of investments under the SW project's objective I is also covered.

#### **Outcome Indicator I.1: Number of people gaining access to basic or safely managed drinking water services**

The total population of the project sites (Palawan, Negros Occidental and Sarangani Provinces, and General Santos City) in 2019 is estimated at 5.7 million<sup>3</sup>. Of which, roughly 1.54 million (27%), 1.26

<sup>3</sup> The 2019 population is estimated by applying the annual population growth rate in each city / municipality from the actual population in 2015 as base year

million (22%), and 1.53 million (27%) people have access to safely managed (level 3), basic (level 2) and limited (level 1; protected) drinking water services respectively<sup>4</sup>. The other 26% or about 1.34 million people are accessing water from unsafe and unreliable sources, such as surface water and unimproved water supply systems (Table 3). The province of Negros Occidental has the largest number of people without access to limited, basic or safely managed drinking water services at about 791 thousand people followed by Palawan and Sarangani (including General Santos City) with about 361 and 186 thousand people respectively.

Of the total 64 cities and municipalities situated in the targeted sites, 10 (16%) (see Table 4) have a population where more than 50% of residents do not have access to safe drinking water services (limited, basic and safely managed). A description of each category or type of service is provided in Annex 3 for reference.

**Table 3: Breakdown of the Project Site Population According to Category of Water Services by Provinces; (All Cities and Municipalities) 2019**

| Province                        | No. of Cities / Municipalities | Population       | Breakdown of Population by Access to Water Services (Category) |              |                  |              |                                      |              |
|---------------------------------|--------------------------------|------------------|--|--------------|------------------|--------------|--------------------------------------|--------------|
|                                 |                                |                  | Safely Managed Services  |              | Basic Services   |              | Limited / Unimproved / Surface Water |              |
|                                 |                                |                  | No. of People  | %            | No. of People    | %            | No. of People                        | %            |
| Palawan                         | 24                             | 1,226,328        | 346,277  | 28.2%        | 292,991          | 23.9%        | 587,060                              | 47.9%        |
| Negros Occidental               | 32                             | 3,208,856        | 787,336  | 24.5%        | 609,280          | 19.0%        | 1,812,240                            | 56.5%        |
| Sarangani & General Santos City | 8                              | 1,234,231        | 405,699  | 32.9%        | 358,489          | 29.0%        | 470,043                              | 38.1%        |
| <b>Total</b>                    | <b>64</b>                      | <b>5,669,415</b> | <b>1,539,312</b>   | <b>27.2%</b> | <b>1,260,760</b> | <b>22.2%</b> | <b>2,869,343</b>                     | <b>50.6%</b> |

<sup>4</sup> Level 1 (limited), level 2 (basic) and level 3 (safely managed) are recognized by the Government of the Philippines as safe drinking water services. The proportion of the population with access to these types of water supply systems are being monitored and reported in gauging the attainment of the Sustainable Development Goal (SDG) indicator 6 (ensure access to water and sanitation for all) in the country.

**Table 4: List of Areas where more than 50% of population has no access to safe drinking water sources; 2019**

| Province          | Municipality | Population | Without Access to Safe Drinking Water |       |
|-------------------|--------------|------------|---------------------------------------|-------|
|                   |              |            | Population                            | %     |
| Palawan           | Agutaya      | 13,184     | 8,681                                 | 65.8% |
|                   | Araceli      | 16,220     | 13,605                                | 83.9% |
|                   | Balabac      | 45,434     | 31,710                                | 69.8% |
|                   | Cagayancillo | 6,271      | 6,207                                 | 99.0% |
|                   | Cuyo         | 23,603     | 19,329                                | 81.9% |
|                   | Dumaran      | 26,104     | 16,169                                | 61.9% |
|                   | El Nido      | 46,678     | 26,526                                | 56.8% |
|                   | Linapacan    | 18,070     | 10,054                                | 55.6% |
|                   | Magsaysay    | 12,572     | 11,224                                | 89.3% |
| Negros Occidental | Ilog         | 60,692     | 30,871                                | 50.9% |

The major factors or barriers that restrain level of access to safe drinking water services in the targeted areas include: (i) lack of financial resources to realize development of water sources, expansion and improvement of existing water supply systems, and construction of new water supply systems particularly to cater remote or far-flung areas such as island and upland barangays; (ii) inadequate capacity of various LGUs and WDs to identify and develop additional water sources; (iii) road right of way (ROW) issues that hamper or delay implementation of various water supply projects; and (iv) lack of technical capacities among WDs and other WSPs on the operations and maintenance (O&M) of water supply systems especially the LGU-run WSPs. The specific issues or factors are indicated in the discussion of findings by site.

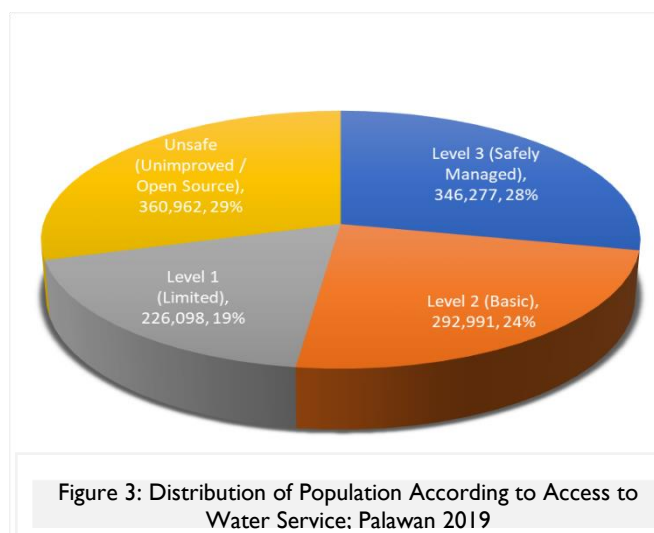
Against the overall global SDG target on access to safe drinking water, the largest gap is exhibited in the province of Palawan at 29% gap against 100% target by 2030, followed by Negros Occidental and Sarangani & General Santos City at 25% and 23% respectively (Table 5). Focusing on level 3 (safely managed) and level 2 (basic) drinking water services, the province of Negros Occidental has the largest gap at 56%, followed by Palawan at 48% and Sarangani & General Santos City at 36%.

**Table 5: Baseline Against SDG Targets; Access to Safe Drinking Water Services by Project Site (Proportion of Population)**

| Indicator                        | SDG Targets (% of Population) |             | Access by Project Site; % of Population (2019) |                   |                                 |
|----------------------------------|-------------------------------|-------------|--|-------------------|---------------------------------|
|                                  | 2022 Target                   | 2030 Target | Palawan  | Negros Occidental | Sarangani & General Santos City |
| <b>With Access to Safe Water</b> | <b>93.40%</b>                 | <b>100%</b> | <b>71%</b>                                     | <b>75%</b>        | <b>87%</b>                      |
| Without Access to Safe Water     | 6.60%                         | -           | 29%  | 25%               | 13%                             |
| Households with Level 3 systems  | 58.30%                        | 77.10%      | 28%  | 25%               | 33%                             |
| Households with Level 2 systems  | 15.00%                        | 14.00%      | 24%  | 19%               | 31%                             |
| Households with Level 1 systems  | 20.10%                        | 8.90%       | 18%  | 32%               | 23%                             |

### Province of Palawan

Comprised of one independent component city<sup>5</sup>, Puerto Princesa City, and 23 municipalities, the province of Palawan is home to 1,226,328 people. Twenty-eight percent (28%) or 3,277 people, 24% or 292,991 people, and 19% or 226,098 people have access to safely managed, basic, and limited drinking water services respectively (Figure 3). The other 29% or 360,962 people are accessing either unimproved service or surface water. The city of Puerto Princesa, though having 93% of its population with access to safe water, has the largest number of people, 19,172 (7%) still without access to safe drinking water services. The summary of level of access of people according to type of water service across sites is provided in Figure 4. See Annex 4 for the detailed breakdown of access of the population of each city / municipality according to category of water service.



<sup>5</sup> An independent component city is outside of the jurisdiction of the provincial government.

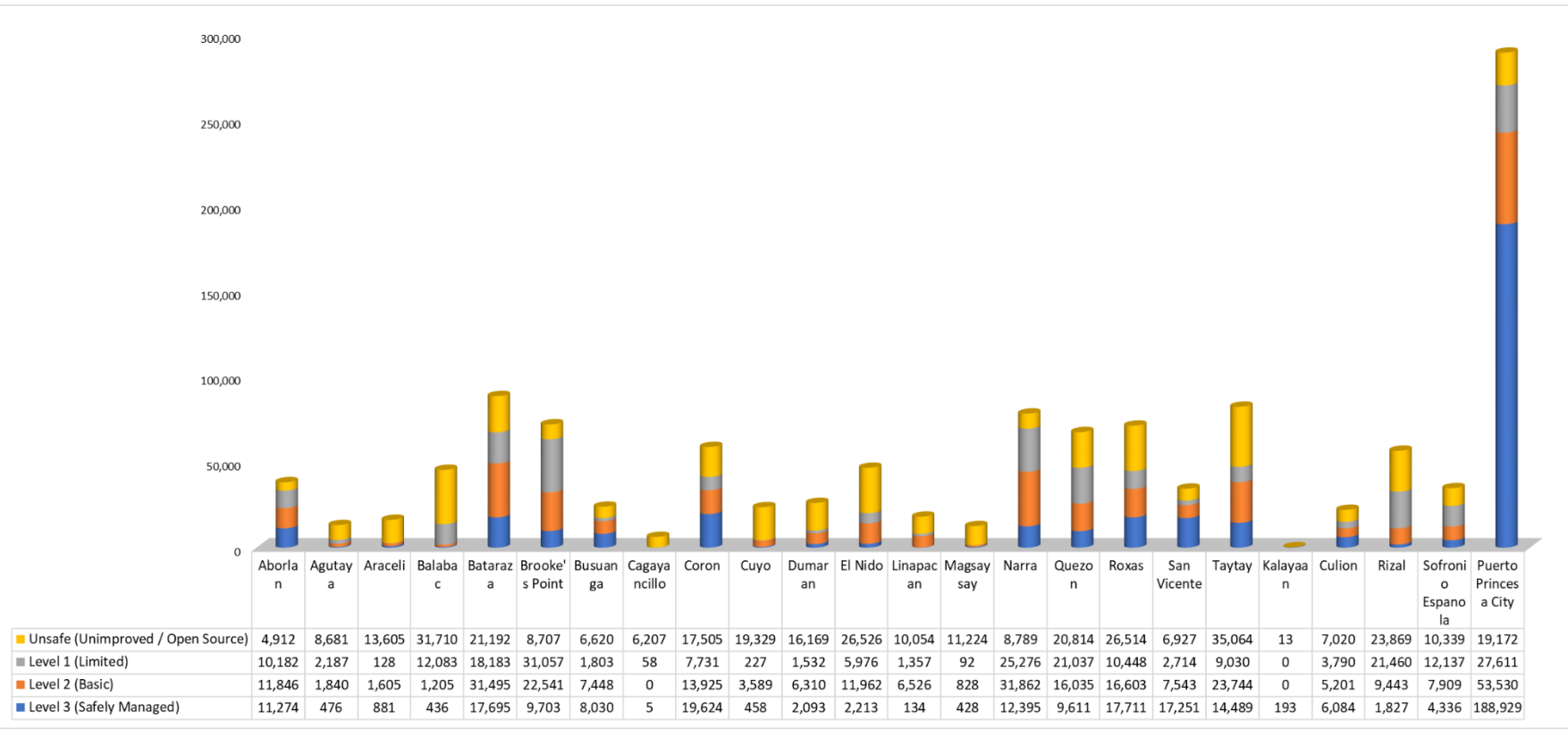


Figure 4: Distribution of Population According to Access to Water Service; Palawan by City / Municipality 2019

## Key Issues of Access to Safe Drinking Water Services

The key issues for the Puerto Princesa City, Dumarán and Taytay as identified during the baseline assessment are summarized in Table 6 and details are contained in Annex 5. These are the areas identified where they need help. The initiatives for service improvements being undertaken by the LGUs, WDs and WSPs, are also noted by the Team and will be factored in the technical assistance program.

**Table 6: Summary of Constraints / Challenges Affecting Access to Safe Drinking Water Services, Actions Being Undertaken and Potential Assistance Way Forward (Province of Palawan According to City / Municipality)<sup>6</sup>**

| Matters Discussed  | Situation by Site |         |        |
|--|-------------------|---------|--------|
|  | Puerto Princesa   | Dumarán | Taytay |
| <b>A. Key Constraints / Challenges</b>   |                   |         |        |
| Lack / Limited water sources   | √                 |         | √      |
| WD lacks financial resources to develop new water sources, improve its existing system and expand its service area | √                 |         | √      |
| Remoteness of some areas (e.g. island barangays)   | √                 |         |        |
| Low discharge capacity of pumping stations   | √                 | √       |        |
| Limited water storage capacity of WD / WSP   |                   | √       |        |
| Potential water sources (e.g., small springs) located in private lots not accessed / utilized                      |                   |         | √      |
| Road right of way issues`  |                   |         | √      |
| <b>B. Key Actions Being Undertaken</b>   |                   |         |        |
| Implementation of water supply projects (through loans from the MDFO)  |                   | √       |        |
| On-going projects (full treatment plant, filtration facility)  | √                 |         |        |
| LGU providing financial assistance to the Water District for expansion of service area                             | √                 |         |        |
| Water resources investigation  | √                 |         |        |
| Salintubig Projects (DILG)   |                   | √       | √      |

<sup>6</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.



| Matters Discussed  | Situation by Site |         |        |
|--|-------------------|---------|--------|
|  | Puerto Princesa   | Dumaran | Taytay |
| Seeking financial assistance from the MDFO   |                   |         | √      |
| <b>C. Potential Assistance (Way Forward)</b>   |                   |         |        |
| Identification / Development of water sources among areas that are not yet covered by the WD   | √                 |         |        |
| Technical assistance in the design of upgrading or augmenting the filtration facilities of the WD  | √                 |         |        |
| Technical assistance on the development / updating of designs and specifications of lined-up water supply projects                             | √                 | √       | √      |
| Procurement / Implementation of MDFO funded Projects   |                   | √       |        |
| Procurement / Implementation of Salintubig Projects  |                   | √       |        |
| Spring exploration and Geo-Resistivity Survey to determine the possible source development through spring or wells.                            |                   |         | √      |
| Access financial assistance to implement water supply projects (including compliance with the requirements of financing institution e.g. MDFO) |                   |         | √      |

## Province of Negros Occidental

With 12 cities, including Bacolod City, and 20 municipalities, the province of Negros Occidental has a total population of 3,208,856. Twenty-five percent (25%) or 787,336 people, 19% or 609,280 people, and 32% or 1,021,474 people have access to safely managed, basic and limited drinking water services respectively (Figure 5). The other 25% or 790,766 people are accessing either unimproved service or surface water. Bacolod City has the highest number of people, 135,580 (22% of the city's total population), without access to safe drinking water services. A summary of level of access of people according to type of water service across sties is provided in Figure 6. See Annex 6 for the detailed breakdown of population of each city / municipality in the province according to category of water service.

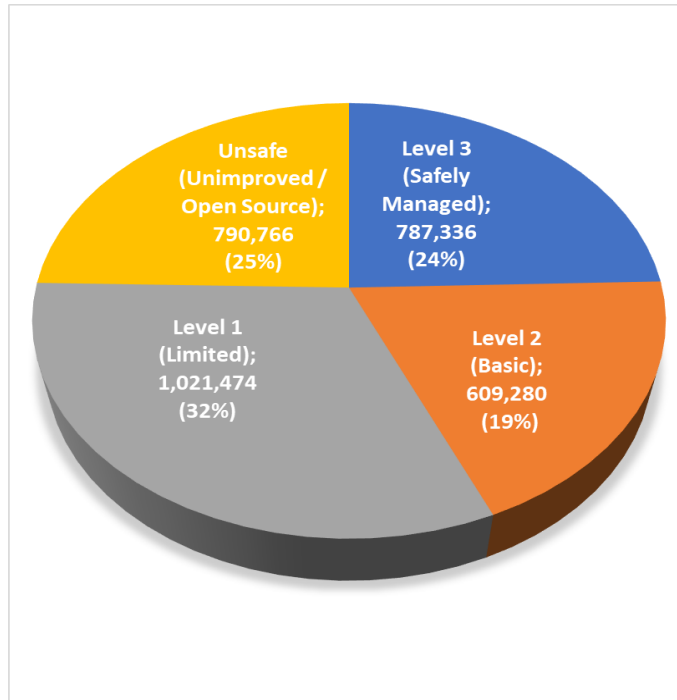


Figure 5: Distribution of Population According to Access to Water Service; Negros Occidental 2019

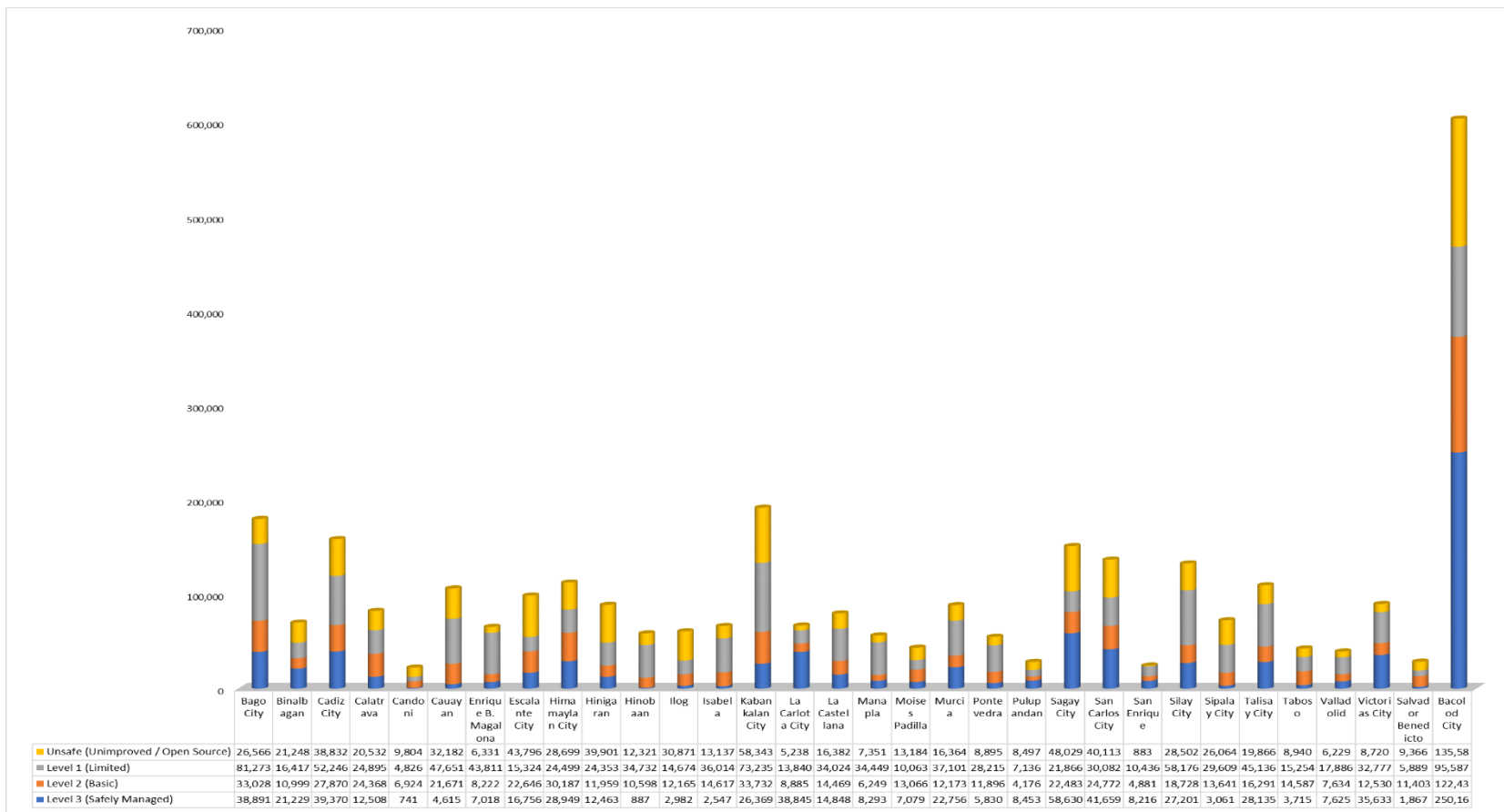


Figure 6: Distribution of Population According to Access to Water Service; Negros Occidental by City / Municipality 2019

## Key Issues on Access to Safe Drinking Water Services in Negros Occidental

The key constraints / challenges, actions underway and assistance needed that were identified in the interviews are summarized in Table 7 and details are contained in Annex 7.

**Table 7: Highlights of IDIs: Province of Negros Occidental According to City / Municipality<sup>7</sup>**

| Matters Discussed   | Situation By Site |      |                        |         |        |            |       |         |
|---|-------------------|------|------------------------|---------|--------|------------|-------|---------|
|   | Bacolod           | Bago | Don Salvador Benedicto | Isabela | Murcia | San Carlos | Silay | Talisay |
| <b>A. Key Constraints / Challenges</b>  |                   |      |                        |         |        |            |       |         |
| WD and LGU-run RWSAs lack financial resources to develop new water sources, improve its existing system and expand its service area | √                 | √    | √                      | √       | √      | √          | √     | √       |
| Lack / Limited water sources  | √                 | √    |                        |         |        |            |       |         |
| Implementation of the WD development plan / Business Plan   |                   |      |                        |         | √      |            |       | √       |
| Remoteness of some areas (e.g. upland barangays)  |                   |      |                        |         |        |            | √     | √       |
| Road-right of way issues  |                   |      |                        |         |        |            | √     |         |
| <b>B. Key Actions Being Undertaken</b>  |                   |      |                        |         |        |            |       |         |
| Potential Public-Private Partnership (PPP) with the PRIMEWATER  | √                 | √    |                        |         |        |            |       |         |
| Securing water permit for the new source  |                   |      |                        |         |        | √          |       |         |
| Salintubig Projects (DILG)  |                   |      |                        | √       |        |            |       |         |

<sup>7</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

| Matters Discussed  | Situation By Site |      |                        |         |        |            |       |         |
|--|-------------------|------|------------------------|---------|--------|------------|-------|---------|
|  | Bacolod           | Bago | Don Salvador Benedicto | Isabela | Murcia | San Carlos | Silay | Talisay |
| <b>C. Potential Assistance (Way Forward)</b>   |                   |      |                        |         |        |            |       |         |
| Preparation of the manual and / or may provide capacity development on contract management (for the WD)  | √                 | √    |                        |         |        |            |       |         |
| Technical assistance on the development / updating of designs and specifications of lined-up water supply projects                             |                   |      | √                      |         |        |            |       |         |
| Procurement / Implementation of lined-up water supply projects   |                   | √    | √                      |         |        | √          |       |         |
| Procurement / Implementation of Salintubig Projects  |                   |      |                        | √       |        |            |       |         |
| Access financial assistance to implement water supply projects (including compliance with the requirements of financing institution e.g. MDFO) |                   |      | √                      |         |        |            |       |         |
| Technical assistance on ring-fencing, business planning, water safety plan, master plan, other capacity building                               | √                 | √    | √                      | √       | √      | √          | √     | √       |

## Province of Sarangani and General Santos City

The Province of Sarangani (seven municipalities), and General Santos City, an independent component city within South Cotabato Province, have a combined population of 1,234,231. Thirty-three percent (33%) or 405,699 people, 29% or 358,489 people, and 23% or 284,487 people have access to safely managed, basic and limited drinking water services respectively (Figure 7). The other 15% or 185,556 people are accessing either unimproved service or surface water. The municipality of Glan has the largest number of people (43,995) that has no access to safe drinking water services, which constitutes roughly 38% of its population.

A summary of level of access of people according to type of water service across sties is provided in Figure 8. See Annex 8 for the detailed breakdown of population of each city / municipality in the province according to category of water service

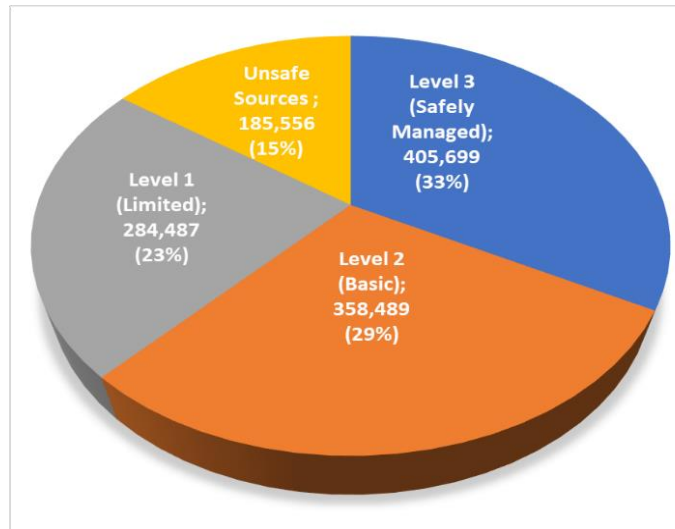


Figure 7: Distribution of Population According to Access to Water Service; Sarangani and General Santos City 2019

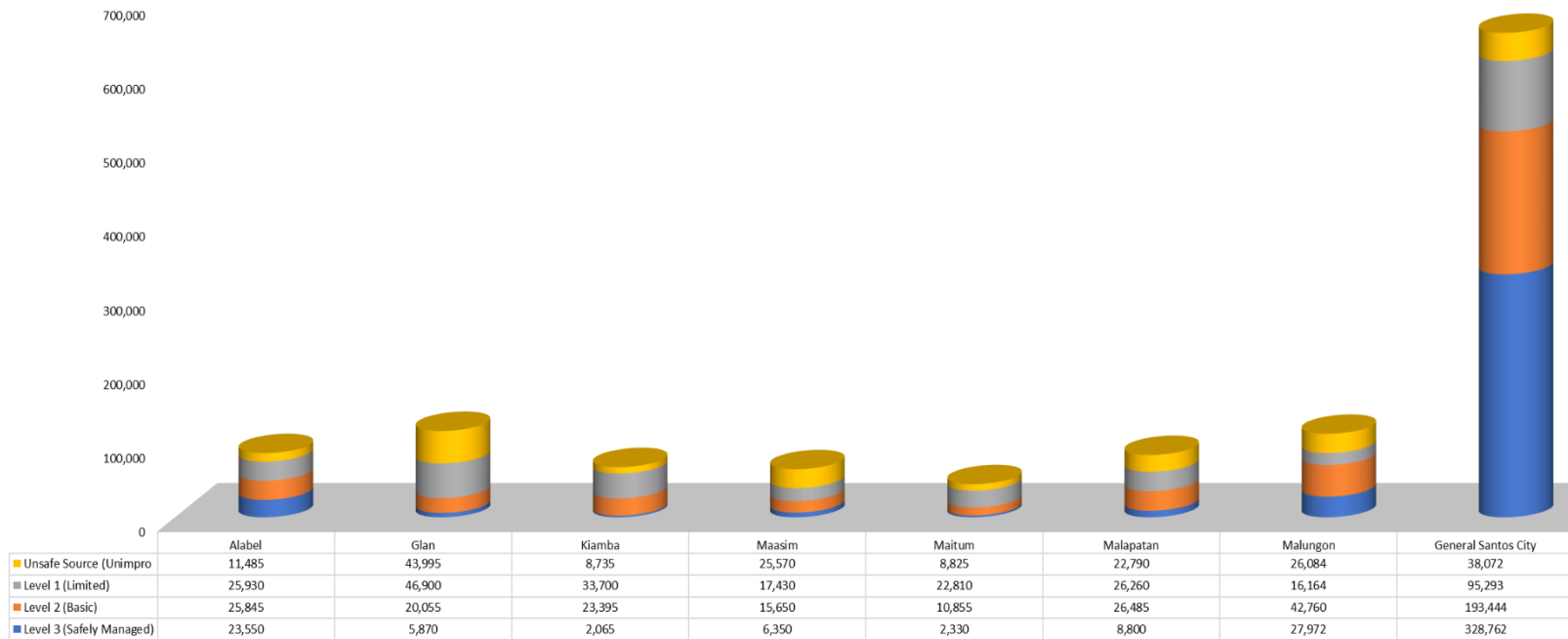


Figure 8: Distribution of Population According to Access to Water Service; Sarangani by Municipality and General Santos City 2019

## Key Issues on Access to Safe Drinking Water Services

The key constraints / challenges, actions underway and assistance needed that were identified during the interviews are summarized in Table 8. The reference of the information that was documented during the IDIs / FGDs are provided in Annex 9.

**Table 8: Situation of Access to Safe Drinking Water Services: Province of Sarangani According to City / Municipality and General Santos City<sup>8</sup>**

| Matters Discussed  | Presence by Site    |        |          |        |        |
|--|---------------------|--------|----------|--------|--------|
|  | General Santos City | Alabel | Malungon | Maasim | Kiamba |
| <b>A. Key Constraints / Challenges</b>   |                     |        |          |        |        |
| WD / RWSAs / BWASA / BLGU-run water systems lack financial resources to develop new water sources, improve its existing system and expand its service area | √                   | √      | √        | √      |        |
| Lack of technical capability particularly on water system design (WD / RWASA)_   | √                   | √      |          |        |        |
| WD / WSPs no capacity to check systems losses  | √                   | √      |          |        |        |
| WD / RWSA pipelines damaged (need to be replaced)  |                     | √      | √        | √      |        |
| Rural Waterworks and Sanitation Association, Inc (LARWASAI) / BLGU-run water system  |                     |        |          |        |        |
| Elevated tank damaged during last year's Earthquake, thus, water connections are now connected to the mainline   |                     | √      |          |        |        |
| Pumps need maintenance   |                     | √      |          |        |        |
| lack of technical capability on water system operation and maintenance (BLGU-run level 3 systems)  |                     | √      |          | √      |        |
| Remote location of water source to community (LGU-run water system)  |                     |        | √        |        |        |

<sup>8</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.



| Matters Discussed  | Presence by Site    |        |          |        |        |
|--|---------------------|--------|----------|--------|--------|
|  | General Santos City | Alabel | Malungon | Maasim | Kiamba |
| <b>B. Key Actions Being Undertaken</b>   |                     |        |          |        |        |
| Hydraulic modelling for service connection expansion   |                     | √      |          |        |        |
| On-going water source identification and assessment for development  |                     |        | √        |        |        |
| Geo -resistivity studies by SURGE in selected areas  | √                   |        |          |        |        |
| Water resources investigation / identification   | √                   | √      |          |        |        |
| Salintubig Projects (DILG)   |                     |        |          |        |        |
| WD availing of financial assistance from the LWUA for water service expansion  |                     |        | √        |        |        |
| Well exploration by LWUA accredited service provider   |                     |        | √        |        |        |
| Development of a comprehensive expansion Plan  | √                   |        |          |        |        |
| Fund sourcing for water supply projects and expansion done by BLGU, MLGU and PLGU with possible funders like DILG, DSWD Kalahi, PAMANA, BUB, etc |                     |        | √        |        |        |
| Development of Business Plan   | √                   |        |          |        |        |
| MLGU provides funds and sought assistance from PLGU and NGAs for water supply projects   |                     |        |          |        | √      |
| <b>C. Potential Assistance (Way Forward)</b>   |                     |        |          |        |        |
| Identification / development of water sources (including preparation of Feasibility Study / Technical Design)                                    | √                   |        |          | √      |        |
| Consolidation of BWSA to be part of the WD   |                     |        | √        |        |        |
| Assessment of groundwater source   | √                   |        |          |        |        |

| Matters Discussed  | Presence by Site    |        |          |        |        |
|--|---------------------|--------|----------|--------|--------|
|  | General Santos City | Alabel | Malungon | Maasim | Kiamba |
| Surface bulk water source development  | √                   |        |          |        |        |
| Hydrologic study of Buayan-Malungon River Basin  | √                   |        |          |        |        |
| Development of RWSA's manual of operation/IRR  | √                   |        |          |        |        |
| Reconstitution of the created TWG  | √                   |        |          |        |        |
| Continuing capability building training on WQM for RWSAs   | √                   |        |          |        |        |
| Preparation of Technical Design for Weir Construction & Spring source Development  |                     | √      |          |        |        |
| Technical assistance on ring-fencing, business planning, water safety plan, master plan, financial management, water quality monitoring, water supply O&M, skills upgrading / enhancement, others (WD / RWSAs / BWASA / BLGU- water systems) | √                   | √      | √        | √      | √      |
| Creation of MEEDO  |                     | √      |          |        |        |
| Assistance to MLGU for setting up of water enterprise or a joint venture for water system  |                     |        |          |        | √      |

**A. Outcome 1.2: Number of people receiving improved service quality from an existing basic or safely managed drinking water service as a result of USG assistance.**

The baseline information for this indicator relates to issues on the quality of services obtained or experienced from some water districts (WDs) or WSPs. Over time as the SW project progresses, periodic assessment shall be undertaken to trace to what extent the service quality issues as identified during the baseline assessment are addressed by SW project activities.

The perennial service quality issues throughout the WDs / WSPs are categorized into two major aspects namely; water quality problems (turbidity, presence of e-coli, iron and manganese content) and availability (limited / intermittent days and hours of service and inadequate or low pressure). The summaries of service quality problems that have been identified among the WDs / WSPs reached by the SW site offices during data gathering in the provinces of Palawan, Negros Occidental and Sarangani and General Santos City are provided in Tables 9, 10 and 11 respectively.

**Table 9: Service Problems According to Type of Water Service: Province of Palawan According to City / Municipality**

| City / Municipality         | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward         |
|-----------------------------|-----------------------|--|--|---------------------------------------|
| <b>Puerto Princesa City</b> | Level I               | <p><b>Quality:</b> Turbid during rainy days</p> <p><b>Availability:</b> Insufficient water during dry months</p>   | <p>Distribution of waterline or chlorine</p> <p>Rationing of water by tankers</p>  | Expansion of water service area of WD |
|                             | Level II              | <p><b>Quality:</b> Turbid during rainy days (particularly in Barangays Cabayugan and Tagabinet)</p> <p><b>Availability:</b> Insufficient water during dry months (Barangays Buenavista, Pangangan, Tagabinet, and Marufinas)</p> | <p>Distribution of waterline or chlorine</p> <p>Rationing of water by tankers</p>  | Expansion of water service area of WD |
|                             | Level III             | <p><b>Quality:</b> High turbidity during rainy season</p> <p><b>Availability:</b> Insufficient water supply of Irawan during dry months in most of its pumping stations.</p>   | <p>Increase of chemicals and introduction of other treatment procedures to meet water quality standard.</p> <p>Regular monitoring of physico-chemical and bacteriological water quality parameters. Compliance with water quality standard.</p> <p>WD has ongoing projects that will increase water supply.</p> <p>Advisories on water quality, adequacy, potability, reliability,</p> |                                       |

| City / Municipality     | Type of Water Service | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward  |
|-------------------------|-----------------------|--|---|--|
|                         |                       |  | leakages, and delay in the delivery.  |  |
| Municipality of Dumarán | Level I               | <p><b>Quality:</b><br/>During rainy months, turbid water is observed in barangays with Level I water sources such as shallow wells, dug wells, and springs.</p> <p><b>Availability:</b><br/>Insufficient water supply is experienced during dry months. Some communities sourced out their water in Poblacion and Sta. Teresita water system. In Brgy. Magsaysay, the community gets their drinking water in Sta. Teresita water system.</p> | <p>Every barangay has volunteers to conduct the following activities:</p> <p>a) Monitor the status of water sources.</p> <p>b) Information, Education, and Communication (IEC) campaign on the importance of clean water, causes of water contamination, and water treatment method among the community.</p> <p>c) Provide free waterline or chlorine for water treatment</p> | <p>Conduct training on environmental sanitation program (e.g., standard measurement and application of chlorine in the water, standard water quality monitoring, and proper sanitation practices) among sanitary inspectors and barangay volunteers. This would be help strengthen the capacity of personnel on water quality monitoring.</p> <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available IEC materials.</p> <p>Additional funding to water system.</p> |
|                         | Level II              | <p><b>Quality:</b><br/>Level 2 sources such as shallow wells and springs managed become turbid during dry months.</p> <p><b>Availability:</b><br/>Insufficient water supply during dry months</p>  | <p>Every barangay has volunteers to conduct the following activities:</p> <p>a) Monitor the status of water sources.</p> <p>b) Information, Education, and Communication (IEC) campaign on the importance of clean water, causes of water contamination,</p>  | <p>Provision of water filtration to be used by the LGU to improve water services to the community.</p> <p>Conduct training on environmental sanitation program (e.g., standard measurement and application of chlorine in the water and water quality monitoring, standard water quality monitoring, and proper sanitation practices) among sanitary inspectors and barangay volunteers. This would be helpful to</p>  |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward   |
|---------------------|-----------------------|---|---|---|
|                     |                       |   | <p>and water treatment method among the community.</p> <p>c) Provide free waterline or chlorine for water treatment</p> | <p>strengthen the understanding and capacity of personnel on water quality monitoring.</p> <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available visual aids or any materials to be given to the community during IEC activities.</p> <p>Additional budget for water system.</p> |
|                     | Level III             | <p><b>Water Quality:</b></p> <p>Monthly monitoring of bacteriological and annual physico-chemical test of water sources was conducted in major water sources of Poblacion, Sta. Teresita, and Danleg. Water samples were submitted to Provincial Health Office and Manila laboratories. In September 2020, samples are positive to <i>E. coli</i> based on the results of the test.</p> <p><b>Availability:</b></p> <p>The water service delivery in the Poblacion is generally insufficient. Only an hour of daily water service is provided in regular days due to the small tank storage. The current tank storage (32 cu. m.) will be upgraded soon into 288 cu. m.</p> |   | <p>Identify and develop good water sources.</p> <p>Technical trainings on the management of water supply system, such as:</p> <ol style="list-style-type: none"> <li>1. Creation of committee on water quality monitoring and technical trainings.</li> <li>2. Commercial practices</li> </ol> <p>Additional budget for water system.</p>                     |

| City / Municipality    | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward   |
|------------------------|-----------------------|---|---|---|
| Municipality of Taytay | Level I               | <p><b>Quality:</b><br/>Turbid water during rainy months.</p> <p><b>Availability:</b><br/>Insufficient water supply during dry months.</p>   |   |   |
|                        | Level II              | <p><b>Quality:</b> All water samples have presence of coliform based on the results of PHC test conducted in deep wells and dug wells.</p> <p>Turbid water during rainy months.</p> <p><b>Availability:</b><br/>Insufficient water supply during dry months.</p>  | <p>Conduct IEC activity on the importance of using safe water, including discussion of different water treatment methods (boiling, solar water disinfection, and chlorination).</p> <p>a) Provide waterline or chlorine.</p> <p>b) Provide pamphlets and visual aids.</p> |   |
|                        | Level III             | <p><b>Quality:</b> All water samples have presence of coliform based on the results of PHC test conducted in deep wells and dug wells.</p> <p>Turbid water during rainy months.</p> <p><b>Availability:</b><br/>Insufficient water supply during dry months.</p> <p>In Poblacion, there is a need to tap deep well during dry season as the surface water becomes depleted in</p> | <p>Water sources are being managed by barangay LGUs.</p> <p>Conduct IEC activity on the importance of using safe water, including discussion of different water treatment methods (boiling, solar water disinfection, and chlorination).</p>                              | <p>Spearhead barangays with water sources to implement water payment for operation and maintenance.</p> <p>Orientation and training on management of water sources among barangay LGUs.</p> |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken   | Assistance Needed Way Forward  |
|---------------------|-----------------------|---|--|--|
|                     |                       | elevated areas which were serviced only for 8 hours during these times. | a) Provide waterline or chlorine.<br>b) Provide pamphlets and visual aids.   |  |
|                     |                       |   | TPWSMO is conducting a study on how to further improve their filtration facility to meet water quality standard.<br><br>TPWSMO is conducting a study on how to increase the supply of raw water that will flow to their filtration system. | Improve the filtration of water system.<br><br>Provide assistance in preparing design for the use of other water sources near the filtration system.<br><br>Conduct Geo-Resistivity survey to determine potential aquifer in the area. |

**Table 10: Service Problems According to Type of Water Service: Province of Negros Occidental According to City / Municipality**

| City / Municipality | Type of Water Service | Service Quality Problems         | Actions Being Undertaken   | Assistance Needed Way Forward                           |
|---------------------|-----------------------|----------------------------------|--|---|
| Bacolod City        | Level III             | The color of water is brownish.  | Physical and chemical tests will be conducted on raw and treated water to determine why such color occurred.<br><br>Checking on whether the incrustation on the pipelines causes the brownish color. | TBD since BACIWA is already privatized.                 |
| Bago City           | Level I               | Presence of E.coli contaminants. | Employ disinfection.   | Provide trainings / workshops on water safety planning. |

| City / Municipality   | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward   |
|-----------------------|-----------------------|---|---|---|
|                       |                       |   | Conduct regular residual chlorine and microbiological tests.  |   |
|                       | Level III             | Occurrence of high content of manganese and iron in the deep well sources.<br>Low pressure occurs during peak-hour demand.<br>Water availability in some parts of the service area is not 24 hours. | Due to lack of technical and financial capacity, BACIWA is entertaining plans for PPP arrangement to rehabilitate its old, inadequate and inefficient infrastructure. | TBD after the results of the evaluation of the Primewater proposal have been known. |
| Don Salvador Benedito | Level I               | Presence of E. coli contaminants.   | Employ disinfection.<br>Conduct regular residual chlorine and microbiological tests.  | Provide trainings / workshops on water safety planning.                             |
|                       | Level II              | Turbidity problem especially during heavy rains.  | TBD   | Assist in assessing the existing situation and recommend interventions              |
| Isabela               | Level I               | Presence of E. coli contaminants.   | Employ disinfection.<br>Conduct regular residual chlorine and microbiological tests.  | Provide trainings / workshops on water safety planning.                             |
| Murcia                | Level I               | Presence of E. coli contaminants.   | Employ disinfection.<br>Conduct regular residual chlorine and microbiological tests.  | Provide trainings / workshops on water safety planning.                             |
| San Carlos City       | Level III             | High turbidity during heavy rains resulting in plant shutdowns  | The San Carlos Waterworks Department has asked DPWH who is the implementing agency  | STTA for the assessment and improvement of existing WTP.                            |



| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward |
|---------------------|-----------------------|--|--|-------------------------------|
|                     |                       | that causes water service interruptions.   | of the DOT-funded WTP construction project to investigate the problem and also sought technical assistance from the SW project.  |                               |
| Silay City          | Level III             | Deep well sources contain iron and manganese which are treated by the existing iron and manganese removal facilities.  | Water quality monitoring including regular physical and chemical tests and maintenance of the treatment facilities.  | TBD                           |
| Talisay City        | Level III             | Deep well sources contain iron and manganese but their values are within the permissible limits as per PNSDW.<br><br>The average operating pressure of the system is 3-5 psi which is lower when compared to LWUA-approved design criteria which is $\geq 10$ psi. | Continue monitoring of the parameters and conduct regular physical and chemical tests or as needed.<br><br>The average operating pressure will not increase because most of the customers are residential having one-story houses. | TBD                           |

**Table II: Service Problems According to Type of Water Service: General Santos City and Province of Sarangani According Municipality**

| City / Municipality        | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward   |
|----------------------------|-----------------------|--|--|---|
| <b>General Santos City</b> | Level I               | Some barangays (Tinagacan, Batomelong & Buayan) have yellowish water, metallic taste and turbid. | 1. Installation of Chlorinator<br><br>2. Conduct of Water safety Planning (c/o SURGE) for 25 selected RWSAs. | 1. For the remaining RWSAs on WQM<br><br>- Purchase of water quality testing kits<br>- Conduct of regular WQM<br><br>2. Creation of community Operation and maintenance team<br><br>3. Strengthening of the IBA on water system |

| City / Municipality       | Type of Water Service  | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward   |
|---------------------------|--|--|---|---|
|                           |  |  |   | development / management (Integrated Barangay Affairs Office)   |
|                           | Level 2  | Some areas with yellowish color though odorless and no taste.  |   |   |
|                           | Level 3  | RWSA's: Some barangays have yellowish water particularly in barangays Tinagacan, Batomelong, Conel and Buayan                        |   |   |
| <b>Sarangani Province</b> |  |  |   |   |
| Alabel                    | Level 1  | Barangay Poblacion: yellowish water, metallic taste and turbid.<br><br>Barangay Ladol: yellowish water, has odor, and metallic taste | <ol style="list-style-type: none"> <li>1. Expanding service area of Alabel LGU run level III water system</li> <li>2. Identify additional water sources</li> <li>3. Conduct WQM</li> <li>4. Assigned barangay sanitary inspectors</li> <li>5. PLGU undertakes water quality tests of water sources prior to funding allocation</li> </ol> | Train LGU and WSPs on WQM<br><br>Purchase of water quality testing kits<br><br>Conduct of regular WQM |
|                           | Level 2  | Some areas with yellowish color but odorless and no taste. Other areas clear in color, no taste and odorless                         |   |   |
| Level 3                   | Water Quality:<br><u>Alabel LGU run level III WS</u> Poblacion: color is yellowish, metallic taste and turbid during rainy days<br><br>In other areas: turbid during rainy days<br><br>Pressure / Availability:<br>Rationing, not 24/7<br><br><u>LAWARSAI</u> : turbid during rainy days<br><br>Pressure / Availability: |  |   |   |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward   |
|---------------------|-----------------------|---|---|---|
|                     |                       | Rationing, not 24/7<br><u>KAWAS</u> : yellowish in color and with odor<br>Pressure / Availability:<br>Rationing, not 24/7<br>All level III WS have turbid during rainy days                           |   |   |
| Malungon            | Level 1               | Some areas in Poblacion: yellowish in color<br><br>All level I except in upland areas like Datal Batong, Datal Tampal, Datal Bila have turbid water during rainy days and presence of E.coli          | 1. MLGU has ZOD ordinance<br><br>2. Only two out of 19 barangays sampled for water quality testing in Malungon passed the water testing done by the Sanitary Inspector in 2019<br><br>3. LGU provides fund support and seeks assistance from the PLGU for water supply projects<br>4. PLGU undertakes water quality tests of water sources prior to funding | Train LGU and WSPs on WQM<br><br>Purchase of water quality testing kits<br><br>Conduct of regular WQM |
|                     | Level 2               | All level II except in upland areas like Datal Batong, Datal Tampal, Datal Bila: turbid water during rainy days and with E.coli presence  |   |   |
|                     | Level 3               | San Miguel BLGU managed water is used for domestic only.  |   |   |
| Maasim              | Level 1               | Private water supplier in Daliao and Tinoto: yellowish water, with odor and smells like seawater<br><br>Other areas with pitcher pumps have yellowish color (high level of magnesium) and taste salty | 1.LGU assist the WD expand and improve water service<br><br>2. LGU provides fund support and seeks assistance from the PLGU for water supply projects<br>3. PLGU undertakes water quality tests of water sources prior to funding   | Train LGU and WSPs on WQM<br><br>Purchase of water quality testing kits<br><br>Conduct of regular WQM |
|                     | Level 2               | Daliao: clear with intermittent supply<br><br>BAWASA: turbid water during rainy   |   |   |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward   |
|---------------------|-----------------------|--|---|---|
|                     |                       | days and with E.coli presence  |   |   |
|                     | Level 3               | <u>Tinoto:</u><br>TIWASAI - color yellowish with taste<br><u>Maasim WD:</u> clear, odorless and no taste |   |   |
| Kiamba              | Level I               | In coastal areas: water taste is salty   | 1. LGU provides fund support and seeks assistance from the PLGU for water supply projects<br>2. PLGU undertakes water quality tests of water sources prior to funding | Train LGU and WSPs on WQM<br><br>Purchase of water quality testing kits<br><br>Conduct of regular WQM |

**B. Outcome I.3: Number of people gaining access to limited, basic or safely managed sanitation services as a result of USG assistance**

Seventy-seven percent (77%) of the total population, or 4,318,046 people, in the provinces of Palawan, Negros Occidental and Sarangani and General Santos City have access to limited, basic and safely managed sanitation services. The remaining population (23%), or 1,289,806 people, are accessing either unimproved sanitation or practicing open defecation. The province of Negros Occidental has the largest number of people, about 90,000, that have no access to either limited, basic or safely managed sanitation services. The breakdown of the population of the provinces according to the type of sanitation services is provided in Table 12. The types/ categories of sanitation services are defined in Annex 10 for reference.

**Table 12: Breakdown of the Targeted Population According to Category of Water Services by Provinces: All Cities and Municipalities (2019)**

| Province                          | No. of Cities / Municipalities | Population       | Breakdown of Population by Access to Sanitation Services (Category) |             |                  |             |                  |             |                |            |                 |             |
|-----------------------------------|--------------------------------|------------------|---|-------------|------------------|-------------|------------------|-------------|----------------|------------|-----------------|-------------|
|                                   |                                |                  | Safely Managed  |             | Basic            |             | Limited          |             | Unimproved     |            | Open Defecation |             |
|                                   |                                |                  | No. of People   | % of Pop.   | No. of People    | % of Pop.   | No. of People    | % of Pop.   | No. of People  | %          | No. of People   | % of Pop.   |
| Palawan                           | 24                             | 1,226,328        |   |             | 458,497          | 37.4        | 456,475          | 37.2        | 123,879        | 10.1       | 187,477         | 15.3        |
| Negros Occidental                 | 32                             | 3,208,856        |   |             | 1,431,105        | 44.6        | 902,945          | 28.1        | 302,976        | 9.4        | 571,830         | 17.8        |
| Sarangani and General Santos City | 8                              | 1,234,231        | 1,375   | 0.11        | 667,350          | 54.1        | 461,862          | 37.4        | 54,807         | 4.4        | 48,837          | 4.0         |
| <b>Total</b>                      | <b>64</b>                      | <b>5,669,415</b> | <b>1,375</b>  | <b>0.02</b> | <b>2,556,952</b> | <b>45.1</b> | <b>1,821,283</b> | <b>32.1</b> | <b>481,662</b> | <b>8.5</b> | <b>808,144</b>  | <b>14.3</b> |

Benchmarking against the SDG target of universal access to sanitation, the largest gap is found in the province of Negros Occidental at 27%, followed by Palawan and Sarangani & General Santos City, at 25% and 8% gaps respectively (Table 13). None of the SW sites have septage management program. This reality hinders access to sustainable septage collection services (except for Alabel Sarangani with septage management program benefiting about 1,300 people).

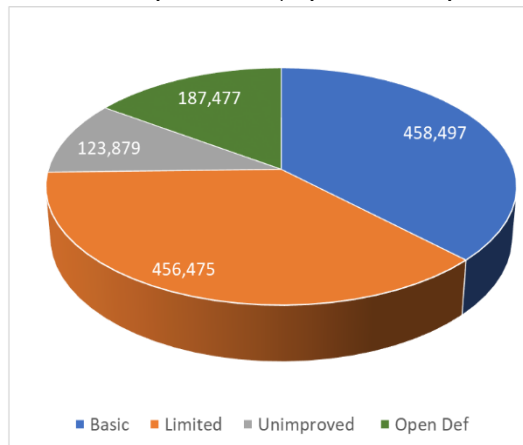
**Table 13: Baseline Against SDG Targets: Access to Safe Drinking Water Services by Project Site (Proportion of Population)**

| Indicator   | SDG Targets (% of Population) |             | Access by Project Site; % of Population (2019) |                   |                                 |
|---|-------------------------------|-------------|--|-------------------|---------------------------------|
|   | 2022 Target                   | 2030 Target | Palawan  | Negros Occidental | Sarangani & General Santos City |
| Households with septic tanks                          | 97%                           | 100%        | 75%  | 73%               | 92%                             |
| Households with access to septage collection services | 69%                           | 100%        |  |                   | 0.24%                           |
| LGUs declared Zero Open Defecation                    | 100%                          | 100%        |  |                   |                                 |

The following sections outline each project sites’ level of access to sanitation services, as well as the main constraints or challenges that impede access. This understanding will allow the SW project to better tailor activities/interventions for improved and expanded sanitation services.

**Province of Palawan**

About 75% of Palawan Province’s population (914,972 out of 1,226,3228) has access to either limited or basic sanitation services. An estimated ten percent (128,879) and 15% (187,477) are accessing limited sanitation services and practicing open defecation, respectively (Figure 9). The hotspot areas (top 10 municipalities/cities) with large numbers of people without access to



either limited, basic or safely managed sanitation services include Bataraza (37,550); Balabac (35,176); Puerto Princesa (29,016); Taytay (26,429); Brooke’s point (22,465); Coron (20,903); Rizal 20,392); Quezon (17,467); Sofronio Espanola (15,585); and El Nido (11,406)—see Figure 10. See Annex 11 for the detailed breakdown of population of each city / municipality in the province according to category of access to sanitation services.

Figure 9: Distribution of Population According to Access to Sanitation Service: Palawan 2019

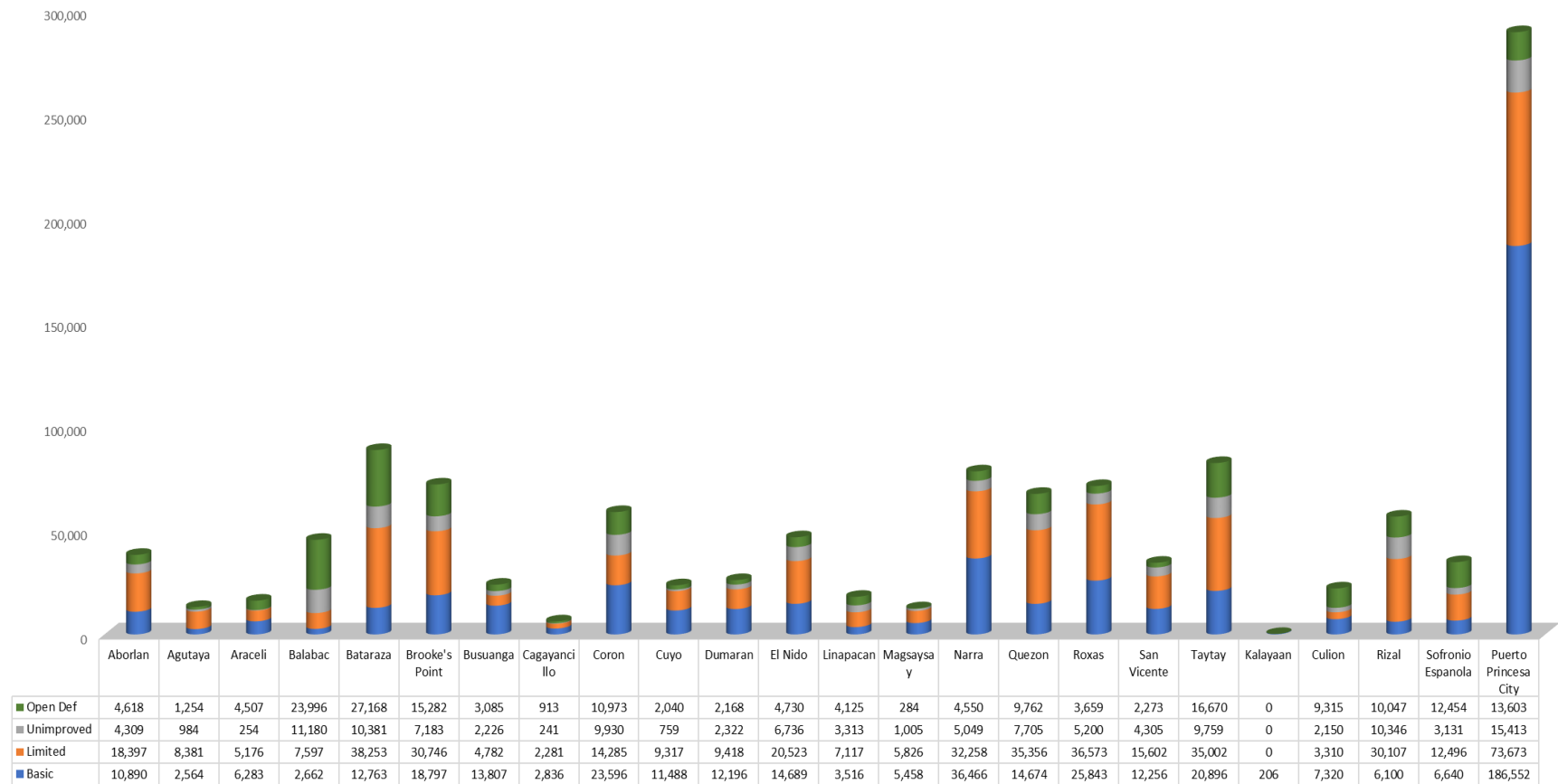


Figure 10: Distribution of Population According to Access to Sanitation Service; Palawan by City / Municipality 2019

The study identified various factors or constraints that affect the level and quality of access to sanitation services in Puerto Princesa, Dumarán and Taytay. These include (i) limited financial capacity of households to construct septic tanks or improve their existing sanitation facilities, (ii) improper sanitation and waste disposal practices in coastal areas, (iii) insufficient water sources especially in far flung areas, and (iv) some residences have no adequate spaces for the construction of septic tanks. The key areas or aspects of assistance to address the said constraints include (i) access to financing; (ii) people’s awareness on sanitation; (iii) WSS service development and improvement; and (iv) capacity building for WSS service institutions (LGUs and WDs). The summary of issues / constraints, actions and assistance needed for the expansion and improvement of the sanitation services are summarized in Table 14.

**Table 14: Major Factors / Constraints Affecting Level of Access to Sanitation Services, Actions Being Undertaken and Potential Assistance: Province of Palawan According to City / Municipality<sup>9</sup>**

| Matters Discussed   | Scenario by Site |         |        |
|---|------------------|---------|--------|
|   | Puerto Princesa  | Dumarán | Taytay |
| <b>A. Key Constraints / Challenges</b>  |                  |         |        |
| Limited financial capacity of households to construct septic tank and sanitation facility   | √                | √       | √      |
| Limited space for septic tank (residence)   | √                | √       | √      |
| Households in the coastal areas are used to disposing their waste directly to the sea water | √                | √       | √      |
| Insufficient source of water service in the far flung areas                                 | √                | √       | √      |
| <b>B. Key Actions Being Undertaken</b>  |                  |         |        |
| IEC / seminar on importance of proper sanitation and proper waste disposal among households | √                |         | √      |
| Distribution of toilet bowls  | √                | √       | √      |
| Funding / implementation of Zero Open Defecation (ZOD) Program                              | √                |         | √      |
| Enforcement of ordinance on sanitation  | √                |         | √      |
| LGU providing free cement and pipes to some households for the construction of septic tank  |                  |         | √      |

<sup>9</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

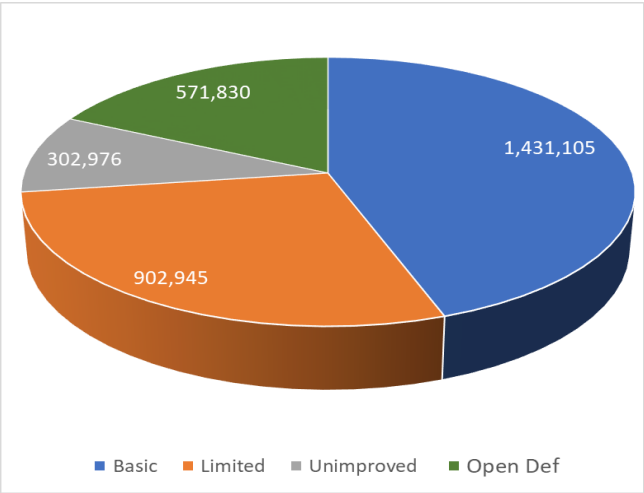


| Matters Discussed  | Scenario by Site |         |        |
|--|------------------|---------|--------|
|  | Puerto Princesa  | Dumaran | Taytay |
| Partnering with A Single Drop for Safe Water (ASDSW) organization in its water, sanitation, and hygiene (WASH) activities  | √                |         |        |
| Septage, Sewerage and Sanitation project   | √                |         |        |
| LGU and WD having a <u>Joint Venture Agreement</u> (JVA) with the consortium of Eco-System Technologies Inc.   | √                |         |        |
| <b>C. Potential Assistance (Way Forward)</b>   |                  |         |        |
| Pamphlets and any visual aids with water and sanitation information.   | √                | √       |        |
| Financial assistance to the households in the construction of septic tanks and toilets.  | √                | √       | √      |
| Assistance on the JVA  | √                |         |        |
| Training of the sanitary inspectors and barangay volunteers on the environmental sanitation program (e.g. proper sanitation practices, importance of having proper sanitation) |                  | √       |        |

The reference of the information that was documented during the IDIs / FGDs are provided in Annex 12.

**Province of Negros Occidental**

About 73% of Negros Occidental Province’s population (2,334,050 out of 3,208,856) has access to either limited or basic sanitation services. The other 302,976 (9%) and 571,830 (18%) are accessing limited sanitation services and practicing open defecation respectively (Figure 11). The



hotspot areas (top 10 municipalities / cities) with large number of people without access to either limited, basic or safely managed sanitation services include Sagay (70,170); San Carlos (65,179); Cadiz (60,951); Kabankalan (54,306); Calatrava (53,999); Escalante (44,668); Himamaylan (38,664); Bago (37,991); Bacolod (33,598); and Cauayan (33,001)—see Figure 12. See Annex 13 for the detailed breakdown of population of each city / municipality in the province according to category of access to sanitation services.

Figure 11: Distribution of Population According to Access to Sanitation Service: Negros Occidental 2019

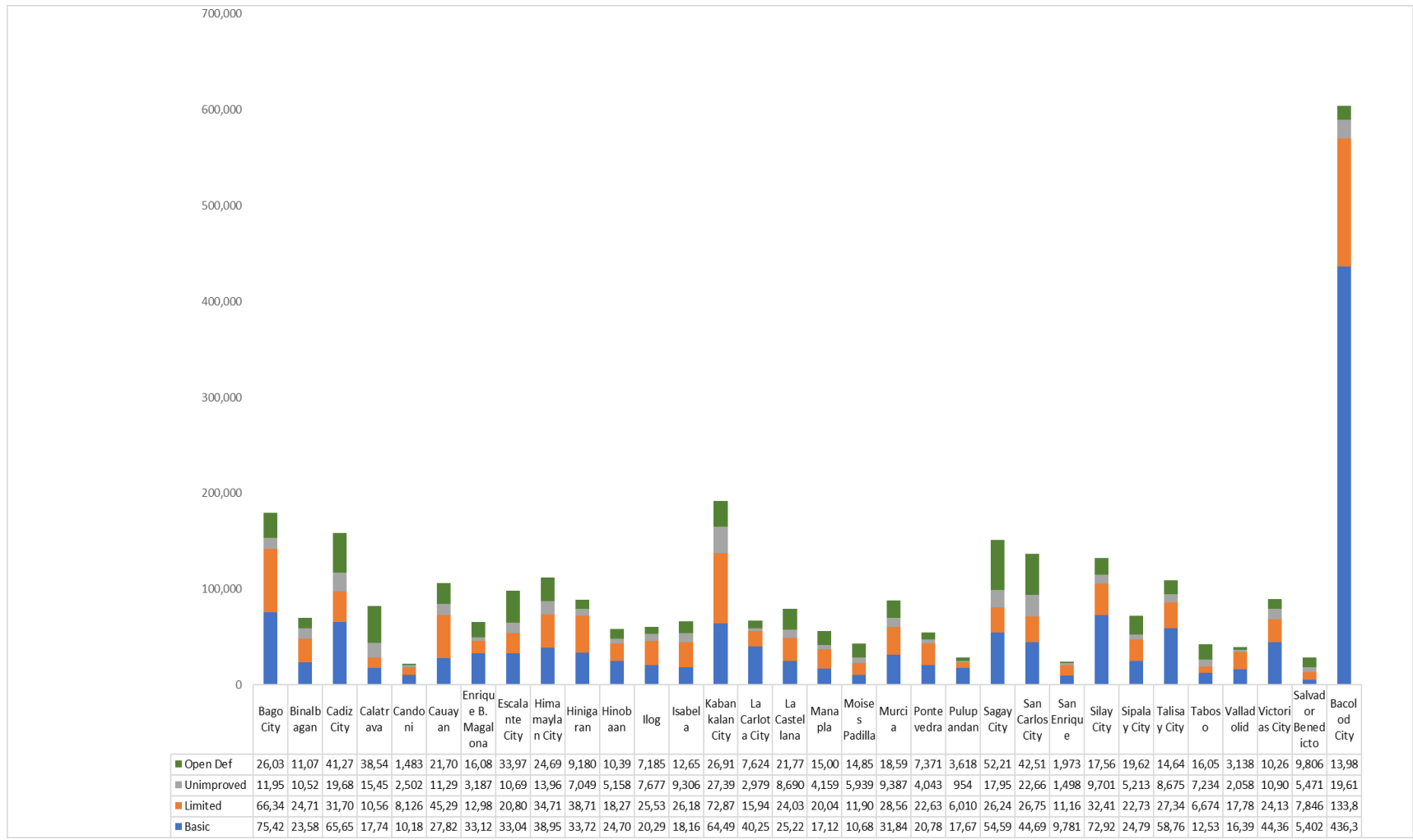


Figure 12: Distribution of Population According to Access to Sanitation Service; Province of Negros Occidental by City / Municipality 2019

The key factors or constraints that affect the level and quality of access to sanitation services in the cities / municipalities of Bacolod, Bago, Don Salvador, Isabela, and Murcia include (i) limited financial capacity of households to construct septic tanks or improve their existing sanitation facilities, (ii) insufficient water service; (iii) lack of knowledge or appreciation of people on the importance of sanitary facilities; (iv) some residences have no enough space for septic tank. The key areas or aspects of assistance to address the said constraints include (i) access to financing; (ii) people's awareness on proper sanitation and waste disposal; (iii) WSS service development and improvement; and (iv) capacity building for WSS service institutions (LGUs and WDs). The summary of issues / constraints, actions and assistance needed for the expansion and improvement of the sanitation services are summarized in Table 15.

**Table 15: Major Factors / Constraints Affecting Level of Access to Sanitation Services, Actions Being Undertaken and Potential Assistance (Way Forward): Province of Negros Occidental According to City / Municipality<sup>10</sup>**

| Matters Discussed  | Situation by Site |      |                        |         |        |
|--|-------------------|------|------------------------|---------|--------|
|  | Bacolod           | Bago | Don Salvador Benedicto | Isabela | Murcia |
| <b>A. Key Constraints / Challenges</b>   |                   |      |                        |         |        |
| Limited space for septic tank (residence)  | √                 |      | √                      |         |        |
| Not owing the lands where people reside  | √                 |      | √                      | √       | √      |
| Limited financial capacity of households to construct septic tank and sanitation facility      | √                 | √    | √                      | √       |        |
| Insufficient water service   |                   |      |                        | √       |        |
| Poor road condition / difficulty in transporting construction materials to the far flung areas |                   |      |                        | √       |        |
| Lack of knowledge / appreciation of the importance of having a toilet facility                 |                   | √    |                        | √       | √      |
| <b>B. Key Actions Being Undertaken</b>   |                   |      |                        |         |        |

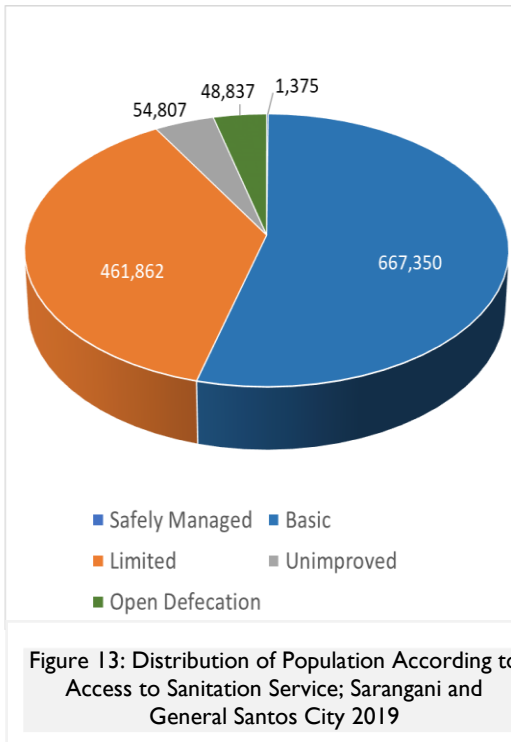
<sup>10</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

| Matters Discussed  | Situation by Site |      |                        |         |        |
|--|-------------------|------|------------------------|---------|--------|
|  | Bacolod           | Bago | Don Salvador Benedicto | Isabela | Murcia |
| IEC / seminar on importance of proper sanitation and proper waste disposal among households                        |                   | √    | √                      | √       | √      |
| Distribution of toilet bowls   | √                 | √    |                        | √       | √      |
| LGU providing hose to connect households with the water source   |                   |      |                        | √       |        |
| Funding / implementation of Zero Open Defecation (ZOD) Program   |                   | √    |                        | √       |        |
| LGU providing free cement, pipes and others to some households for the construction of septic tank                 | √                 |      |                        | √       |        |
| LGU providing assistance to the households in transporting construction materials (areas with poor road condition) |                   |      |                        | √       |        |
| <b>C. Potential Assistance (Way Forward)</b>   |                   |      |                        |         |        |
| Additional budget for IEC  |                   |      | √                      |         |        |
| Additional funds for the distribution of toilet bowls  |                   |      |                        | √       |        |
| Financial assistance to the households in the construction of septic tanks and toilets.                            |                   | √    |                        | √       | √      |
| Improvement of road condition  |                   |      |                        | √       |        |

The reference of the information that was documented during the IDIs / FGDs are provided in Annex 14.

## Province of Sarangani and General Santos City

Of the 1,234,231 population, 461,862 (37%), 667,350 (54%) and 1,375 (0.11%) utilize limited, basic and safely managed sanitation services, respectively.



Access to safely managed sanitation services is recorded in the Municipality of Alabel. Since 2008, the municipality has an operational Septage Treatment Facility (STF) that serves 1,375 people. The STF was constructed through a grant from JICA. The description of said facility is provided in Annex 15 for reference.

The remaining population are those relying on unimproved sanitation services (54,807 or 4.4%) or those that are without any sanitation facility or practice open defecation (48,837 or 4%). Figure 13 depicts the distribution of sanitation services based on population. The City of General Santos has the largest number of people without access to safe sanitation services (unimproved/open defecation) with 27,668 people. General Santos City is followed by Alabel (16,150), Glan (15,095), Kiamba (12,800) and others (Figure 14). Annex 16 also provides a detailed breakdown of sanitation service type by population within each Provincial city/municipality.

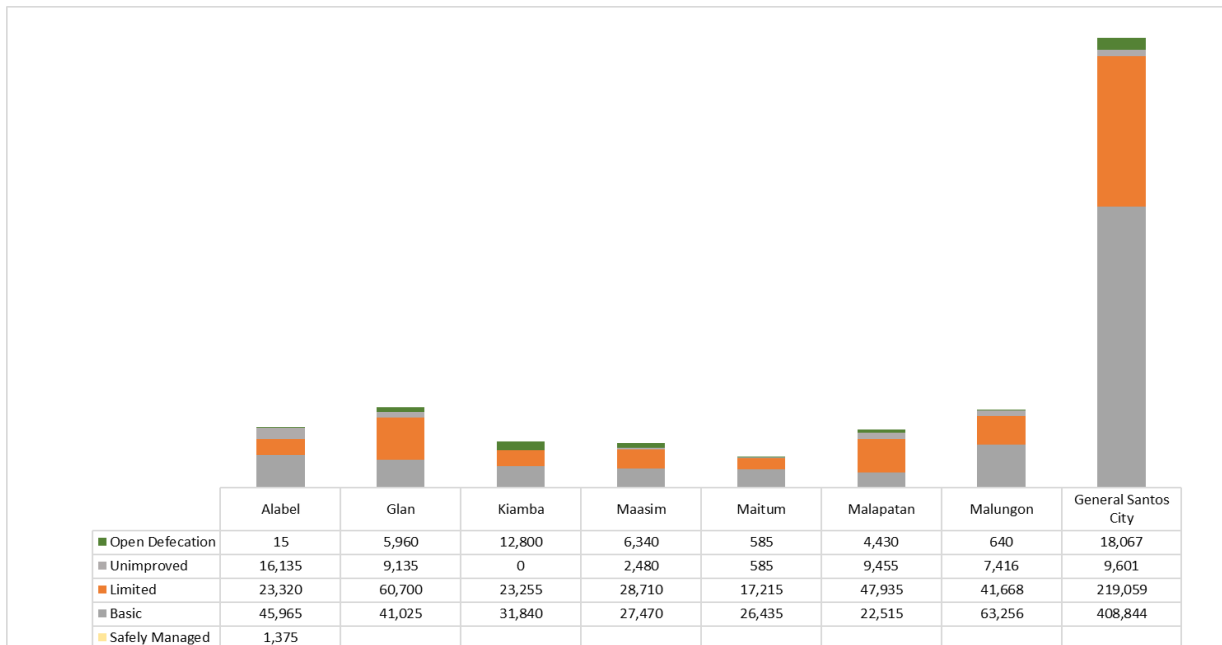


Figure 14: Distribution of Population According to Access to Sanitation Service; Province of Sarangani (by City / Municipality) and General Santos City; 2019

Various factors or constraints affecting the level and quality of access to sanitation services in General Santos City, and municipalities of Alabel, Malungon, and Kiamba include (i) limited

financial capacity of households to construct septic tanks or improve their existing sanitation facilities, (ii) insufficient water service, and (iii) lack of knowledge or appreciation of people on the importance of sanitary facilities. The key areas or aspects of assistance to address the said constraints include (i) access to financing; (ii) people’s awareness on proper sanitation and waste disposal; (iii) WSS service development and improvement; and (iv) capacity building for WSS service institutions (LGUs and WDs). The summary of issues / constraints, actions and assistance needed for the expansion and improvement of the sanitation services are summarized in Table 16.

**Table 16: Major Factors/Constraints Affecting Level of Access to Sanitation Services, Actions Being Undertaken and Potential Assistance (Way Forward): General Santos City and Province of Sarangani According to City / Municipality<sup>11</sup>**

| Matters Discussed   | Situation by Site   |        |          |        |        |
|---|---------------------|--------|----------|--------|--------|
|   | General Santos City | Alabel | Malungon | Maasim | Kiamba |
| <b>A. Key Constraints/Challenges</b>  |                     |        |          |        |        |
| Limited financial capacity of households to construct septic tank and sanitation facility | √                   | √      | √        | √      | √      |
| Insufficient water service  |                     | √      | √        | √      | √      |
| Lack of knowledge/appreciation of the importance of having a toilet facility              | √                   | √      | √        | √      | √      |
| <b>B. Key Actions Being Undertaken</b>  |                     |        |          |        |        |
| IEC/seminar on importance of proper sanitation and proper waste disposal among households |                     |        |          | √      |        |
| Distribution of toilet bowls  |                     |        |          | √      |        |
| Passage of Environment Code   | √                   |        |          |        |        |
| Ongoing preparation of LSPP   | √                   |        |          |        |        |
| Establishment of City Septage Treatment Facility (for bidding)                            | √                   |        |          |        |        |
| Social marketing campaign materials on sanitation   | √                   |        |          |        |        |

<sup>11</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

| Matters Discussed  | Situation by Site   |        |          |        |        |
|--|---------------------|--------|----------|--------|--------|
|  | General Santos City | Alabel | Malungon | Maasim | Kiamba |
| Funding / implementation of Zero Open Defecation (ZOD) Program   |                     | √      | √        | √      | √      |
| Provision of funds for the construction of communal septic tanks using PLGU design for communal septic tanks |                     |        |          |        | √      |
| Engagement/Designation of barangay sanitary inspectors   |                     | √      |          |        |        |
| Reward system for the BLGUs on ZOD grade level   |                     |        | √        |        |        |
| BLGU provides households with construction materials for sanitary toilets (for payment on agreed terms)      |                     |        | √        |        |        |
| <b>C. Potential Assistance (Way Forward)</b>   |                     |        |          |        |        |
| IEC/seminar on the importance of proper sanitation and proper waste disposal among households                | √                   |        |          |        |        |
| Retrofitting of existing sanitary facilities   | √                   |        | √        | √      | √      |
| Financial assistance to the households in the construction of septic tanks and toilets.                      |                     | √      |          |        |        |
| Capacity building (Operation and maintenance training on SpTP, others)                                       | √                   | √      | √        | √      | √      |

\*The supporting IDIs/FGDs conducted to develop this table are provided in Annex 17.

### **C. Outcome 1.4: Number of people receiving improved sanitation service quality from an existing "limited" or "basic" service as a result of USG assistance**

The baseline information for this indicator focuses on the key issues, constraints and challenges related to the quality of sanitation services. However, information on the technical design of the septic tanks are mostly anecdotal. LGUs do not have a record of the septic tank as-built designs.

The general information service-related issues resulting from limited or basic sanitation facilities were obtained from IDIs conducted by the SW project site teams with LGU officials and staff, especially those from City/Municipal Health Offices.

- (i) Many septic tanks are inaccessible due to poor urban planning and/or lack of support infrastructure. In some areas, the vacuum trucks cannot pass through the narrow streets. In other areas, structures and/or other obstructions on or around septic tanks impede access and desludging activities. Moreover, manholes are rarely, if ever, present—again, limiting access to needed desludging services.
- (ii) Many of the septic tanks are not compliant with the provisions of the National Building Code (i.e. septic tanks should be sealed and should have at least two chambers) or the Sanitation Code of the Philippines (i.e. septic tanks should be at least 25 meters away from a water source).

During IDIs, LGUs helped to identify five critical areas for assistance to improve access to sanitation services:

- (i) Assistance with the preparation of Feasibility Studies (FS) and Detailed Engineering Designs (DEDs) for the development of septage management program;
- (ii) Support LGUs in their efforts to comply with requirements to access financing from various financing institutions to implement sanitation programs and projects, such as preparation of business plans, FS, etc;
- (iii) Train LGUs in sanitation planning and design, project preparation and implementation, including construction supervision of sanitation facilities (treatment plants, communal septic tanks, etc.);
- (iv) Support LGUs in assessing existing household sanitation schemes compliance with Department of Health (DOH) standards, and recommend proposed interventions to promote household compliance with DOH standards;
- (v) Assist LGUs and WSPs with IEC campaigns to help increase awareness among citizens on the benefits of proper sanitation.

An overview of each target Province's status on access to sanitation services, actions being undertaken and assistance towards better and greater delivery of sanitation services, including General Santos City, are provided in Tables 17, 18 and 19. Detailed information collected during the IDIs FGDs are provided in Annexes 18, 19 and 20.



**Table 17: Key Problems of Access to Existing Sanitation Services, Actions Being Undertaken and Potential Assistance (Way Forward): Province of Palawan According to City / Municipality<sup>12</sup>**

| Matters Discussed  | Situation by Site |         |        |
|--|-------------------|---------|--------|
|  | Puerto Princesa   | Dumaran | Taytay |
| <b>A. Key Problems on Access to Existing Sanitation Services / Facilities</b>  |                   |         |        |
| Unpleasant odor due to leakage from septic tanks of existing toilet facilities (some residents)  | √                 |         | √      |
| With toilet but no septic tank due to limited space in the residence (some residents)  | √                 |         | √      |
| Septic tanks already full (some residents)   | √                 |         |        |
| Toilet bowls already damaged (some residents)  |                   | √       |        |
| Insufficient water supply hinders proper sanitation practices  | √                 | √       | √      |
| <b>B. Key Actions Being Undertaken</b>   |                   |         |        |
| Sanitary inspectors conduct inspection in the area and inform the concerned households on the actions / solutions that need to be done (e.g. address leakage of septic tank) | √                 |         |        |
| Expansion of Level III water system in rural barangays (to promote proper sanitation practices)  | √                 |         |        |
| Provision of free toilet bowls to households.  |                   | √       |        |
| Conduct of IEC on the proper sanitation practices among households.  |                   | √       | √      |
| Annual monitoring / inventory of households with and without toilet.   |                   | √       | √      |
| <b>C. Potential Assistance (Way Forward)</b>   |                   |         |        |
| Provision / Construction of communal septic tank.  | √                 |         |        |
| Provision of pamphlets and any visual aids with water and sanitation information is needed.  |                   | √       |        |

<sup>12</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

**Table 18: Key Problems of Access to Existing Sanitation Services, Actions Being Undertaken and Potential Assistance (Way Forward): Province of Negros Occidental According to City / Municipality<sup>13</sup>**

| Matters Discussed  | Situation by Site |      |                        |         |        |
|--|-------------------|------|------------------------|---------|--------|
|  | Bacolod           | Bago | Don Salvador Benedicto | Isabela | Murcia |
| <b>A. Key Service Quality Problems</b>   |                   |      |                        |         |        |
| With toilet but no septic tank due to limited space in the residence (some residents)                            |                   |      |                        |         | √      |
| Insufficient water supply hinders proper sanitation practices  |                   | √    |                        | √       | √      |
| Lack of financial resources / capacity to upgrade / improve septic tank (some households)                        | √                 |      | √                      | √       |        |
| <b>B. Key Actions Being Undertaken</b>   |                   |      |                        |         |        |
| Provision of free toilet bowls to households.  |                   |      | √                      | √       |        |
| Conduct of IEC on the proper sanitation practices among households.  | √                 |      |                        | √       | √      |
| <b>C. Potential Assistance (Way Forward)</b>   |                   |      |                        |         |        |
| Provision / Construction of communal septic tank.  | √                 |      |                        |         |        |
| Households to access financial assistance (e.g. loan) for the construction of sanitation facility / septic tanks | √                 | √    | √                      |         | √      |

<sup>13</sup> The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent.

**Table 19: Key Problems of Access to Existing Sanitation Services, Actions Being Undertaken and Potential Assistance (Way Forward): General Santos City and Province of Sarangani According to Municipality**

| Matters Discussed   | Situation by Site   |           |                 |        |        |
|---|---------------------|-----------|-----------------|--------|--------|
|   | General Santos City | Sarangani |                 |        |        |
|   |                     | Alabel    | Malungon        | Maasim | Kiamba |
| <b>A. Key Service Quality Problems</b>  |                     |           |                 |        |        |
| Lack of financial resources / capacity to construct / upgrade / improve septic tank (some households) | √                   | √         | √               | √      | √      |
| Lack of knowledge / appreciation of the importance of having a toilet facility                        | √                   | √         | √               | √      | √      |
| SpTP not operational  |                     |           |                 | √      |        |
| <b>B. Key Actions Being Undertaken</b>  |                     |           |                 |        |        |
| Desludging of waste   |                     | √         | √ <sup>14</sup> |        |        |
| Provision of free toilet bowls to households.   |                     |           |                 | √      |        |
| Conduct of IEC on the proper sanitation practices among households.                                   |                     |           | √               | √      |        |
| On-going preparation of LSSP  | √                   |           |                 |        |        |
| Formulated MW4SP  |                     |           | √               | √      | √      |
| Strict implementation of ZOD compliance of new building applications                                  |                     |           |                 |        | √      |
| <b>C. Potential Assistance (Way Forward)</b>  |                     |           |                 |        |        |
| Conduct of Integrated WSS   | √                   |           |                 |        |        |
| Sectoral Planning for TWG   | √                   |           |                 |        |        |
| Retrofitting of existing sanitary facilities  |                     | √         | √               | √      | √      |
| Technical training for managing units of sanitary facilities  |                     | √         |                 |        |        |

<sup>14</sup> The desludgers of the municipality of Malungon proceed to the Municipality of Alabel for treatment. A tipping fee is imposed by the municipal government of Alabel for rendering treatment service.

| Matters Discussed  | Situation by Site   |           |          |        |        |
|--|---------------------|-----------|----------|--------|--------|
|  | General Santos City | Sarangani |          |        |        |
|  |                     | Alabel    | Malungon | Maasim | Kiamba |
| Operation and maintenance training on SpTP / sanitary facilities                       |                     | √         | √        | √      |        |
| Maximize operation of SpTP   |                     | √         |          |        |        |
| Enhance operational capacity of SpTP   |                     | √         |          |        |        |
| Link HHs to possible financial institutions for the improvement of sanitary facilities |                     | √         | √        | √      | √      |
| Implement rewards and recognition system   |                     |           | √        | √      |        |
| Technical orientation on LSSP, PHATS and amendment of municipal ordinance on ZOD       |                     |           | √        | √      | √      |
| Strengthen advocacy campaigns on sanitary toilets                                      |                     |           |          | √      |        |

- **Intermediate Result I.1: Number of WSPs with increased operational, technical and financial management capacity**

This section describes the critical issues/challenges, as well as the assistance that various WSPs<sup>15</sup> are likely to need to strengthen or improve their operational, technical and financial management capacity in the delivery of WSS services. The information garnered will allow the SW project to develop and align its tailored technical assistance packages to address issues/challenges identified and be more responsive to the needs of our beneficiaries. The findings are as follows:

**Operational Management Capacity**

Operational management capacity is directly correlated to WSPs ability to provide efficient and sustainable services. Key issues/challenges affecting the management of water services include (i) poor capacity for non-revenue water management; (ii) non-automated billing systems resulting in less than optimum collection efficiency; (ii) no water safety plans, a requirement of the Department of Health and LWUA to ensure safe drinking water throughout the system; (iii) low staff productivity or capacity resulting in inadequately performance; (iv) poor asset management; and (v) lack of knowledge for planning and operation in absence of wastewater treatment services such as septage management or sewerage services.

Strengthening the operational management capacity of WSPs involves the application of technical assistance to a broad range of areas, such as preparation of strategic business plans, asset management, financial management, various technical requirements, and improving customer relations among others.

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<sup>15</sup> Focused on Water Districts and LGU-Run Water Supply Systems

Among LGU-run utilities, operating capacity is hampered by the governance structure. The utilities are not ring-fenced, making it difficult to monitor performance. Hence, ring-fencing of accounts, and ultimately establishing an independent economic enterprise, is a critical step that must be undertaken by the LGUs.

The summary of strengths, gaps (issues and challenges), on-going efforts and targeted assistance that have been identified in consultation with the WSPs and LGUs across the project sites are provided in Annex 21 for reference.

- **Intermediate Result 1.2: Number of coordination mechanisms institutionalized at the local, watershed and regional levels**

The SW activities will involve assistance to LGUs and other bodies to institutionalize various coordination mechanisms for WSS and WRM activities at various levels (local/watershed/regional). These include Watershed Management Councils (WMCs), river basin organizations, Protected Area Management Boards (PAMB), local water alliances, LGUs and WSPs.

The study has identified 16 coordination mechanisms prevailing in the targeted sites, of which, seven (7) are at the City/Municipal level, such as Municipal Integrated Water, Sanitation and Hygiene (iWASH) Council; three (3) at the watershed level (e.g. watershed/river basin management councils); two (2) at the provincial level (e.g., association of WDs, technical working groups for watershed management planning) and four (4) at the regional level (e.g., PAMB). See Table 20 for a detailed overview of the coordination mechanisms distributed across Provinces.

**Table 20: Number of Coordination Mechanisms Created According to Project Site**

| Project Sites                                 | Coordination Mechanisms |                 |                  |                |           |
|---|-------------------------|-----------------|------------------|----------------|-----------|
|   | Local / LGU Level       | Watershed Level | Provincial Level | Regional Level | Total     |
| Province of Palawan                           | 4                       |                 | 1                | 2              | 7         |
| Province of Negros Occidental                 | 1                       | 2               | 1                | 1              | 5         |
| Province of Sarangani and General Santos City | 2                       | 1               |                  | 1              | 4         |
| <b>Total</b>                                  | <b>7</b>                | <b>3</b>        | <b>2</b>         | <b>4</b>       | <b>16</b> |

While many in number, the existing coordination mechanisms have not always translated into improved planning and amplified impact, as intended. There are many reasons for this, but some include: non-functioning management councils, non-existent or outdated plans, limitation on technical capacity and human resources needed to prepare and implement plans. The list and description of each mechanism, including relevance, issues, on-going efforts, and the technical assistance needed to strengthen its efficacy, are provided in Annex 22.

- **Intermediate Outcome I.3: Value of new funding mobilized to water and sanitation sectors.**

Through the SW project activities, the LGUs and WSPs will mobilize funding for the WSS sectors by generating resources from various initiatives and gain access to broader financing windows. The baseline data for this indicator is zero, considering the zero-based budgeting policy of the government for annual appropriations.

Presently, the financial resources available to LGUs include (i) internal revenue allotment (IRA), of which at least 20% should be allocated for capital investments—referred to as the Development Fund; (ii) external sources i.e. funding from national government agencies, loans and grants; (iii) other sources i.e. sporadic grants from the private sector; commercial loans; and private equity under PPP arrangements. However, among these sources, LGUs largely rely on the IRA and national government grants. Investment in the sector has been historically low.

The levels of investment for WSS in the priority sites were gathered from Annual Investment Plans of LGUs, national government assistance to LGUs from the 2019 budget, and the annual capital expenditure budget of water districts and other water service providers.

#### **LGU Investment in WSS Services<sup>16</sup>**

The total budgets<sup>17</sup> of the three (3) Provincial LGUs and 16 City/Municipal LGUs (including General Santos City) amounted to [REDACTED]<sup>18</sup>. Of this amount, only 2,75% or about [REDACTED] was earmarked for expansion and improvement of WSS services (Figure 15). About [REDACTED] or 79% of funding was intended to promote access to safe drinking water, with [REDACTED] allocated for the construction of new water supply systems and [REDACTED] allocated to improving existing water supply systems (e.g. rehabilitation and/or expansion of service areas – see Figure 16).

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<sup>16</sup> Accounts for concrete investments to the WSS sectors, thus, excludes payment for salaries, workshops, IEC and others.

<sup>17</sup> 2019 budgets are comprised of current apportionments and continuing appropriations (portion of 2018 current appropriations that was unutilized and carried over for utilization in 2019)

<sup>18</sup> Obtained from various records and documents (e.g., Annual Investments Plans, others)

The remaining [REDACTED] was allocated to sanitation services improvement (e.g. STFs, toilet bowl distribution, etc), amounting to 19% of the budget (Table 21).

As shown in Table 21, Palawan Province LGUs in priority areas (PLGU and 3 City/Municipal LGUs) account for the highest level of investment at about [REDACTED].

The LGUs of Negros Occidental (PLGU and 8 City/Municipal Governments), in contrast, have the lowest level of investment at [REDACTED].

The WSS projects funded are listed in Annex 23 for reference.



Figure 15: CY 2019 LGU Investments to the WSS Sectors: Province of Palawan (In Million Pesos)

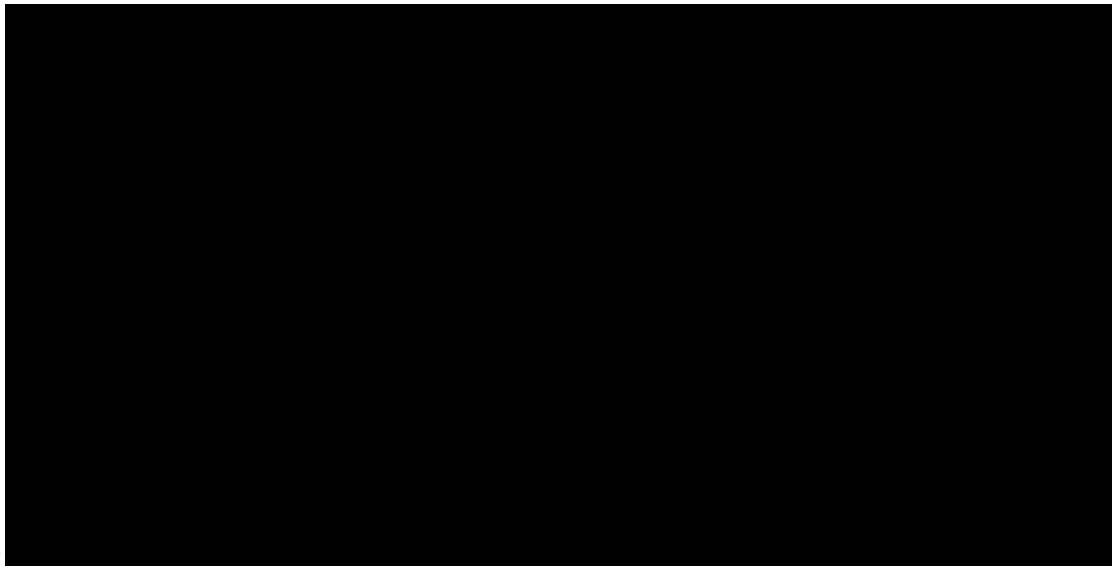


Figure 16: CY 2019 LGU Investments for the Construction and Improvement of Water Supply Systems (In Million Pesos)

**Table 21: Cost of LGU Investments to the WSS Sectors (In Million Pesos by LGU CY 2019)**

| LGU                                  | 2019 Total Budget <sup>19</sup> | WSS Investments <sup>20</sup> |                             |                      |  |
|--------------------------------------|---------------------------------|-------------------------------|-----------------------------|----------------------|--|
|                                      |                                 | Water Supply Projects         | Sanitation Service Projects | Total                | Percent (%) (WSS Investments VS 2019 Total Budget) |
| <b>Palawan Province<sup>21</sup></b> |                                 |                               |                             |                      |  |
| Provincial Government                | 3,435.23                        | 459.57                        | 161.68                      | 621.25 <sup>22</sup> | 18.08%   |
| Puerto Princesa                      | 6,693.45                        | 11.70                         | 2.69                        | 14.39                | 0.21%  |
| Dumaran                              | 193.71                          | 6.19                          | 0.28                        | 6.47                 | 3.34%  |
| Taytay                               | 799.98                          | 44.13                         | 6.71                        | 50.84                | 6.35%  |
| <b>Sub-total</b>                     | <b>11,122.37</b>                | <b>521.59</b>                 | <b>171.36</b>               | <b>692.95</b>        | <b>6.23%</b>                                       |
| <b>Negros Occidental</b>             |                                 |                               |                             |                      |  |
| Provincial Government                | 4,001.92                        | 2.00                          | 5.40                        | 7.40                 | 0.18%  |
| Bacolod City                         | 4,581.02                        | 54.62                         |                             | 54.62                | 1.19%  |
| San Carlos City                      | 1,694.14                        | 6.14                          | 1.10                        | 7.24                 | 0.43%  |
| Silay City                           | 815.49                          | 1.50                          | 0.64                        | 2.14                 | 0.26%  |
| Talisay City                         | 1,048.72                        | 10.00                         | 0.00                        | 10.00                | 0.95%  |
| Bago City                            | 914.23                          | 20.49                         | 1.10                        | 21.59                | 2.36%  |
| Isabela                              | 193.49                          | 8.46                          |                             | 8.46                 | 4.37%  |
| Murcia                               | 293.71                          | 0.00                          | 0.50                        | 0.50                 | 0.17%  |
| Don Salvador Benedicto               | 133.61                          | 7.00                          | 0.10                        | 7.10                 | 5.31%  |
| <b>Sub-total</b>                     | <b>13,676.33</b>                | <b>110.21</b>                 | <b>8.84</b>                 | <b>119.05</b>        | <b>0.87%</b>                                       |

<sup>19</sup> Taken from the 2019 Audited Report of the Commission on Audit (COA) / LGU Budget Records

<sup>20</sup> Taken from the 2019 Annual Investments Plans (AIPs) of the LGUs.

<sup>21</sup> Municipality of Coron (part of Year 1 sties) not yet included due to pending data on 2019 budget.

<sup>22</sup> A large proportion of the budget comes from the MDFO loans



| LGU                                 | 2019 Total Budget <sup>19</sup> | WSS Investments <sup>20</sup> |                             |               |  |
|-------------------------------------|---------------------------------|-------------------------------|-----------------------------|---------------|--|
|                                     |                                 | Water Supply Projects         | Sanitation Service Projects | Total         | Percent (%) (WSS Investments VS 2019 Total Budget) |
| <b>General Santos and Sarangani</b> |                                 |                               |                             |               |  |
| General Santos                      | 3,866.19                        | 16.01                         | 3.47                        | 19.48         | 0.50%  |
| Sarangani Provincial Government     | 1,557.23                        | 15.3                          |                             | 15.3          | 0.98%  |
| Alabel                              | 569.45                          | 17.7                          | 0.0275                      | 17.7275       | 3.11%  |
| Maasim                              | 269.32                          | 1.35                          | 0                           | 1.35          | 0.50%  |
| Malungon                            | 405.01                          | 3.5                           | 0.4                         | 3.9           | 0.96%  |
| Kiamba                              | 202.59                          | 0                             | 0                           | 0             | 0.00%  |
| <b>Sub-total</b>                    | <b>6,869.79</b>                 | <b>53.86</b>                  | <b>3.90</b>                 | <b>57.76</b>  | <b>0.84%</b>                                       |
| <b>TOTAL</b>                        | <b>31,668.49</b>                | <b>685.66</b>                 | <b>184.10</b>               | <b>869.76</b> | <b>2.75%</b>                                       |

### WSS Funding from National Government, Water Districts and other Service Providers

The data gathered on investments made in the WSS sector apart from LGU budgets or appropriations were taken from 9 of the 15 cities/municipalities<sup>23</sup> prioritized in Year I of the SW project. In 2019, investments made by non-LGU institutions in support of development, expansion or upgrading of WSS services amounted to roughly PhP 1.64 billion. In particular, WDs account for 72% of these investments (PhP 1.18 billion); 5% (PhP105 million) reflect investments made by private service providers; and the remaining amount come from national government assistance to LGUs, such as the *Salintubig* Program (Figure 17). See table 22 for the breakdown of investments across LGUs according to fund source.

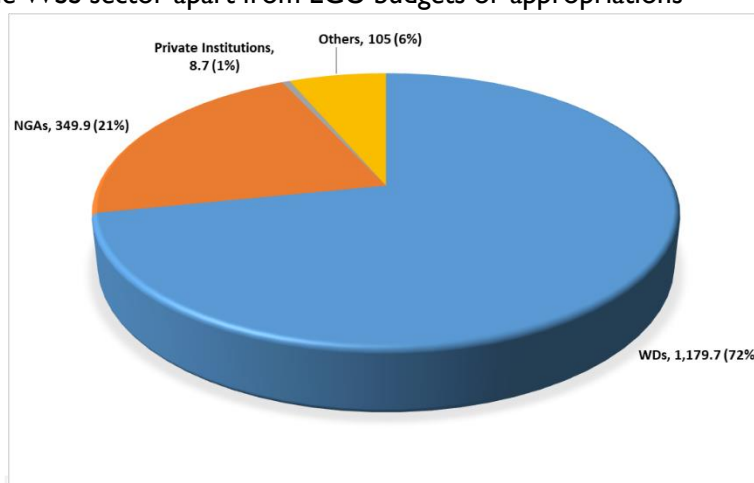


Figure 17: Non-LGU Investments to the WSS Sectors in Year I Project Targeted Areas (In Million Pesos)

<sup>23</sup> Data gathering concerning the other 6 cities / municipalities is yet to be completed in January 2021 (to be included in the Final Baseline Assessment Report)

**Table 22: Non-LGU Investments to the WSS Sectors in Million Pesos by Fund Source According to LGUs Supported**

| Sites                                      | Funding by Source |                     |                           |               |                 |
|--|-------------------|---------------------|---------------------------|---------------|-----------------|
|  | Water District    | National Government | Private Service Providers | Others        | Total           |
| <b>Palawan</b>                             |                   |                     |                           |               |                 |
| Puerto Princesa                            | 925.20            |                     | 8.69                      |               | 933.90          |
| Dumaran                                    |                   | 1.64                |                           |               | 1.64            |
| <b>Sub-total</b>                           | <b>925.20</b>     | <b>1.64</b>         | <b>8.69</b>               |               | <b>935.54</b>   |
| <b>Negros Occidental</b>                   |                   |                     |                           |               |                 |
| Isabela                                    |                   | 11.26               |                           |               | 11.26           |
| Don Salvador                               |                   | 48.00               |                           |               | 48.00           |
| <b>Sub-total</b>                           |                   | <b>59.26</b>        |                           |               | <b>59.26</b>    |
| <b>General Santos City &amp; Sarangani</b> |                   |                     |                           |               |                 |
| General Santos                             | 254.50            | 18.76               |                           |               | 273.26          |
| Alabel                                     |                   | 42.04               |                           |               | 42.04           |
| Maasim                                     |                   | 51.75               |                           |               | 51.75           |
| Malungon                                   |                   | 152.87              |                           | 105.00        | 257.87          |
| Kiamba                                     |                   | 23.61               |                           |               | 23.61           |
| <b>Sub-total</b>                           | <b>254.50</b>     | <b>289.03</b>       |                           | <b>105.00</b> | <b>649.73</b>   |
| <b>TOTAL</b>                               | <b>1,179.70</b>   | <b>349.93</b>       | <b>8.69</b>               | <b>105.00</b> | <b>1,643.33</b> |

**Key Concerns that Affect Funding to the WSS Sectors**

IDIs with LGUs and WDs provide SW with important contextual understanding of what hinders adequate funding to the WSS sectors. The key factors that recur across the priority areas of the project are as follows:

- (i) Internal LGU funds are allocated to other sectors which are as essential as WSS such as transportation, solid waste management, ICT, power, flood management and others;
- (ii) The amount of investments required for the improvement and expansion of the WSS services is beyond the financial capacity of the LGUs;

(iii) LGUs have limited access to financing from various institutions because:

- Some LGUs / WSPs have difficulty in complying with the requirements for accessing loans / financial assistance e.g., Business Plans, Feasibility Studies, Detailed Engineering Design for climate resilient water supply and sanitation facilities, others;
- Some LGUs and WSPs have limited knowledge on various financing sources available for the WSS sectors;
- Some LGUs and WSPs' borrowing capacity is below the required investments for WSS projects;
- Terms and conditions of some financing sources are not attractive due to high interest rates, short repayment period, and imposition of charges such as capitalized interest or commitment fees;
- Some LGUs / WSPs are not inclined to take on loans, instead they wait for grants that are typically small amounts and not regularly available.

## II. Improved management of water resources

The second objective of the SW project has ten (10) result indicators, of which, seven (7) are covered by this assessment. The baseline findings against each indicator are described as follows.

### A. Outcome 2.1: Amount of GHG emissions reduced or avoided (in metric tons equivalent) related to sustainable landscapes as a result of USG assistance.

This section presents the level or extent of Green House Gas (GHG) emissions caused by forest depletion taking place in the six (6) watersheds that the project will cover in year 1 onwards<sup>24</sup>. These are comprised of Irawan and Montible watersheds in Palawan; Bago and Malogo watersheds in Negros Occidental and Buayan Malungon River Basin (BMRB) and Siguel watersheds in Sarangani province and General Santos City. The data reflect the conditions of the forest areas that the SW team aims to manage by facilitating the formulation of strategic plans and policies, investments and activities that would foster sound and sustainable protection of water resources. The baseline conditions pertaining to the forest losses and the equivalent GHG emissions<sup>25</sup> across the said watersheds are described below.

#### Forest Loss

Based on the annual forest cover loss from 2010 to 2019, the total forest cover of the six watersheds is projected to drop from 81,700 hectares in 2010 to roughly 67,589 hectares in 2019 (Figure 18), an average annual forest loss of 1,568 hectares or 1.92% deforestation rate annually (Figure 21). The watersheds in the province of Negros Occidental account for the highest aggregate annual forest loss at 992 hectares, followed by the watersheds in the provinces of Palawan and Sarangani with 304 and 273 hectares respectively (Figure 19).

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<sup>24</sup> SW will cover other watersheds in the Palawan, Negros Occidental and Sarangani & General Santos City in Year 2 till end-of-project.

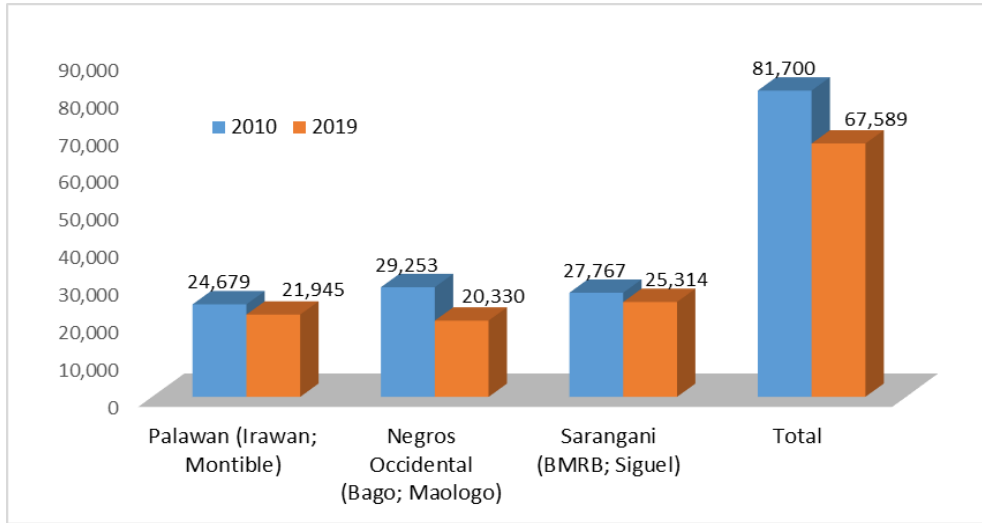


Figure 18: Forest Cover in hectares during 2010 and 2019 in the Targeted Watersheds per Province

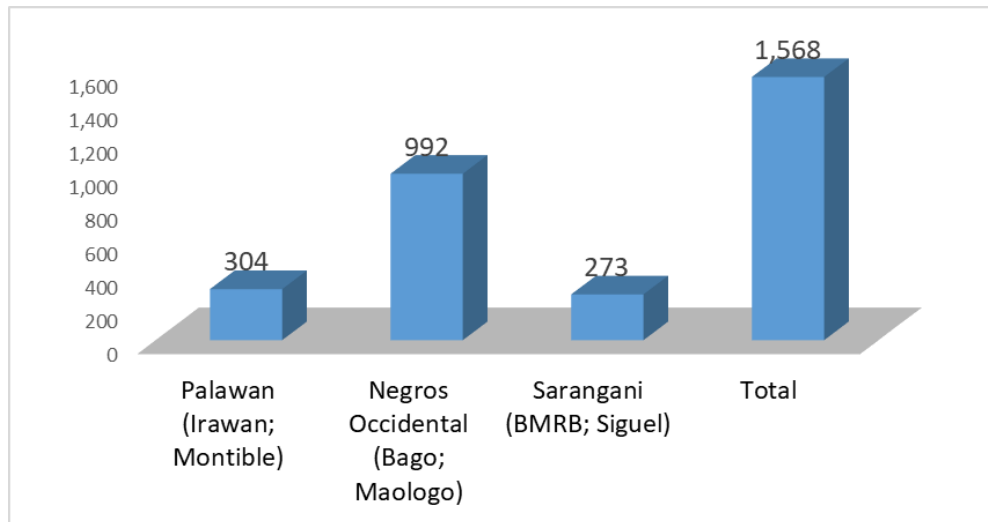


Figure 19: Aggregate Annual Forest Loss of Watersheds by Province in Hectares, Based on 2010 and 2019 Land Cover Maps of Palawan and Negros Occ. and on 2003 and 2019 Land Cover Map of Sarangani

The total forest cover of the two (2) watersheds in Palawan decreased from 24,679 hectares in 2010 to about 21,945 hectares in 2019, or an average annual forest loss of 304 hectares equivalent to 1.2% deforestation rate. The annual forest losses in Irawan and Montible watersheds stand at 49 hectares and 254 hectares respectively (Figure 20).

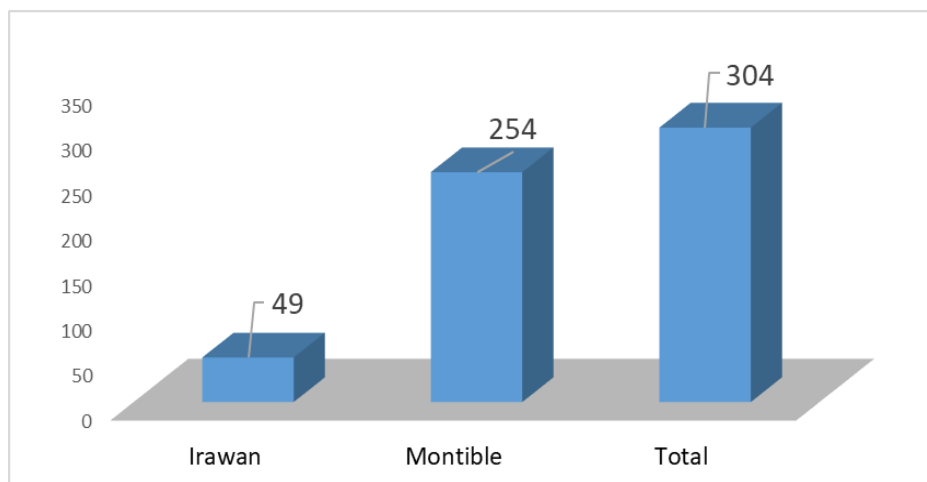


Figure 20: Annual Forest Loss by Watershed; Province of Palawan in Hectare

The total forest cover of the two (2) watersheds in Negros Occidental decreased from 29,253 hectares in 2010 to roughly 20,330 hectares in 2019, or an average annual forest loss of 992 hectares equivalent to 3.4% annual deforestation rate. The annual forest losses in Bago and Malogo watersheds stand at 718 hectares and 273 hectares respectively (Figure 21).

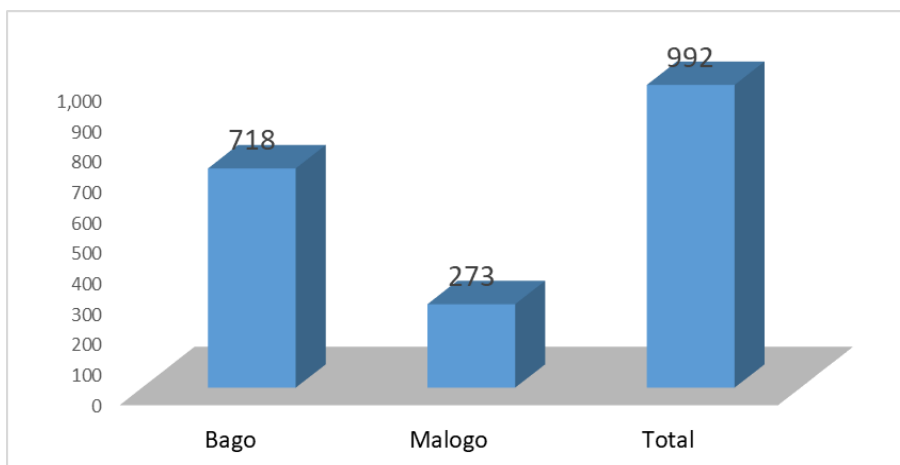


Figure 21: Annual Forest Loss by Watershed in Hectares; Province of Negros Occidental

The total forest cover of the two (2) priority watersheds in Sarangani province decreased from 27,767 hectares in 2010 to 25,314 hectares in 2019, or an average annual forest loss of 273 hectares equivalent to 1% deforestation rate. The annual forest losses in Buayan-Malungon River Basin and Siguel watershed stand at 33 hectares and 239 hectares respectively (Figure 22)

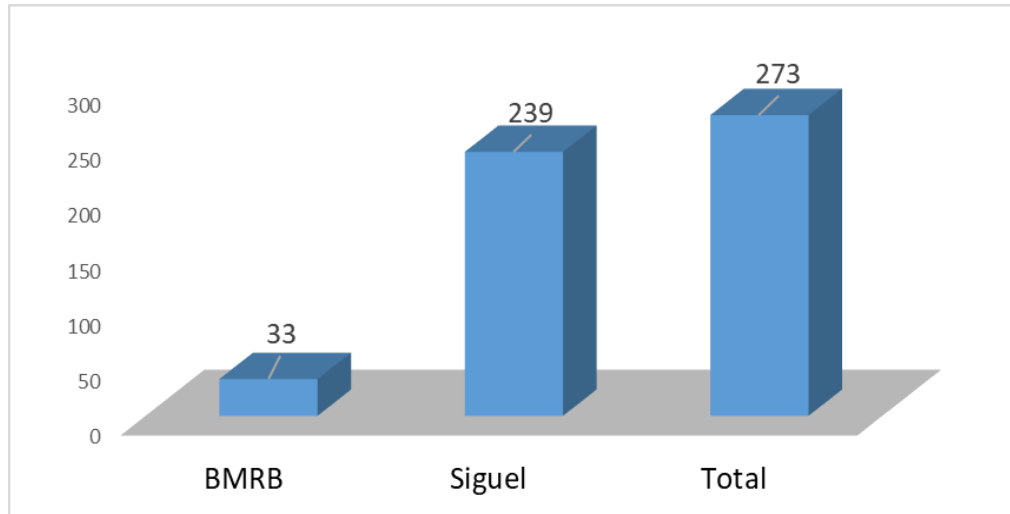


Figure 22. Annual Forest Loss by Watershed in Hectares; Province of Sarangani

### GHG Emissions

The estimated total GHG emission brought about by the forest losses in the six (6) watersheds in 2019 stood at 418,896 metric tons. The watersheds in the province of Negros Occidental account for the highest total GHG emission with 230,624 metric tons followed by the watersheds in the provinces of Sarangani and Palawan with 117,609 and 70,663 metric tons, respectively (Figure 23). By watershed, the average annual GHG emission is estimated at 69,816 metric tons. The watersheds in the province of Negros Occidental exhibit the highest average annual emission at 115,312 metric tons, followed by the watersheds in the provinces of Palawan and Sarangani with 5,331 and 11,478 metric tons respectively (Figure 24). The baseline findings

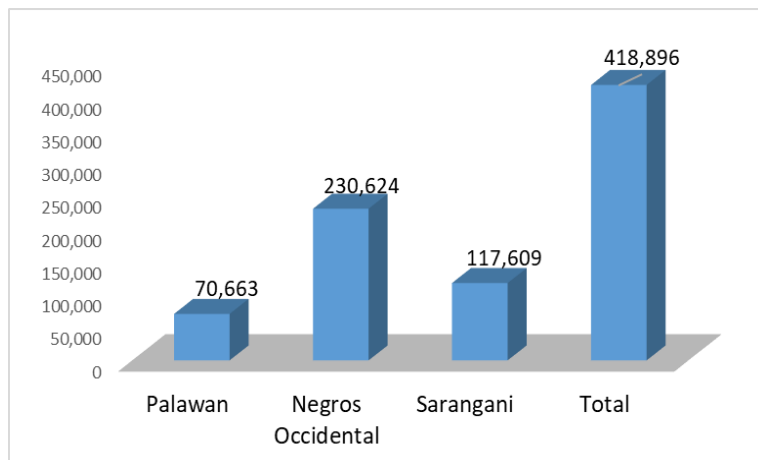


Figure 23. Estimated Total GHG Emissions in the Targeted Watersheds by Province: 2019 in Metric Tons

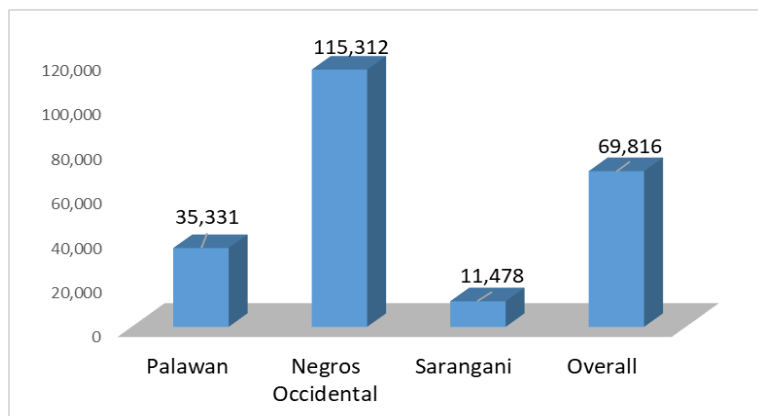


Figure 24: Average GHG Emissions Per Watershed for Each of the Three Provinces of Interest

according to watershed area by province are discussed below.

### Palawan Watersheds

The deforestation in Irawan and Montible watersheds caused approximately a total of 70,663 metric tons of GHG emission annually. The annual GHG emissions in Irawan and Montible watersheds stand at 11,478 and 59,185 metric tons respectively (Figure 25).

### Negros Occidental Watersheds

The deforestation in Bago and Malogo watersheds produced approximately a total of 230,624 metric tons of GHG emission annually. The annual GHG emissions in Bago and Malogo watersheds stand at 167,027 and 63,597 metric tons respectively (Figure 26).

### Sarangani Watersheds

The deforestation in BMRB and Siguel watershed has produced approximately a total of 117,609 metric tons of GHG emission annually. The corresponding GHG emissions stand at 6,630 and 110,980 metric tons in Buayan-Malungon River Basin and Siguel watershed, respectively (Figure 27).

### Drivers of Deforestation and Measures Undertaken to Reduce GHG Emissions

The causes of deforestation and the measures undertaken to address this problem in the target watersheds are summarized in Annex 24. According to the IDIs with the LGUs and other institutions, the common drivers of deforestation are land conversion to sugar cane, banana, mango and other agricultural crops; firewood gathering and charcoal making; and slash and burn farming/ *kaingin*. Other drivers of deforestation include illegal cutting/ timber poaching activities, quarrying, and increasing migration to upland areas.

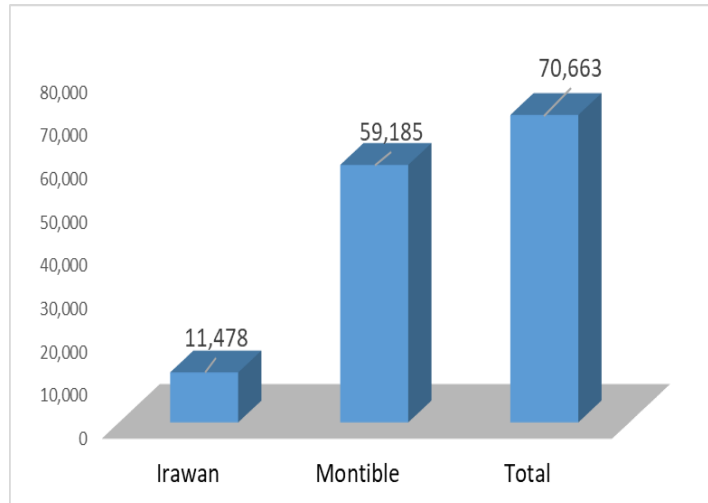


Figure 25: Total GHG Emissions in Selected Watersheds of Palawan Province; 2019 in Metric Ton

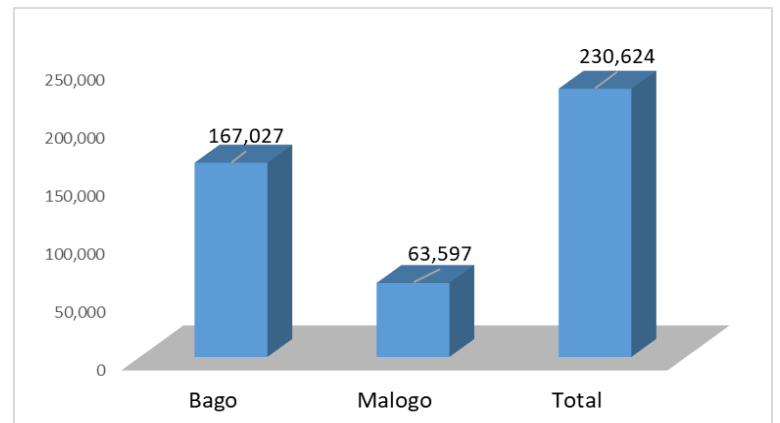


Figure 26: Total GHG Emissions in Selected Watersheds of Negros Occidental; 2019 in Metric Ton

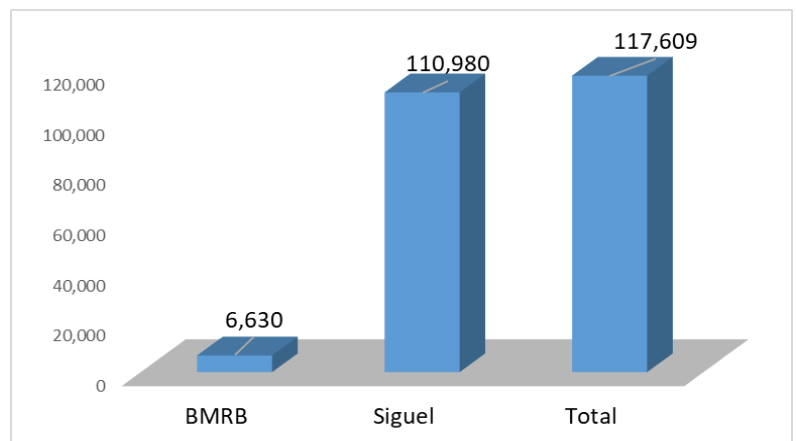


Figure 27: Total GHG emissions in selected watersheds of Sarangani; 2019 in Metric Ton

To address deforestation (and reduce GHG emission—although not always a conscious decision point), LGUs and other institutions, usually undertake reforestation and agroforestry activities using indigenous species and formulation of watershed management plans. Other measures to prevent further forest loss include implementation of the Lawin Forest and Biodiversity Protection System, regular monitoring and establishment of Ranger Station for monitoring and enforcement, strengthening of CBFM peoples’ organizations, establishment of protection and communal forests and others. Further measures needed as identified in the IDIs include the formulation of a LGU-based forest conservation plan, enactment of local policies to support implementation of conservation plans, and sustained funding on forest protection & rehabilitation.

**B. Outcome 2.2: Number of people benefiting from adoption and implementation of measures to improve water resources management as a result of USG assistance**

The Team will deliberately identify watershed management interventions that will benefit communities in watershed areas. At baseline, the measures or activities that are already underway in some parts of the watershed areas include agroforestry, mangrove planting, riverbank rehabilitation, forest protection, bamboo planting and others. Focusing on the YI targeted watersheds, the estimated population of the communities that could potentially benefit from these project is at about 438,400 people, broken down in Table 23.

**Table 23: Estimated Population That Could Benefit from SW Initiated Landscape Activities. watershed and by Province**

| Site      | Watershed        | LGUs within the watershed | Area of LGU within the watershed (Ha) | Percent of LGU within the watershed | Estimated 2020 Population of the area of LGU w/in watershed | Number of barangays within the watershed |           |
|-----------|------------------|---------------------------|---------------------------------------|-------------------------------------|---|--|-----------|
| Sarangani | BMRB             | Alabel                    | 35,744.10                             | 79%                                 | 39,736  | 8  |           |
|           |                  | Malapatan                 | 2,607.10                              | 4%                                  | 1,222   | 1  |           |
|           |                  | Malungon                  | 90,052.40                             | 97%                                 | 104,216   | 30                                       |           |
|           |                  | General Santos City       | 8,064.60                              | 17%                                 | 48,533  | 8  |           |
|           | <b>Subtotal</b>  |                           |                                       | <b>136,468.20</b>                   |   | <b>193,707</b>                           | <b>47</b> |
|           | Siguel           | Maasim                    | 20,374.30                             | 42%                                 | 15,785  | 9  |           |
|           |                  | Kiamba                    | 2,657.40                              | 7%                                  | 2,591   | 4  |           |
|           |                  | General Santos City       | 380.6                                 | 1%                                  | 1,310   | 1  |           |
|           | <b>Sub-total</b> |                           |                                       | <b>23,412.30</b>                    |   | <b>19,686</b>                            | <b>14</b> |



| Site              | Watershed        | LGUs within the watershed | Area of LGU within the watershed (Ha) | Percent of LGU within the watershed | Estimated 2020 Population of the area of LGU w/in watershed | Number of barangays within the watershed |
|-------------------|------------------|---------------------------|---------------------------------------|-------------------------------------|---|--|
| Negros Occidental | Bago             | Bago City                 | 25,820.40                             | 63%                                 | 84,093  | 18                                       |
|                   |                  | Murcia                    | 21,744.10                             | 75%                                 | 48,979  | 16                                       |
|                   |                  | Salvador Benedicto        | 16,672.60                             | 98%                                 | 28,746  | 8  |
|                   |                  | San Carlos City           | 18,859.60                             | 44%                                 | 28,612  | 8  |
|                   |                  | Pulupandan                | 245.3                                 | 13%                                 | 1,271   | 4  |
|                   |                  | Talisay City              | 578.1                                 | 3%                                  | 614   | 1  |
|                   |                  | La Carlota City           | 245                                   | 2%                                  | 507   | 3  |
|                   |                  | Calatrava                 | 310.7                                 | 1%                                  | 353   | 3  |
|                   | <b>Sub-total</b> |                           | <b>84,475.80</b>                      |                                     | <b>193,175</b>  | <b>61</b>                                |
|                   | Malogo           | Cadiz City                | 1,138.50                              | 2%                                  | 575   | 1  |
|                   |                  | Calatrava                 | 1,106.60                              | 3%                                  | 151   | 2  |
|                   |                  | E.B. Magalona             | 4,844.10                              | 33%                                 | 10,543  | 8  |
|                   |                  | Murcia                    | 100.1                                 | 0%                                  | 103   | 2  |
|                   |                  | Salvador Benedicto        | 102                                   | 1%                                  | 211   | 4  |
|                   |                  | Silay City                | 6,731.70                              | 26%                                 | 7,159   | 4  |
| Talisay City      |                  | 1,412.00                  | 9%                                    | 1,500                               | 1   |  |
| Victorias City    |                  | 1,473.00                  | 12%                                   | 2,933                               | 3   |  |
| <b>Sub-total</b>  |                  | <b>16,908.00</b>          |                                       | <b>23,175</b>                       | <b>25</b>   |  |
| Palawan           | Irawan           | Puerto Princesa City      | 3,361.70                              | 2%                                  | 3,736   | 4  |
|                   | Montible         | Puerto Princesa City      | 23,302                                | 11%                                 | 4,906   | 8  |
|                   | <b>Sub-total</b> |                           | <b>26,663.70</b>                      |                                     | <b>8,642</b>  | <b>12</b>                                |

| Site                   | Watershed | LGUs within the watershed | Area of LGU within the watershed (Ha) | Percent of LGU within the watershed | Estimated 2020 Population of the area of LGU w/in watershed | Number of barangays within the watershed |
|------------------------|-----------|---------------------------|---------------------------------------|-------------------------------------|---|--|
| <b>TOTAL / OVERALL</b> |           |                           | <b>287,928.00</b>                     |                                     | <b>438,385</b>  | <b>159</b>                               |

Along with facilitating the implementation of the same measures mentioned above to cover further areas and help more people gain higher incomes, one of the benefits from implementation of measures to improve water resources management is through reduced incidence or lower levels of flooding. Based on the area which is moderately susceptible to highly susceptible to flooding as determined from the flood hazard maps, the total population that is vulnerable to flooding in the 12 watersheds covered by the project is estimated at 152,848. Most of the affected population, about 102,923 people, is located in the watersheds of Negros Occidental, followed by Sarangani at 44,475 people, and Palawan at 5,450 people. Among the 12 watersheds, the Buayan-Malungon River Basin in Sarangani province has the largest population affected by flooding, estimated at 42,949 people, followed by Binalbagan Watershed in Negros Occidental with an estimated 34,062 people affected. Irawan Watershed in Palawan province has the smallest population affected by flooding at only 219 people (Table 24).

**Table 24: Estimated number of people affected by flooding per watershed and by Province**

| Watersheds by Province | Population susceptible to flooding |               |               | Total          |
|------------------------|------------------------------------|---------------|---------------|----------------|
|                        | Very high                          | High          | Moderate      |                |
| <b>Negros Occ.</b>     |                                    |               |               |                |
| Bago                   | 3,838                              | 9,074         | 6,188         | 19,100         |
| Malogo                 | 1,006                              |               | 1,412         | 2,418          |
| Binalbagan             | 4,591                              | 17,874        | 11,597        | 34,062         |
| Himugaan               |                                    | 9,540         | 18,382        | 27,922         |
| Ilog-Hilabangan        | 3,773                              | 409           | 15,239        | 19,421         |
| <b>Sub-total</b>       | <b>13,208</b>                      | <b>36,897</b> | <b>52,818</b> | <b>102,923</b> |
| <b>Palawan</b>         |                                    |               |               |                |
| Irawan                 |                                    | 185           | 34            | 219            |
| Montible               |                                    | 424           | 169           | 593            |

| Watersheds by Province | Population susceptible to flooding |               |               | Total          |
|------------------------|------------------------------------|---------------|---------------|----------------|
|                        | Very high                          | High          | Moderate      |                |
| Aborlan                |                                    | 1,267         | 1,727         | 2,994          |
| Lamakan                |                                    | 110           | 113           | 223            |
| Malasgao               |                                    | 999           | 422           | 1,421          |
| <b>Sub-total</b>       |                                    | <b>2,985</b>  | <b>2,465</b>  | <b>5,450</b>   |
| <b>Sarangani</b>       |                                    |               |               |                |
| BMRB                   |                                    | 30,000        | 12,979        | 42,979         |
| Siguel                 |                                    | 1,386         | 110           | 1,496          |
| <b>Sub-total</b>       |                                    | <b>31,386</b> | <b>13,089</b> | <b>44,475</b>  |
| <b>Total</b>           | <b>13,208</b>                      | <b>71,268</b> | <b>68,372</b> | <b>152,848</b> |

**C. Outcome 2.3: Number of people receiving livelihood co-benefits (monetary or non-monetary) associated with USG sustainable landscapes activities.**

The SW project’s approach to forest protection will employ active participation of upland communities by engaging them in non-extractive livelihoods that are vital to preserving watersheds and forest resources, while at the same time improving their living conditions. The baseline assessment shows various livelihood activities undertaken in the six (6) watersheds (Year I priority sites) involving about 22,450 people (Figure 28), which only constitutes five (5) % of the 438,385 total population in the target areas.

Figure 29 depicts the breakdown of livelihoods among SW upland communities. Sugarcane farming/production accounts for the largest number of participants (9,050), followed by agroforestry (7,045) and rice farming (6,330).

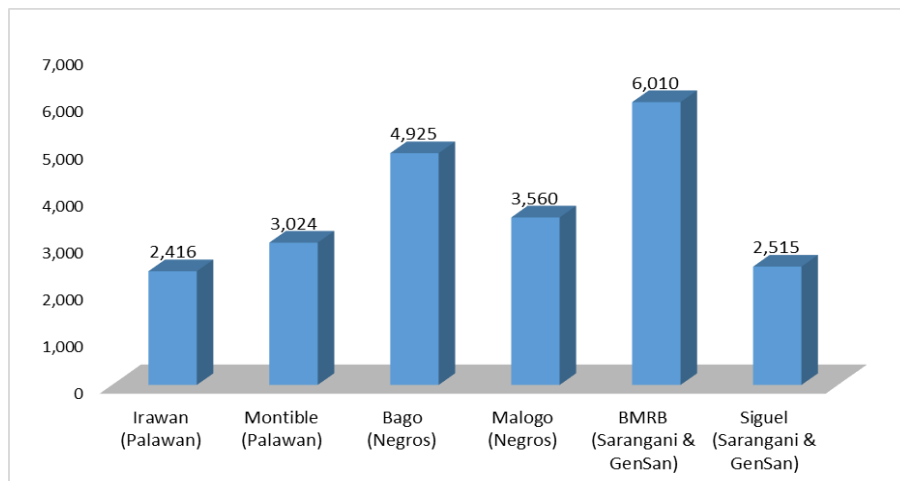


Figure 28: Number of People Receiving Livelihood Co-benefits by Watershed, 2019

Various benefits (monetary and non-monetary) that livelihood activities aim to achieve include additional household income, improved linkages to markets, increased awareness of watershed management and better knowledge and application of appropriate sustainable farming practices, among others. These perceived benefits, however, could be at risk to be sustainably achieved owing to various factors such as (i) limited

capacity of the recipients of livelihoods (proponent groups / community associations) on developing business continuity plan, financial management, enterprising, others; (ii) constraints in the value chain segments for high value crops (coffee, cacao, bamboo); (iii) lack of access of beneficiary groups to financing institutions; and (iv) some recipients are not yet capacitated to implement the livelihood / landscape activities.

Annex 25 provides a summary and breakdown of participants of various livelihood activities according to site (city/municipality per watershed). See also Annex 26 for the range of benefits by type of livelihood activity in each watershed.

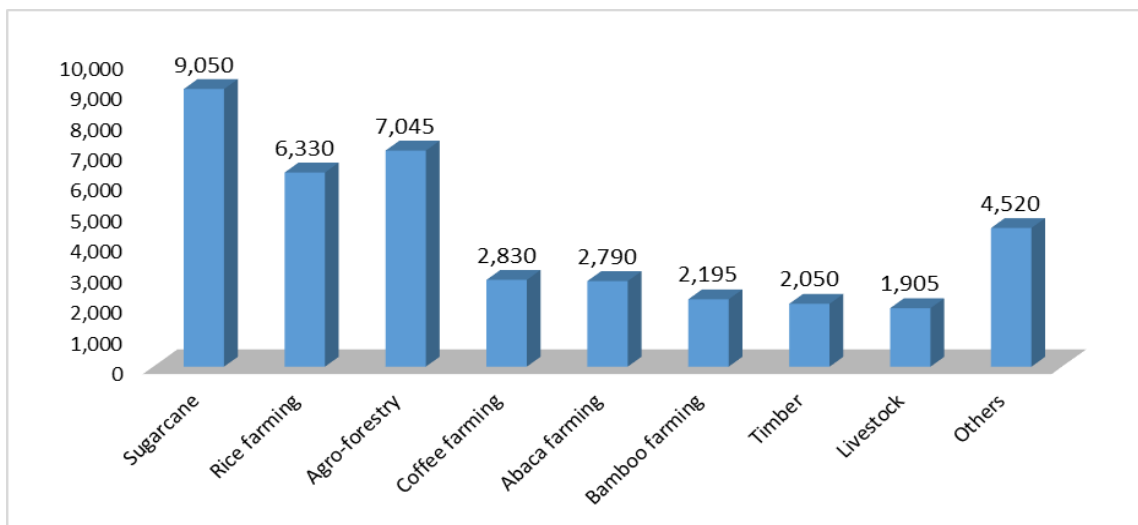


Figure 29: Number of People Participating in Livelihood Activities, 2019

- **Intermediate Result 2.1: Number of hectares of forest under improved watershed management**

The SW project will assist LGUs, upland communities and other stakeholders in improving the management of forest areas to address deforestation and consequently reduce or minimize greenhouse gas emissions in the targeted watersheds. At year 1, the SW project covers six (6) watersheds with a total forest land covering roughly 196,000 hectares. Only Bago watershed (Negros Occidental) has a portion of its forest land that is under improved watershed management<sup>26</sup>, but this includes only 6% of the total area, i.e. 2,136 out of 33,878 hectares. Thus, against the entire YI watersheds’ forest land, only 1% (2,136 out of 196,000 hectares) is under improved watershed management (Figure 30). The breakdown of the forest land area and portion under improved watershed management according to municipality / city covered by the watersheds is provided in Annex 27. The criteria to determine improved watershed management is provided in Annex 28.

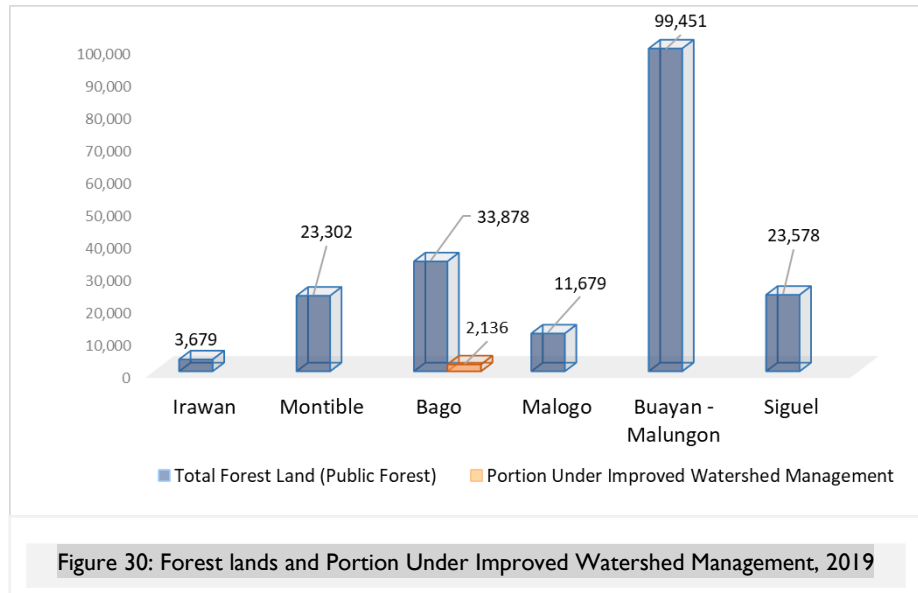


Figure 30: Forest lands and Portion Under Improved Watershed Management, 2019

The key issues faced in managing the forest resources according to the IDIs with the LGUs, DENR and other stakeholders include inappropriate upland farming, forest land conversion to agricultural cultivation, charcoal production, illegal cutting of trees, *kaingin*, etc. A summary of issues, efforts being undertaken and assistance needed in the management of the forest resources is provided in Annex 29 for reference.

- **Intermediate Result 2.2: Number of LGU WSPs, and watershed stakeholders with improved capacity to plan, manage and monitor water and forest resources sustainably, using data and innovative technologies**

The baseline data for this indicator pertain to information about the capacity of LGU WSPs and watershed stakeholder in the targeted sites to plan, manage or implement plans and monitor activities on water and forest resources management. The data shall be relevant in informing the activities or assistance that the SW project, LGUs and other institutions, including the private sector, may provide to various institutions to increase their effectiveness in managing water and water resources.

The gathering of qualitative data on this indicator is still on-going across the project sites. To provide preliminary information, the table below indicates an overview of the gaps in terms of

<sup>26</sup> A portion of forestland where at least three of the seven milestones or conditions (criteria of improved watershed management) prevail.

planning, implementation and monitoring of the Integrated Watershed Management Plan for the 3000 Hectares Irawan Watershed in the province of Palawan (Table 25). The information was obtained from SW team’s conversation with the WDs and concerned staff of the Provincial Government of Palawan.

**Table 25: Key Gaps and Issues WSPs on Planning, Management and Monitoring**

| Aspect                    | Gaps / Issues   |   |
|---------------------------|---|---|
|                           | Puerto Princesa Water District (PPCWD) Water Safety Plan  | Integrated Watershed Management Plan for the 3000 Hectares Irawan Watershed   |
| Planning                  | Inadequate capacity of the WD to formulate the Water Safety Plan (WSP)  | Lack of participation of different stakeholders during the formulation of management plan.  |
|                           | Outside agencies, though part of the organizational structure to perform regulatory function (e.g., LWUA, NWRB, City LGU and other external stakeholders) were not involved during the formulation of plan. | Lack of technical personnel from PPCWD<br><br>Climate change, hazard, and GAD components are not integrated in the plan.<br><br>No Monitoring and Evaluation component section in management plan |
| Implementation            | Water quality is affected by content of chlorine from water source up to end point of water system due to absence of online chlorine analyzer.  |   |
|                           | Water quality test laboratory not yet operational due to absence of experienced chemist and pending compliance of the facility with the standards prescribed by the DOH                                     |   |
| Monitoring and Evaluation | No defined unit / team to do M&E  | No personnel designated for monitoring and evaluation   |
|                           | Monitoring and reporting not done regularly / periodically  |   |
|                           | Staff has limited technical capacity on monitoring and evaluation   |   |

- **Intermediate Result 2.3: Amount of investment mobilized (in US\$ equivalent) for sustainable landscapes**

The SW project will support development and implementation of sustainable landscape activities (SLAs) that are vital to the rehabilitation and protection of the forests in the covered watersheds. The baseline for LGU and national government investments is zero considering the zero-based budgeting policy of the government.

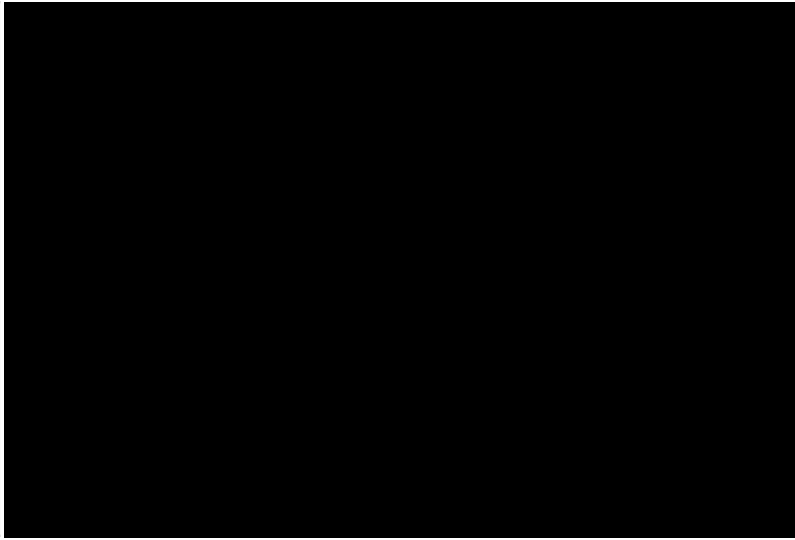


Figure 31: Investments to Landscape Activities by Province (in Million PhP)

The baseline for LGU and national government investments is zero considering the zero-based budgeting policy of the government.

The following information illustrates the low priority accorded to watershed protection, as seen from levels of investments. In 2019, [redacted] was allocated by 13 LGUs (Province / City / Municipality) to implement various landscape activities in the 12 watersheds prioritized by the SW Team under

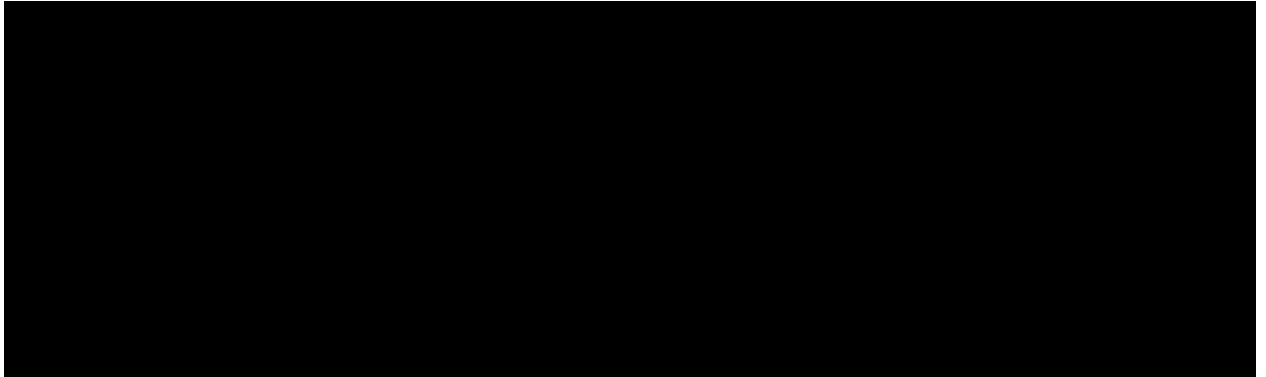
Year 1 and 2 (Figure 31). This accounted for only 0.6% of the total [redacted] budget of the LGUs. The activities included forest protection, reforestation, riverbank rehabilitation, agro-forestry, nursery maintenance, eco-system management program, bio-diversity conservation program and others.

The highest investment was made in Palawan Province at PhP101.6 million for five (5) watersheds (Aborlan, Irawan, Lamakan, Malasgao and Montible) through the shared efforts of the Provincial Government, Puerto Princesa City Government and the Municipal Governments of Dumarán and Taytay. The investments in the two (2) watersheds in Sarangani Province (BMRB and Siguel) amount to [redacted], shared by the Provincial Government, Municipal Governments of Alabel, Kiamba, Maasim and Malungon and City Government of General Santos City. The smallest investment was made by the Province of Negros Occidental at PhP26.39 for the five watersheds, Bago, Binalbagan, Himugaan, Ilog-Hilabangan and Malogo, with shares from the City/Municipal Governments of Bago, Isabela, San Carlos & Silay. The details of this funding is presented in the following sections.

### Palawan

Several stakeholders are pursuing various landscape activities in support of forest protection efforts in the five (5) watersheds of the Province of Palawan. These include Bantay Gubat Program, which constitutes the highest share of total investments at 20%, Protected Area (PA) management, reforestation, bio-diversity conservation and others. The Provincial Government of Palawan contributed more than half of the total investments at 63% [redacted], followed by Puerto Princesa City Government at 30% [redacted] and the Municipal Governments of Taytay and Dumarán with 5% and 2% shares respectively. The breakdown of investments by the LGUs according to type of landscape activities is provided in Table 26.

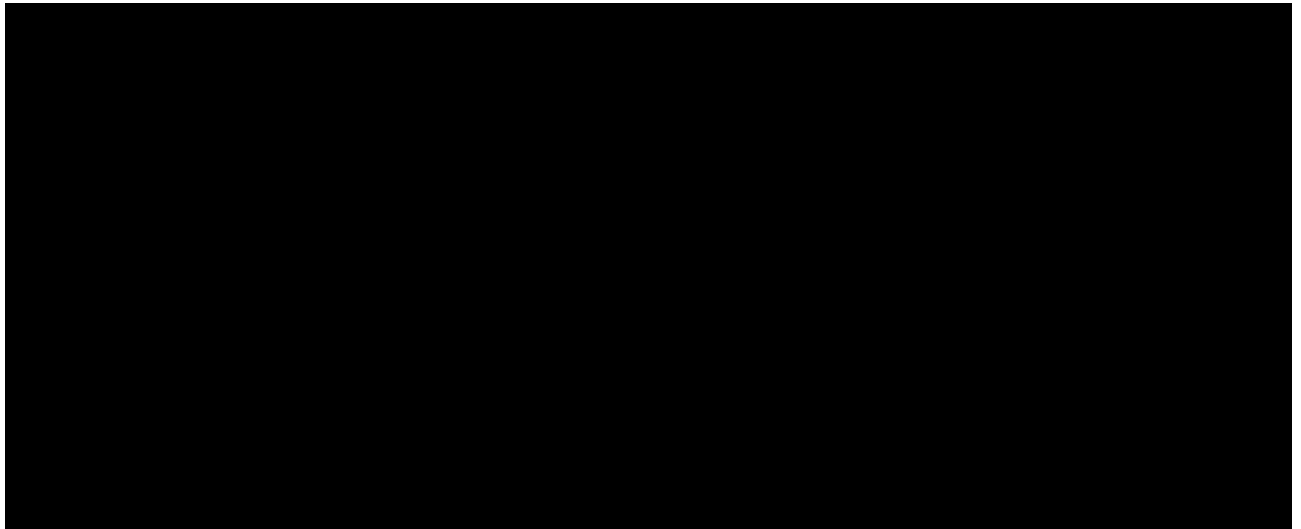
**Table 26: CY 2019 Investments According to Landscape Activities: Province of Palawan by Local Government Unit (Cost in Million Pesos)**

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**Negros Occidental**

In 2019, the total cost of investments allocated and mobilized by the LGUs in the Province of Negros Occidental to implement various landscape activities in five watersheds was at [REDACTED] M. Various landscape activities funded included reforestation comprising 62% [REDACTED] of the total investment, forest protection at 10%, nursery maintenance at 6% and others. The highest investment was made by San Carlos City Government at 35% [REDACTED] followed by the Provincial Government at 17% (PhP4.6M), and Bago City Government at 14% [REDACTED]. The breakdown of investments by the LGUs according to type of landscape activities is provided in Table 27.

**Table 27: CY 2019 Investments According to Landscape Activities: Province of Negros Occ. by Local Government Unit (in Million Pesos)**

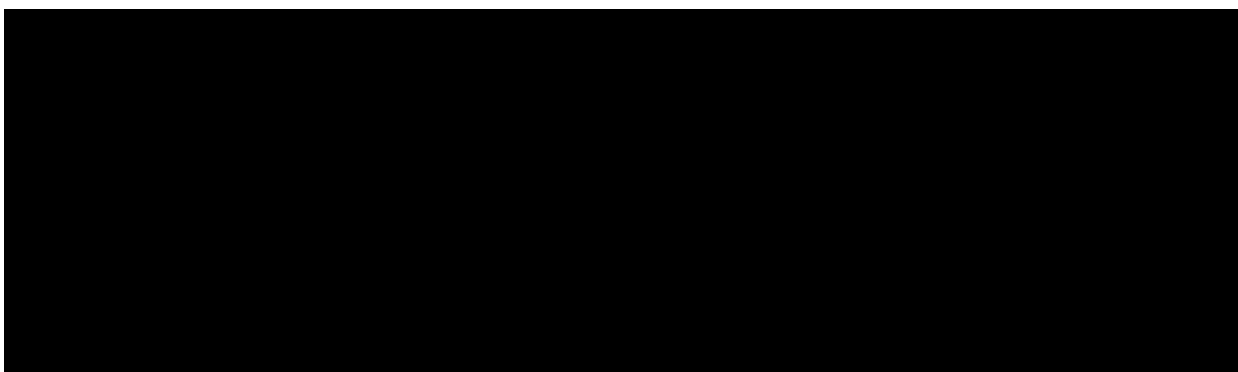
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## Sarangani

In CY 2019, local governments of Sarangani and General Santos City invested about ██████ to implement various landscape activities in Buayan Malungon and Siguel watersheds. About 42% of the investment was allocated for agro-forestry ██████; 38% for nursery maintenance ecosystem management program, and 10% for reforestation. About 66% of the total investment is shared by the Sarangani Provincial Government. The City Government of General Santos City follows at 19% ██████. The other 15% is shared by the Municipal Governments of Alabel, Malungon, Maasim and Kiamba. The breakdown off investments by the LGUs according to type of landscape activities is provided in Table 28.

**Table 28: CY 2019 Investments According to Landscape Activities: Province of Sarangani by Local Government Unit (Cost in Million Pesos)**



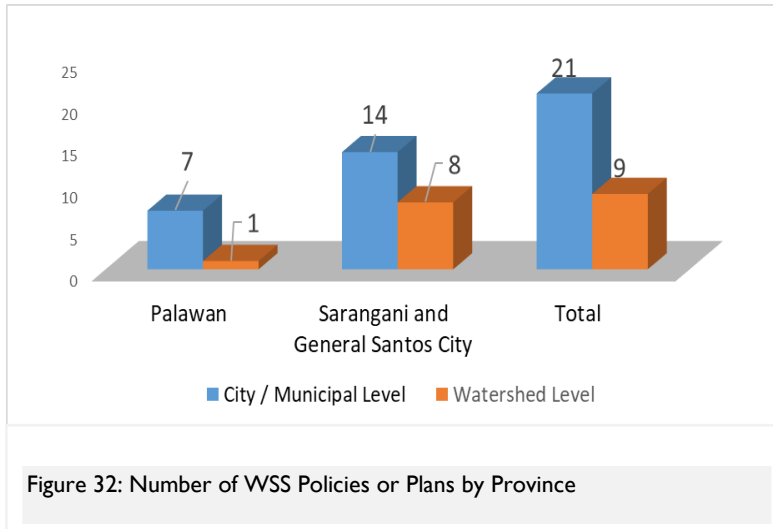
## III. Improved Water Sector Governance

The Safe Water Project will support the operationalization of the Philippine WSS Master Plan (PWSSMP), the country's road map that identifies the long-term strategies of the WSS sector, and the Unified Financing Allocation Framework, the new financing and public resource allocation policy, as a means to achieve universal access to WSS services by 2030. The NEDA Board's Infrastructure Committee approved both Master Plan and the URAF Policy. Project activities under this component focus on the provision of technical and capacity-building support to policy development, planning, budgeting and investment programming initiatives, in addition to project development that strengthens economic and resource regulation to improve and expand access to WSS services and enhance water resources management. SW interventions will be measured in terms of a) policies or plans developed or enhanced to promote water security; b) WSS sector institutions strengthened or improve WSS services and manage water resources; c) major reform initiatives' implementation supported; and d) mechanisms developed and/or enhanced for exchanging knowledge on water security. The baseline data according to indicator are as follows.

## A. Outcome 3.1: Number of policies or plans developed, enhanced, or implemented to promote water security and WSS service provision

### Project Site Level

The SW project will also endeavor to realize initiatives that would expedite development, enhancement or implementation of various policies or plans at the national, regional and / or project site level that are relevant to broadening and improving delivery of WSS services and



promoting water security in the targeted sites by protecting watersheds and water resources, encouraging water use efficiency and reducing water waste. At baseline period, the study has identified 30 policies and plans that are either developed or being implemented in support of improving the WSS services in the provinces of Palawan and Sarangani and General Santos City<sup>27</sup> (Figure 32).

The range of key policies involve (i) executive orders and ordinances related to strengthening the WSS services passed by the City / Municipal LGUs; and (ii) resolutions passed by the provincial governments creating watershed management councils, declaration of conservation areas, others. The range of fundamental plans in support of the WSS services on the other hand includes (i) multi-year business plans of WDs; (ii) Municipal Water Supply, Sewerage and Sanitation Sector Plan (MW4SP); (iii) Water, Sanitation and Hygiene (iWaSH) Plan e.g. Taytay Palawan; (iv) Water Safety Plan; (v) Forest Land Use Plan; and (vi) Climate-Responsive Integrated Master Plan for watershed e.g., BMRB. The list including relevant information (objective, issues / challenges and assistance needed) of the plans and policies is provided in Annex 30. However, enforcement of policy issuances is weak, or outputs such as the sector plans are inadequate. Hence even for existing policy issuances, LGUs or WSPs require assistance in ensuring they are implemented effectively.

### National Level

The SW project shall support implementation of various plans and policies being implemented nationwide. The policies and plans are described in Table 29.

<sup>27</sup> Pending data / information in Negros Occidental Province

**Table 29: National Level WSS Polices and Plans**

| Lead Entity Involved               | Title of Policy or Plan   | Objective / Description/Scope   | Implementation Challenges & Opportunities  |
|------------------------------------|---|---|--|
| NEDA (lead), DILG, DOH, LWUA, NWRB | PWSS Master Plan (2019-2030)  | Sets the roadmap to achieve SDG targets for universal access to WSS services in 2030. It adopts the IWRM principles and identifies 8 key priority reform areas based on identified WSS issues and challenges: i) establishing effective institutions; ii) strengthening regulations; iii) balancing supply and demand; iv) building climate resiliency; v) ensuring effective water supply and sanitation services; vi) enabling access to funding, vii) managing data and information; and viii) driving research and development. | Calls for active engagement of the key implementing institutions and budget advocacy to support the implementation of priority action plans  |
| NEDA (lead), DILG, DOH, LWUA       | Adoption of the Unified Resource Allocation Framework (URAF)                        | Sets the financing policy for WSS which adopts a three-pronged approach that covers financing, institutional and regulatory reforms to improve water utility performance  | Entails strengthened advocacy for NG appropriation to support technical assistance and capital investments in the form of viability gap financing; and leveraging of these resources with commercial credit or private equity. Furthermore, it entails preparation of WSPs through capacity building and governance reforms to effectively implement and sustain capital investments |
|                                    | Establishment of Water Regulatory Council (WRC)                                     | The DWR aims to address fragmentation in WSS delivery and WRM and rationalize mandates and functions of existing concerned institutions. It is envisioned to be the primary agency responsible for the planning and policy formulation, coordination, economic and resource regulation towards the attainment of universal WSS access targets and for the implementation of the Water Code and Clean Water Act.   | Need for technical and advocacy support to push for the passage of the bill  |
|                                    | Creation of Department of Water (DWR)   |   |  |
|                                    | Executive Order on the NWMC (Transforming and Strengthening the NWRB into the NWMC) | Envisions the NWMC as the as interim coordinating body for WSS & WRM pending the creation of the DWR. It will be responsible for the planning, policy formulation, control, management and protection of the country's water resources for domestic water supply,   | Need for technical and advocacy support to push for the approval and adoption of the EO pending Congressional deliberation of the DWR bill   |

| Lead Entity Involved | Title of Policy or Plan | Objective / Description/Scope   | Implementation Challenges & Opportunities |
|----------------------|-------------------------|---|---|
|                      |                         | sanitation, which includes sewerage and septage, irrigation, hydropower, fisheries, aquaculture, flood control, navigation and recreation, regulation of water use and water utilities including the enhancement and maintenance of water quality for ecosystem protection. |   |

**B. Outcome 3.2: Number of water and sanitation sector institutions strengthened to manage water resources or improve water supply and sanitation services**

SW aims to strengthen WSS institutions to effectively manage water resources or improve water supply and sanitation services. It will work through existing institutional mechanisms or develop new ones to coordinate and monitor PWSSMP and URAF initiatives; strengthen advocacy for WSS reform initiatives, resource mobilization for WSS investments and enhanced WRM; and promote knowledge exchange (Table 30)

**Table 30: WSS Institutions at the National, Regional and Provincial / Local Levels**

| Name of Mechanism / Platform           | Mandate / Objective  | Status as of 2019  | Baseline Capacity (Strength / Challenges) |
|--|--|--|---|
| <b>A. National</b>                     |  |  |   |
| Subcommittee on Water Resources (SCWR) | Created by NEDA Infra Com Resolution No. 2 - 2008, as a subcommittee of the Infra Com to coordinate all activities pertaining to the water resources sector including WSS and sewerage. It (a) ensures that the direction set for the sector is carried out in accordance with sector plans; (b) coordinates sector monitoring, periodic review, evaluation and assessment of PAPs; (c) coordinates and advises the Infrastructure Committee on conduct of studies, research and policy analysis related to the sector and makes subsequent policy recommendations; (d) formulates areas for cooperation and coordination among concerned entities; and (e) serves as clearing house of sector | Active<br><br>To be reconstituted as the URAF Steering Committee |   |

| Name of Mechanism / Platform   | Mandate / Objective  | Status as of 2019  | Baseline Capacity (Strength / Challenges)  |
|--------------------------------|--|--|--|
|                                | information and as a platform for discussion and resolution of issues in the sector.   |  |  |
| URAF Steering Committee        | Comprised of NEDA, DBM, DILG, DOH and LWUA; sets the strategic directions for the development of the sector; identifies the reform agenda and how financing incentives can be used to drive this agenda; develops the operating policies for the URAF-WSS; approves annual investment programs tied to targets on service coverage and quality improvement; & monitors program implementation and evaluate outcomes. | To be organized pending approval of NEDA Board Resolution operationalizing the URAF. | Strength: The URAF SCWR and TWG are comprised of representatives from key implementing agencies that have the technical capacities to support the committee's and TWG's envisioned terms of reference.<br><br>Challenges: Need for technical support and capacity building support in operationalizing the URAF, e.g. a) preparation of URAF implementing guidelines including the fundamental prioritization criteria for grant recipients, and the operating policies and rules for the VGF are a new approach; b) appraisal of applications for VGF, project preparation, and prioritization request for EIP, technical assistance and capacity building; and monitoring use of funds and implementation of projects. |
| URAF TWG                       | Technical secretariat for the URAF-WSS implementation; sets the standards for appraisal of applications for the VGF, project preparation and requests for EIP, technical assistance and capacity building; monitors use of funds and implementation of projects; sets up a database of WSS Universal Access Gaps per municipality and city; facilitates utility benchmarking system; and monitor sector development. | To be organized pending approval of NEDA Board Resolution operationalizing the URAF  | To be organized pending approval of NEDA Board Resolution operationalizing the URAF, e.g. a) preparation of URAF implementing guidelines including the fundamental prioritization criteria for grant recipients, and the operating policies and rules for the VGF are a new approach; b) appraisal of applications for VGF, project preparation, and prioritization request for EIP, technical assistance and capacity building; and monitoring use of funds and implementation of projects.   |
| Development Partners Forum for | Serves as coordination forum with government, development partners, and other stakeholders   | Active   | Strength: Members of the forum are key staff who have technical  |

| Name of Mechanism / Platform | Mandate / Objective   | Status as of 2019  | Baseline Capacity (Strength / Challenges)  |
|------------------------------|---|--|--|
| WASH Coordination            | in discussing WSS reform initiatives, directing and rationalizing assistance and coordinating on-going and proposed projects for synergy. The forum aims to facilitate broader stakeholder support and mobilize resources for the PWSSMP key reform areas and the UFF programs.   | NEDA serves as convener with SW as Technical Secretariat (note: first DP-GOP Meeting conducted on September 9, 2020) | knowledge of the sector<br><br>Challenges: Convening the forum will depend on availability and confirmation of GOP members; support to advance WASH advocacy to government and other stakeholders  |
| Water and Sanitation Network | The proposed network will serve as a platform for coordinating and monitoring WSS initiatives and knowledge exchange. The thematic areas to be tackled for discussion under the network will be anchored on the PWSSMP. NEDA's role in coordinating the PWSSMP will provide the basis for the creation of the network. Membership will be by invitation and will include GOP, Development Partners, WSS International Organizations, other Water partnership platforms like PWP, Water Alliance, Academe, CSOs and private sector. NEDA may serve as Lead Convener and Secretariat while the NWMC or DWR has yet to be established. | To be organized  | Strength: Membership is multi-stakeholder that will work towards a more integrated and coordinated WSS sector initiatives<br><br>Challenges: Need for technical and secretariat support for its knowledge, information sharing and collaboration activities. |
| Water Alliance               | Established in August 2015 as a multi-sectoral platform for collective engagement of businesses to create solutions to water problems and contribute to solving water security challenges. Its members include private sector and business networks, academe and research institutions, and social development organizations. PBSP serves as its Secretariat.   | Active   | Strength: An established platform with strong private sector support and secretariat (PBSP). Its activities are spearheaded by thematic clusters that enable focus on specific issues being addressed  |

| Name of Mechanism / Platform   | Mandate / Objective  | Status as of 2019 | Baseline Capacity (Strength / Challenges)   |
|--|--|-------------------|---|
|  |  |                   | Challenges: Support to localize the platform to expand its network  |
| <b>B. Regional</b>   |  |                   |   |
| Regional Water and Sanitation Hubs (RHubs)                             | Composed of SUC, WDs, NGOs and CSOs; The RHubs have two main responsibilities: a) assist the government, particularly the Water, Sanitation and Hygiene (WASH) programs of the DILG, in preparing the waterless <sup>28</sup> LGUs and communities to develop local projects in establishing, improving and expanding water and sanitation systems and facilities; and b) strengthen local governance on WASH in waterless LGUs and communities. | Active            | <p>Strength: The hub has been institutionalized and recognized by government as a technical and capacity building arm for improved WASH governance for LGUs. It has an established roster of institutional and individual members.</p> <p>Challenges: Need for technical and capacity building support to strengthen competence of members to provide needed training and mentoring assistance on water utility reform and water security requirements of LGUs, e.g. WASH and business planning, ring-fencing, CMS, IWRM.</p> |
| <b>C. Provincial and Local</b>   |  |                   |   |
| Palawan Council for Sustainable Development (PCSD) & Palawan Knowledge | The PCSD is a multi-sectoral and inter-disciplinary body charged with the implementation of the Republic Act 7611 or the Strategic Environmental Plan (SEP) for Palawan Act. While the SEP is a national law, its effectivity covers   | Active            |   |

<sup>28</sup> DILG defines barangays or municipalities as “waterless” if more than 50% of the population do not have access to safe drinking water sources

| Name of Mechanism / Platform                           | Mandate / Objective   | Status as of 2019 | Baseline Capacity (Strength / Challenges)                                    |
|--|---|-------------------|--|
| Platform for Biodiversity and Sustainable Development  | only Palawan. The PCSD provides the governance, implementation and policy direction of the SEP. Members of the PCSD include members of the House of Representatives representing the province, NEDA, DENR, DA, Governor of Palawan, the Mayor of Puerto Princesa City, President of the Mayor's League of Palawan, the President of the Provincial Chapter of the Liga ng mga Barangay, PCSD Executive Director, private sector and CSO.  |                   |  |
| Water Summit (Negros Occidental)                       | Organized in February 2020 to bring together stakeholders from government, private sector and civil society to tackle four key themes: water supply and quality, sanitation and sewerage, sustainability, and water governance. The summit emphasized the need for an integrated approach to water resource management, innovative technologies, critical institutional and operational reforms, and investments to build adequate WSS infrastructure and ensure social and environmental protection of the province's water resources. |                   |  |
| Alliance of Chief Executives (ACE) (Negros Occidental) | This is an association of local chief executives in the provinces convened to discuss and address inter-LGU issues and solutions and sharing of resources. This is currently headed by the mayor of Victorias.  | Active            |  |
| Provincial/ City/Municipal Development Councils        | Per EO 471 (1991). The LDCs are tasked to assist local legislative bodies in setting the direction of economic and social development   | Active            | Need capacity building tools to strengthen planning, investment programming, |



| Name of Mechanism / Platform  | Mandate / Objective  | Status as of 2019     | Baseline Capacity (Strength / Challenges)   |
|-------------------------------|--|-----------------------|---|
|                               | and coordinating development efforts in their respective territorial jurisdictions. They are tasked to a) formulate long-term, medium-term, and annual socio-economic development policies and plans as well as the corresponding budget; b) formulate medium-term and annual public investment programs; c) appraise and prioritize the socio-economic development programs and projects; d) coordinate local investment incentives to promote the inflow and direction of private investment capital; e) coordinate, monitor and evaluate programs and projects. |                       | budgeting linkage and monitoring and evaluation systems at local level in light of the implementation of the Mandanas ruling by 2022. |
| Watershed Management Councils | The watershed management council is a multi-sectoral body that has oversight function in the management of a watershed. It monitors implementation of the watershed management plan and serves as a venue for building consensus on policy directions and on resolving issues and concerns in management of a particular watershed.  | All WMCs are inactive |   |

- Intermediate Result 3.1: Number of major reform initiatives supported**

The SW Project works closely with NEDA as the lead coordinating agency for the PWSSMP and URAF implementation. SW’s project implementing arrangement with NEDA includes support for the action plans of 6 of the 8 Key Result Areas (KRAs)<sup>29</sup> of the PWSSMP and the URAF. The details are provided in Table 31.

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<sup>29</sup> SW has no direct or intervention for KRA 7 - Managing Data and Information; and KRA 8 - Driving Research and Development

**Table 31: PWSSMP KRAs and SW Supported Activities**

| Key Reform Agenda and Priority Actions   | Baseline as of 2019   | SW Supported Reform Initiatives  |
|--|---|--|
| <b>KRA 1 - Establishing Effective WSS Sector Institutions</b>  |   |  |
| <p>a) Creation of WSS Apex Body (DWR &amp; WRC)</p> <p>b) Establishment of the NWMC, pending the creation of the Water Sector Apex Body</p> <p>c) Development of advocacy and communication plan to garner support for the prioritization of the sector policy reforms and investment requirements</p> | <p>a) In 2019, the WRC was subsumed as part of the DWR. The consolidated DWR &amp; WRC bill was endorsed by House of Representatives to Senate in November 2019 and currently pending review by the Senate.</p> <p>b) Draft EO discussed in April 2019 Cabinet Meeting; revised based on July 2019 NEDA-DBM meeting and revised draft EO was submitted to the Office of the President in same month</p> <p>c) No advocacy and communications plan developed</p> | <p>a) Support to NEDA’s advocacy or response to Congress’ request for information or analysis on the pending bills to establish the DWR and the WRC</p> <p>b) Preparation of the implementing rules and regulations (IRR) of the EO on NWMC including the organizational structure and capacity and budgetary requirements</p> <p>c) Support to the advocacy and communications plan for the DWR &amp; WRC</p> |
| <b>KRA 2 - Strengthening Regulatory Environment</b>  |   |  |
| <p>a) Review and rationalize NWRB guidelines for granting of water permits and CPCs</p> <p>b) NWRB, LWUA, and DILG to review current cost recovery framework and tariff setting methodologies to promote financial sustainability of WSPs</p>  | <p>a) Both resource and regulatory reforms are embedded in the draft EO on the NWMC</p> <p>b) Enhancement of methodologies to aid in economic regulation and financial sustainability of WSPs</p> <p>Economic Regulatory Framework and Guidelines for Light-Handed Regulation and Revised Tariff Methodology approved and adopted thru NWRB Board Resolution 25-01818</p>   | <p>Development and institutionalization of toolkits to promote financial sustainability of WSPs including:</p> <ul style="list-style-type: none"> <li>• WSP Assessment Tool</li> <li>• Financial Stress Test</li> <li>• Updated Strategic Business Plan Model</li> <li>• Updated Ring-fencing</li> <li>• Contract Management Guidelines for JVs</li> </ul>   |
| <b>KRA 3- Creating and Ensuring Effective WSS Services</b>   |   |  |
| <p>a) LWUA to set KPI targets for service coverage, performance and financial sustainability</p> <p>b) DILG to encourage</p>   | <p>WASHFIN Central Management Systems (CMS) for LGU-run utilities and Output-based Aid-Blended Finance (OBA-BF) Manuals (program design and structure) prepared</p>   | <p>Pilot implementation of the CMS and OBA-BF in the projects sites with the WASHFIN manuals as guide.</p>   |

| Key Reform Agenda and Priority Actions  | Baseline as of 2019   | SW Supported Reform Initiatives   |
|---|---|---|
| <p>the operation of WSPs as economic enterprises by LGUs and/or with private partners; relatedly DILG issue guidelines to establish CMS for LGU-run utilities</p>   |   |   |
| <p>a) NWRB to do resource assessment and recommend which areas should shift from groundwater to surface water sources; rationalize permit system; and review and update pricing system for resource extraction</p> <p>b) NWRB to develop and implement communications strategy for WDM and wastewater management</p> <p>c) DILG and LWUA to encourage WSPs implementation of NRW reduction programs (leak detection) to achieve standard performance improvement program</p> <p>d) NEDA to coordinate issuance of policy requiring all LGUs to require green technology including use of RWH and storage facilities, and issue the use of water efficient water fixtures</p> <p>e) LWUA and DILG to require WSPs to</p> | <p>On-going preparation of the national water security roadmap by NWRB</p> <p>Last comprehensive groundwater assessment done by JICA in 1998</p> <p>Masterplans for 18 major river basins prepared coordinated by RBCO and NWRB</p> <p>Groundwater Management Plan prepared for Bacolod City under NWRB</p> | <p>Development of studies and tools such as:</p> <ul style="list-style-type: none"> <li>• Water Demand Management Toolkit to promote water conservation to WSPs, LGUs and commercial users</li> <li>• Provincial Water Security Plan framework and tools</li> <li>• Vulnerability Assessment Tool for WSPs</li> </ul> |

| Key Reform Agenda and Priority Actions   | Baseline as of 2019   | SW Supported Reform Initiatives   |
|--|---|---|
| prepare WSS Emergency Response Plans   |   |   |
| <b>KRA 6 - Enabling Access to Funding and Financing</b>  |   |   |
| <p>a) NEDA to coordinate implementation of the URAF</p> <ul style="list-style-type: none"> <li>• Establish the URAF TWG and draft the URAF implementing guidelines</li> <li>• Develop investment program to achieve SDG 6 targets</li> <li>• Develop standard appraisal tools such as a VGF model for rationalizing NG grants</li> <li>• Prepare the capacity development agenda for implementing agencies to effectively carry out mandates and new roles under the URAF</li> <li>• Compile a compendium of reference materials, toolkits, knowledge products for planning, project development, utility reform, etc.</li> </ul> <p>b) LWUA to review and harmonize financing policies with URAF principles</p> | <p>Framework approved by Infra Com in principle in 2019</p> <p>Draft NEDA Board Resolution operationalizing the URAF pending approval</p> <p>Draft URAF IRR prepared under WASHFIN</p> <p>VGF Model for rationalizing NG grants developed</p> | <p>a) Drafting of the Implementing Guidelines of the NB Resolution Operationalizing the URAF (to take off from the WASHFIN draft)</p> <p>b) Provision of TA support to NEDA/ URAF TWG for:</p> <ul style="list-style-type: none"> <li>• Preparation of TOR of the URAF TWG</li> <li>• Strengthening budget advocacy for URAF, development of investment program and monitoring the allocation and utilization for the URAF programs</li> <li>• Refinement of the URAF funding programs and related policies that need to be made consistent with URAF principles (e.g. addressing debt overhang of utilities and aligning LWUA loan pricing policy to market-based rates)</li> <li>• Review of the implementing guidelines of the Mandanas ruling</li> <li>• Application of the VGF model through a combination of structured training programs and one-on-one mentoring</li> </ul> |

| Key Reform Agenda and Priority Actions   | Baseline as of 2019 | SW Supported Reform Initiatives |
|--|---------------------|---------------------------------|
| c) DILG, DOH, and LWUA to conduct capacity needs assessment of WSPs and LGUs and prepare training/ mentoring programs<br>d) DPWH to pursue the inclusion of funding and coverage of NSSMP under the URAF<br>f) DOF and DBM to support URAF budget requirements |                     |                                 |

The Team will continue to backstop NEDA in coordinating the implementation of the priority action plans with key implementing national agencies (DILG, LWUA, DOH, DPWH and NWRB). The Team will help identify champions, prepare the institutional and capacity development agenda to strengthen capacities of the URAF implementing agencies and mobilize resources necessary to operationalize the KRAs.

- **Intermediate Result 3.2: Number of mechanisms developed and / or enhanced for exchanging knowledge on water security**

The SW project will also render initiatives to develop new or enhance existing mechanisms to manage exchanging of knowledge on water security among different institutions and areas. At baseline or prior to the SW project, the study identified six (6) major mechanisms that facilitate knowledge exchange in Palawan, Sarangani and General Santos City (Table 32).

**Table 32: Number of Existing Mechanisms for Exchanging Knowledge on Water Security by Site**

| Project Sites                                 | Number of Mechanisms |                 |                  |                |          |
|---|----------------------|-----------------|------------------|----------------|----------|
|   | Local / LGU Level    | Watershed Level | Provincial Level | Regional Level | Total    |
| Province of Palawan                           | 1                    |                 | 1                | 2              | 4        |
| Province of Sarangani and General Santos City |                      | 1               |                  |                | 1        |
| <b>Total</b>                                  | <b>1</b>             | <b>1</b>        | <b>1</b>         | <b>2</b>       | <b>5</b> |

The mechanisms are enumerated and briefly described below.

## Palawan

- 1) **PPCWD Website and Facebook Page (LGU Level).** The official website of the PPCWD (<http://ppcwater.gov.ph/>) serves as platform to disseminate information to consumers including announcements on water interruptions.
- 2) **Palawan Knowledge Platform for Biodiversity and Sustainable Development (PKP), Provincial Level.** PKP is a network of public and private research institutions in Palawan. A mechanism for knowledge and information sharing in Palawan, it aims to facilitate, coordinate, maintain, improve, and enhance the multi-agency sharing of biological and socio-economic data and information that will support the realization of the goals of the Strategic Environmental Plan for Palawan.
- 3) **The Palawan Scientist.** An externally peer-reviewed multi-disciplinary journal published by the Western Philippines University (WPU), Aborlan, Palawan, Philippines, the journal aims to publish high quality and original research in the fields of agriculture, fisheries and aquatic sciences, environment, education, engineering, mathematics, sociology, and related disciplines (to include arts and humanities). Articles published in this journal that at times include WSS as subject are open access and are also indexed in the master journal list of Clarivate Analytics, ASEAN Citation Index, Philippine E-Journals, and both Google and Google Scholar.
- 4) **Asian Journal of Resilience (AJR).** A journal publication by Palawan State University that aims to become a platform for recommendations and development of frameworks, creations for programs and policies, and discourses about varied approaches in human resilience along the dimensions of the individual, society and human-environment interaction in the Asian context. As a multidisciplinary publication, AJR endorses human resilience as the focal point of intersections of the different fields of study (including WSS matters).

## Sarangani and General Santos City

- 5) **Buayan-Malungon River Basin Summit 2019.** The Summit aimed to prepare the BMRB Roadmap and to encourage various stakeholders to invest or propose projects and activities for the sustainable management of the Buayan-Malungon River Basin. The highlights of the activity included discussions on the Best Practices and Challenges on River Revegetation and Reforestation, the Ridge to Reef Approach and the Draft Executive Order for the creation of the TWG for BMRB-Malungon Cluster

## Negros Occidental

- 6) **Negros Occidental Water Summit.** The summit was undertaken in February 2020 to bring together stakeholders from government, private sector and civil society to tackle four key themes: water supply and quality, sanitation and sewerage, sustainability, and water governance. It gave emphasis on the integrated approach to water resource management, innovative technologies, critical institutional and operational reforms, and investments to build adequate WSS infrastructure and ensure social and environmental protection of the province's water resources.

## IV. Crosscutting

Crosscutting activities shall be undertaken to support implementation of the three components of the project. The activities intend to achieve five (5) indicators. The baseline data according to indicator are provided below.

### A. Crosscutting Indicator 1: Number of tools, technologies, or measures implemented to manage water resources or improved WSS

The SW project will also carry out activities or assistance to the LGUs, WSPs and other WSS institutions to access and effectively implement various tools, technologies or measures that are relevant to planning and decision-making to manage water resources and make the WSS services become more efficient. The baseline assessment identified 13 major tools / technologies / measures in place or being implemented in the project sites (Table 33). These include Lawin Forest and Biodiversity Protection System, Drone and Software "Agisoft", Groundwater Resource and Vulnerability Assessment Database, Checklist for water testing / Assessment of Risks, and others. The other information on each tool / technology / measures are provided in Annex 31.

**Table 33: Number of Tools, Technologies, or Measures for Managing Water Resources and WSS Services by Site**

| Project Sites                                 | Number of Mechanisms |                 |                  |                |           |
|---|----------------------|-----------------|------------------|----------------|-----------|
|   | Local / LGU Level    | Watershed Level | Provincial Level | Regional Level | Total     |
| Province of Palawan                           |                      |                 | 2                |                | 2         |
| Province of Negros Occidental                 | 3                    |                 |                  |                | 3         |
| Province of Sarangani and General Santos City | 5                    | 1               | 1                | 1              | 8         |
| <b>Total</b>                                  | <b>8</b>             | <b>1</b>        | <b>3</b>         | <b>1</b>       | <b>13</b> |

### B. Crosscutting Indicator 2: Number of partnerships developed / institutionalized to manage water resources or improve WSS services

The Project will also facilitate forging partnerships that would bind efforts, priorities and resources of the different actors such as LGUs, WSPs, government institutions and private sector in addressing pressing problems as well as build on opportunities for promoting a more efficient and sustainable management of water resources and in improving the WSS services. At baseline, the study identified 21 major partnerships in place or being implemented in the project sites (Table 34). The types of partnerships include Joint Venture Agreements (JVAs) for the management and operation of the WSPs, MOAs in support of watershed management and forest protection, co-management agreements, partnership agreements, others. The other information on each partnership (e.g., actors involved, objectives, scope) are provided in Annex 32.

**Table 34: Number of Partnerships for the WRM WSS Services by Site**

| Project Sites                                 | Number of Mechanisms |                 |                  |           |
|---|----------------------|-----------------|------------------|-----------|
|   | Local / LGU Level    | Watershed Level | Provincial Level | Total     |
| Province of Palawan                           | 8                    |                 |                  | 8         |
| Province of Negros Occidental                 | 6                    |                 |                  | 6         |
| Province of Sarangani and General Santos City | 4                    | 1               | 2                | 7         |
| <b>Total</b>                                  | <b>18</b>            | <b>1</b>        | <b>2</b>         | <b>21</b> |

### C. Crosscutting Indicator 3: Percentage change of women in decision-making positions in WSPs or sector institutions (focus on LGU-run/managed WDs/WDs and private or independent WDs)

The project will help empower women to get into decision making positions in various organizations or groups that influence the development of WSS or WRM. These can be WSP boards or management, LGU committees, management councils, CSO or POs.

To illustrate the inadequate representation of women in decision making or influencer groups the baseline assessment looked at membership of water district boards or management councils. Women account for merely 32% (less than 50% SW target) of decision-makers in WSPs and sector institutions in the 3 project sites (Palawan and Sarangani, partial data from Negros Occidental). As of this report, only five local partners, Maasim's iWASH Committee (Sarangani), Bago City Water District including two (2) barangay-managed water systems (Negros Occidental and Dumarán water works, registered 50% and above women decision-makers (Table 35).

**Table 35: Summary of Women Participation to Decision-making Positions of WSPs by Site**

| Site            | Organization  | Proportion of Women | % Women Participation |
|-----------------|---|---------------------|-----------------------|
| Palawan         |   | 18 out of 56        | 32%                   |
| Puerto Princesa | Puerto Princesa City Water District                         | 12 out of 34        | 35%                   |
| Puerto Princesa | Board of Palawan Flora, Fauna and Watershed Reserve (PFFWR) | 2 out of 15         | 13%                   |



| Site                                       | Organization                                      | Proportion of Women  | % Women Participation |
|--|---|----------------------|-----------------------|
| Coron                                      | Coron Rural Waterworks and Sanitation Association | 1 officer (male)     | 0%                    |
| Dumaran                                    | Dumaran Waterworks                                | 1 officer (female)   | 100%                  |
| Taytay                                     | Taytay Water District                             | 2 out of 5           | 40%                   |
| <b>Negros Occidental</b>                   |   | <b>19 out of 53</b>  | <b>36%</b>            |
| Bacolod City                               | Water District                                    | 3 out of 8           | 35%                   |
| Bago City                                  | Water District                                    | 3 out of 6           | 50%                   |
|  | Water Management Council                          | 2 out of 6           | 33%                   |
|  | Barangay Mailum Water System                      | 2 out of 4           | 50%                   |
|  | Barangay Ilijan Water System                      | 2 out of 4           | 50%                   |
| Silay City                                 | Water District                                    | 3 out of 9           | 33%                   |
|  | Water Task Force                                  | 2 out of 10          | 20%                   |
| Talisay City                               | Water District                                    | 2 out of 6           | 33%                   |
| <b>Sarangani &amp; General Santos City</b> |   | <b>7 out of 30</b>   | <b>23%</b>            |
| Alabel                                     | Alabel Level III Water System TWG                 | 0 out of 6           | 0%                    |
| Malungon                                   | Malungon Water District                           | 1 out of 3           | 33%                   |
| Maasim                                     | Maasim Water District                             | 3 out of 5           | 60%                   |
| General Santos City                        | Gen. Santos City Water District                   | 3 out of 16          | 19%                   |
| <b>Overall (Across Sites)</b>              |   | <b>44 out of 139</b> | <b>32%</b>            |

#### **D. Crosscutting Indicator 4: Number of persons trained with USG assistance for advancing gender equality or female empowerment through their roles in public or private sector institutions or organizations**

All SW project sites have undertaken at least basic orientation on gender and development (GAD) and gender-sensitivity training (GST) among LGU personnel at the different levels (provincial, city, municipal, even barangay level particularly focused on barangay health workers).

Among the partner water service providers, at least 5 have undertaken gender-related training activities for their staff members. These are: Alabel Level III Water System, General Santos City Water District, Puerto Princesa City Water District, Bago City Water District and Talisay City Water District.

##### **Negros Occidental**

In Negros Occidental Province and the 4 cities of Bacolod, Bago, Silay and Talisay, where the Gender Focal Point System (GFPS) is in place, a wide variety of gender equality and women empowerment trainings for LGU personnel and volunteers ranging from GST to the application of gender assessment tools, and even establishment of inter-agency councils to respond to gender-based violence, were undertaken in 2019.

At the province level, the Gender Focal Teams led the GAD orientation, GAD Planning and Budgeting Workshop, and GAD monitoring and evaluation trainings for GAD Focal Persons. They also organized VAWC Orientation for Barangay Officers, VAWC Desk Officers and members of the Provincial Inter-Agency Council Against Trafficking and VAWC. The GAD Focal Teams reached a total of 295 participants through these training initiatives. In addition, the Provincial Health Office supported the training of a total of 535 Barangay Health Workers.

##### **Bacolod City**

Bacolod City's Department of Social Services and Development (DSSD) organized a Women's Congress participated in by 100 women delegates and a Gender-Responsive Training attended by 150 participants (50 men and 100 women). Furthermore, the City held quarterly meetings of the GAD Executive Committee and Technical Working Group of 15 members (3 men and 12 women).

In addition, the City held a GAD Planning and Budgeting workshop (15 participants); strategic planning with persons with disabilities (30 participants); GST for CLGU employees (150 participants); as well as capacity-building sessions on disaster preparedness and responsible parenthood and family planning (500 participants).

##### **Bago City**

Bago City's Social Welfare and Development Office organized a GST session for a total of 200 CLGU employees and a Gender-Responsive LGU Assessment (GeRL) participated in by 18 LGU staff. For the Bago City Water District, a GST session was also conducted by the HR management for 6 staff (2 men and 4 women).

##### **Silay City**

Similarly, Silay City also underwent a GST session for 300 CLGU personnel and a GeRL assessment with 50 staff. In addition, the city had a learning session for 25 Barangay VAWC Desk Officers.

## **Talisay City**

Talisay City not only had face-to-face trainings but also online webinars focused on gender issues. The CLGU held GAD mainstreaming training (100 participants), GST (220 participants), GAD Planning (35 participants), and training of Barangay Health Workers (54 volunteers).

Moreover, the Talisay City Water District held webinars for its personnel (5 men and 5 women or a total of 10 WD personnel) on the Magna Carta of Women and laws on gender-based violence. In coordination with the Philippine Commission on Women (PCW), the Water District also held trainings on GAD Planning and Budgeting (10 participants) and the use of the Harmonized Gender and Development Guideline (HGDG) (10 participants). Lastly, they undertook a GAD Summit on gender and the COVID-19 pandemic attended by 44 participants (11 men and 33 women).

## **Palawan**

The Department of Natural Resources and Environment (DENR), through its Regional Office, has made strides in providing gender equality and women empowerment trainings among the LGUs in Palawan. All SW project sites in the province reported participating in the comprehensive gender and development (GAD) trainings organized by the environment agency.

At the **provincial LGU**, 9 PENRO personnel participated in a comprehensive GAD learning event that covered gender-sensitivity, gender analysis, gender mainstreaming evaluation, the Harmonized Gender and Development Guidelines (HGDG), as well as GAD planning and budgeting.

On the part of **Puerto Princesa City**, 27 staff-members representing the various agencies participated in a gender-responsive summit held in October 2019. Also the CLGU held a leadership training for 60 barangay health workers.

The PPCWD organized four (4) gender-related trainings for the water district personnel between 2017 and 2018. These trainings consisted of basic orientation on GAD, gender analysis, GAD planning, occupational safety and health, and the use of the HGDG. A total of 149 staff-members of the Water District (89 males and 64 female) undertook the GAD trainings.

The municipalities of **Coron, Dumarán, and Taytay** all underwent the DENR comprehensive GAD training organized by the DENR Regional Office, each sending three (3) females from their respective municipalities. In addition to the DENR-organized GAD training, Dumarán reported a GAD planning and budgeting training for its 16 barangays and 2 LGU officers. They likewise reported a training of 75 barangay health workers.

## **Sarangani**

The Sarangani PLGU provided gender-sensitivity training (GST) for a total of 64 newly-elected women officers. In addition, they trained 40 indigenous women and 40 new Philippine National Police (PNP) officers. Capacity-building in peace-building reached 53 representatives of women, IP and settlers' organizations.

The **General Santos City LGU** trained a total of 330 employees (192 males and 138 female) of the various agencies in GAD. An additional aggregate figure of 3508 participated in the city's in-house trainings on gender-responsiveness, culture-sensitivity and non-discrimination.

The **Alabel** MLGU, for its part, provided orientation to a total of 233 personnel (no disaggregation available) on GAD, women’s rights, sexual harassment and the committee on decorum and investigation (CODI), as well as gender and unions in the public service.

To date, **Maasim** has conducted a GST for 95 elected officials.

**Malungon** reported four (4) council meetings of the gender focal persons and quarterly meetings to discuss GAD plans and budget but was unable to provide number of participants. Malungon also noted the training and information campaign on the Magna Carta of Women reaching a total of 6995 women.

**Kiamba** held GST for a total of 241 MLGU employees. Furthermore, they undertook the Gender Responsive LGU (GeRL) orientation for 34 staff and gender-responsive case management for 10 responders. For its GAD trainings, Kiamba focused on the education sector, reaching 540 teachers, school administrators and PTA officers (211 males and 329 female). The Kiamba LGU further cited development of gender and culture-sensitive and age-appropriate modules for day care children with 57 participants. Lastly, they cited training of 40 staff (17 males and 23 female) in camp management for internally-displaced persons (IDPs).

**For gender-related trainings specific to water service providers**, GSCWD reported holding sessions on gender analysis and the use of the HGDG for 64 of their staff. In addition, their office was represented in the 1<sup>st</sup> Gender and Development Summit for Local Water Districts by three (3) personnel (2 males and 1 female). In Alabel, GST for a total of 33 staff of the Level III Water System was also undertaken.

#### **E. Crosscutting Indicator 5: Proportion of female participants in USG assisted programs designed to increase access to productive economic resources (assets, credit, income, employment)**

##### **Negros Occidental**

Negros Occidental Province and the 4 cities of Bacolod, Bago, Silay and Talisay registered a total of 4300 women beneficiaries from the various employment and livelihood programs implemented by the provincial and city LGUs in 2019. These relevant programs are as follows (Table 36).

**Table 36: Beneficiaries of Various Programs and Activities on Increasing Access to Productive Economic Resources: Number of People by Sex, Negros Occidental**

| Site              | Program   | Beneficiaries |        | Total Beneficiaries |
|-------------------|---|---------------|--------|---------------------|
|                   |   | Male          | Female |                     |
| Negros Occidental | Training for Work (Scholarship Program focused on IT Business Process Management)   | 165           | 355    | 500                 |
| Bacolod City      | Skills training and livelihood including capital assistance and business management |               | 50     | 50                  |

| Site         | Program   | Beneficiaries |              | Total Beneficiaries |
|--------------|---|---------------|--------------|---------------------|
|              |   | Male          | Female       |                     |
|              | Relocation and resettlement program for informal settlers – income-generation component |               | 1623         | 1623                |
| Bago City    | Seed capital and skills training for women and indigent families                        |               |              | 935                 |
|              | Special program for employment and economic empowerment of students                     | 145           | 191          | 336                 |
|              | Livelihood development assistance program – Women in Tourism                            |               | 71           | 71                  |
| Silay City   | Department of Agriculture program for women’s economic activities                       |               |              | 75                  |
|              | Food production for rural women   | 75            | 70           | 145                 |
|              | Use and management of fisheries and aquatic resources                                   | 568           | 1870         | 2438                |
| Talisay City | Food for Work Program and Job Fairs   |               |              | 8300                |
|              | Summer Job Placement and City PESO Job Fairs  |               |              | 200                 |
|              | Financial Aid for Women in Emergency Situation  |               | 90           | 90                  |
| <b>Total</b> |   | <b>953</b>    | <b>4,300</b> | <b>7,293</b>        |

**Palawan**

**Puerto Princesa City** reported various livelihood and income-generating programs benefitting a total of 5480 individuals, consisting of 2915 women and 2608 men, between 2016 to 2018 (Table 37).

**Table 37: Beneficiaries of Various Programs and Activities on Increasing Access to Productive Economic Resources; Number of People by Sex, Palawan**

| Programs  | Male | Female | Total |
|---|------|--------|-------|
| 1. Biodiversity Conservation in Puerto Princesa's Northwest Area and It's Attached Interconnected | 58   | 45     | 103   |

| Programs  | Male                        | Female | Total        |
|---|-----------------------------|--------|--------------|
| Ecosystem – Payment of labor in bamboo seeding propagation                      |                             |        |              |
| 2. Plow-Plant-Pay Later Program   |                             | 165    | 165          |
| 3. Livelihood/skills training for women PWDs                                    |                             | 67     | 67           |
| 4. Practical Skill and Development Program                                      |                             | 12     | 12           |
| 5. Aid to Individual in Crisis Situation  | 330                         | 715    | 1045         |
| 6. Institutional development and livelihood support to farmers and fisher folks | 735                         | 250    | 985          |
| 7. “Mariculture” production   | 1247                        | 105    | 1352         |
| 8. Conducted training/seminars on Duck Raising and Production                   | 199                         | 303    | 502          |
| 9. Poverty Alleviation through Sustainable Livelihood Strategy Program          |                             | 746    | 746          |
| 10. NEGOSYO Center Livelihood Program   | 39                          | 160    | 199          |
| 11. Livelihood for Solo Parents   |                             | 42     | 42           |
| 12. Self -employment Assistance Program (SEAP)                                  |                             | 205    | 205          |
| 13. Community-Based Sustainable Tourism (CBST)                                  |                             | 100    | 100          |
| Total   | 2608                        | 2915   | 5523         |
| 14. Organic Hog-Raising Livelihood Project                                      | No disaggregation available |        | 104 families |

Some of the above programs specifically targeted women (example, livelihood for women PWDs, the duck-raising seminar and the SEAP). The livelihood support for farmers and fisher folk including training on marine culture, however, attracted a significantly bigger number of male than female beneficiaries.

The municipality of **Taytay** reported the following livelihood and economic resources programs benefiting 201 women out of 279 resident-beneficiaries (Table 38).

**Table 38: Beneficiaries of Various Programs and Activities on Increasing Access to Productive Economic Resources: Number of People by Sex, Taytay, Palawan**

| Programs  | Beneficiaries                 |        |       |
|---|-------------------------------|--------|-------|
|   | Male                          | Female | Total |
| Plow-Plant-Pay Later                                      |                               | 165    | 165   |
| Livelihood Assistance for Solo Parents and VAWC Survivors |                               | 36     | 36    |
| SureAid (Land Bank of the Philippines)                    | (no disaggregation available) |        | 279   |

### Sarangani

The provincial LGU of Sarangani reported providing support to a total of 156 women through four (4) programs (Table 39).

**Table 39: Beneficiaries of Various Programs and Activities on Increasing Access to Productive Economic Resources; Number of People by Sex, Sarangani**

| Programs  | Women Beneficiaries |
|---|---------------------|
| Inclusive Mainstreaming of GAD Lifelong Advancement Development (IMGLAD) of Tourism | 10                  |
| Market Linkage through Innovative Trade and Entrepreneurship (M-LITE)               | 55                  |
| Product development, marketing and labeling   | 88                  |
| Financial Assistance to Marginalized Women  | 3                   |

**General Santos City** LGU reported reaching a total of 5478 beneficiaries consisting of 3731 women and 1747 men through the following programs (Table 40).

**Table 40: Beneficiaries of Various Programs and Activities on Increasing Access to Productive Economic Resources; Number of People by Sex, General Santos City**

| GSC Livelihood Programs   | Male | Female | Total       |
|---|------|--------|-------------|
| Skills training for women   | 1000 | 3000   | 4000        |
| Orientation on cooperatives   | 562  | 456    | <b>1018</b> |
| Financing schemes to entrepreneurs  | 5    | 16     | <b>21</b>   |
| Facilitate provision of stalls to customers during the conduct of festivals in the city | 0    | 14     | <b>14</b>   |

| <b>GSC Livelihood Programs</b>   | <b>Male</b> | <b>Female</b> | <b>Total</b> |
|--|-------------|---------------|--------------|
| Provision of Livelihood to Persons With Disability (PWD's) / Returning Women OFW / OFW beneficiaries / Skilled Women | 25          | 45            | <b>70</b>    |
| Organic Fertilizer & Concoction Production (70pax), Urban Gardening (35pax); GAP on Vegetables (50 pax)              | 150         | 155           | <b>305</b>   |
| 2 Trainings on Entrepreneurship (25 pax); Training on Free Range Chicken Production (25 pax)                         | 5           | 45            | <b>50</b>    |

#### **Alabel, Malungon, Maasim and Kiamba**

Alabel had the Kabuhayan sa Kababaihan program that benefited seven (7) women.

Malungon provided support facility for 90 IP women for the production of free-range native chickens. The LGU also provided technical assistance on appropriate farming technologies to 8892 male and 5610 female farmers or a total of 14502 beneficiaries.

Maasim's skills training, livelihood projects, fisheries development, livestock, and crop management programs benefited a total of 425 residents comprised of 385 female and 40 male residents.

Kiamba provided economic assistance to an equal number of male and female out-of-school youth, 6 males and 6 females, for a total of 12 youth. 362 marginalized women received training on chicken, duck, rabbit, and vegetable production. Lastly, three (3) women received capital assistance from the LGU.



# CONCLUSION

This section provides the overall findings of the study and the range of activities and initiatives that may be undertaken to pursue the SW project objectives.

## **Access to Water Supply and Sanitation**

The study affirmed huge access gaps and variable quality of service that unequivocally need improvements. The key factors affecting the level and quality of access to safe drinking water and sanitation services are as follows.

### **I. Financial constraints**

Increasing access and improving the quality of water and sanitation services requires investments from diverse stakeholders, including LGUs, WDs, other WSPs, national government agencies, private institutions, and households. The investments needed include new water supply systems especially for the far flung areas (island barangays, upstream communities), expansion of existing facilities through development of additional water sources and / or piping, upgrading of existing facilities (e.g. replacement of old pipes) and water quality monitoring, among others. Increasing and improving access to sanitation services, on the other hand, requires investments for septage management services and household sanitation facilities.

Though solutions or measures are already outlined, dearth in financial resources limits the expansion and improvement of the WSS services in the targeted areas. In CY 2019 (baseline period), the LGUs (PLGUs and Year I priority municipalities) allocated only about 4% of their total annual budgets for WSS projects. The low allocation does not reflect low interest or regard for WSS services, rather an offshoot of the overall fiscal limitation and competing uses of funds for equally important services (e.g., education, health, roads, livelihood development).

Other institutions such as WDs, NGAs and private sector, particularly those entering into public private partnerships or joint venture arrangements, contribute to investments for WSS services. In spite of this, however, the overall level of investment remains insufficient.

The limited financial capacity of some households to pay for water service connections, as well as spend for either construction or upgrading of toilets and septic tanks, also hinders access.

Moreover, there are two major factors that could affect the investments in the WSS and WRM sectors. First is the impact of the COVID-19 pandemic. The national and local governments have realigned their budgets for COVID response. WSPs have experienced reduced collection for almost a year now and will likely prioritize working capital over capital investments. At the household level, the economic downturn has affected incomes and, therefore, ability to invest in water supply connections or construction of improved sanitation facilities. The second factor is the implementation of the Supreme Court ruling, starting in 2022, to provide LGUs a share, not just in internal revenues but in other national government revenues, such as customs duties and tariffs. The effect will be about 50% increase in the internal revenue allotment. With this increase in the LGUs' share, national government will reduce targeted support to LGUs, including the current grant programs for water supply and sanitation services. One may say, the increase in LGU revenues opens opportunities for local investments for WSS and WRM. However, along with the increase in revenue share, national government will also be devolving more functions and services to LGUs. Hence, there will be more competing demands on the resources of LGUs.

### **2. Limited technical capacities of WSPs on WSS system development, utility management and sound O&M practices**

Many of the LGU water supply units, community based WSPs and some WDs lack technical capacity on the following aspects that also contribute to limited expansion and improvement of WSS services:

- (i) Water resource identification / investigation- lack of technical knowledge in identification and development of additional water resources, such as geo-resistivity surveys and expansion of the distribution network
- (ii) Formulation of Feasibility Study (FS) and Detailed Engineering Design (DED): lack of knowledge in preparing FS and climate resilient DED of water systems
- (iii) Water supply system management and O&M practices: lack of management capacity or knowledge in O&M standards and good practices e.g., water quality monitoring, water safety measures, periodic and routine maintenance of the infrastructure; poor systems, e.g., absence of an automated billing and collection systems
- (iv) Project development for community-wide waste water treatment services - lack of technical capacity to prepare or commission FS and DED for septage management or sewerage system

### **3. Low acceptance / recognition on the importance of safe drinking water and sanitation services**

People particularly in the far flung areas, including coastal communities, continue to use unsafe sources of water and practice open defecation, or use unimproved sanitation services due to lack of appreciation of the health and economic cost of such practices.

Given the situation, increasing the level and quality of access to safe drinking water and sanitation services in the priority areas requires the key interventions or initiatives as follows:

- (i) Assistance to LGUs, WDs and WSPs to access financing sources
  - a. Linking or introducing the LGUs / WDs / WSPs to financing institutions (government and private sector) and familiarizing them with lending requirements;
  - b. Technical assistance in preparing or complying with the requirements for financing e.g. FS, DED, Business Plan, among others;
  - c. Assistance to increase revenues of the WDs / WSPs through development of billing collection system to improve collection efficiency and / or updating of water tariffs;
- (ii) Assistance to LGUs / WDs / WSPs to expand and improve access to sanitation services, which include
  - a. Preparation of FS/ DED for Septate Management Program;
  - b. Training on septage management procurement and operations; and,
  - c. Linking households with financing institutions for the construction of toilets/ septic tanks according to the DOH standard.
- (iii) Technical assistance to LGUs / WDs / WSPs to address capacity building needs
- (iv) Advise LGUs in the preparation of IEC program for WASH.

### **Water Resources Management**

Annually, the average aggregate forest loss in the priority watersheds in the project sites stands at 5,199 hectares, which produces roughly 685,139 metric tons of GHG emissions. The key causes or drivers of deforestation include land conversion to sugar cane, banana, mango and other agricultural crops; firewood gathering and charcoal making and slash and burn farming, illegal cutting/ timber poaching

activities, quarrying, and increasing migration to upland areas. This is seen to be a consequence of the situation that of the entire watershed forestlands, only 1% is under improved management.

Efforts underway towards mitigating forest depletion and GHG emissions include reforestation and agroforestry activities using indigenous species and formulation of watershed management plans, implementation of the Lawin Forest and Biodiversity Protection System, regular monitoring and establishment of Ranger Station for monitoring and enforcement, strengthening of CBFM peoples' organizations, establishment of protection and communal forests. The investment of the LGUs in these landscape activities, however, is minimal constituting only 0.6% of its annual budgets (2019) resulting to poor forest protection.

Moreover, the Watershed Management Councils (WMCs), which are mandated to perform oversight functions in the management of a watersheds, are mostly inactive. They need to be reconstituted and capacitated on the preparation of watershed management plans and investment programs.

The watersheds in the province of Negros Occidental need high attention as these exhibit the highest average annual GHG emission at 69,923 metric tons, followed by the watersheds in the provinces of Palawan and Sarangani with 58,313 and 21,979 metric tons respectively.

Moving forward, assistance or initiatives needed to reduce forest depletion, which is key to substantially lessen GHG emissions in the watersheds, are as follows:

- A. Mobilization of investments for landscape activities, largely same types of measures being implemented in various parts of the watersheds. The specific assistance includes the following activities:
  1. Mobilization of proposals to engage the upland communities in various landscape activities;
  2. Forging partnership with the private organizations / institutions in the provision of technical and financial assistance to the People's Organizations or Proponent Groups to implement measures;
  3. Assistance to the LGUs and People's Organizations (POs) or Proponent Groups (PGs) to access financial assistance from the NGAs, private financing institutions and others to finance implementation of landscape activities / measures; and,
  4. Assistance to the LGUs, POs and PGs in developing proposals and in complying with the requirements for financing
- B. Assistance to strengthen or support implementation of the on-going landscape activities / measures in the watersheds
- C. Assistance to activate WMCs (re-organization of members, convening members, others)
- D. Assistance to the LGUs in formulating forest conservation area plan;
- E. Organization of barangay/municipal implementation teams of forest conservation plan;
- F. Enactment of local policies to support implementation of conservation plan;
- G. Limitation of infrastructure expansion in the uplands;
- H. Ecotourism development
- I. Updating of the Forest Land Use Plan (FLUP);
- J. Strict implementation of Co-management of Forest and Forest Lands;

## **Water Sector Governance**

The study has identified existing institutional mechanisms at the national, regional and Provincial / Local levels that are vital to coordinate and monitor PWSSP and URAF initiatives; strengthen advocacy for WSS reform initiatives, resource mobilization for WSS investments and enhanced WRM; and promote knowledge exchange. The SW project shall support and build on these mechanisms to strengthen assistance to various WSS institutions to effectively manage water resources or improve water supply and sanitation services. The institutional mechanisms at the national level involve (i) Subcommittee on Water Resources (SCWR) that will be reconstituted as the URAF Steering Committee; (ii) URAF Steering Committee; (iii) URAF TWG; (iv) Water Sanitation Sector; and (v) Water Alliance. The institutional mechanisms at the regional level involves Regional Water and Sanitation Hubs (RHubs). At the provincial or local level includes (i) Palawan Council for Sustainable Development (PCSD) & Palawan Knowledge Platform for Biodiversity and Sustainable Development; (ii) Provincial/ City/Municipal Development Councils; and (iii) Local Watershed Development Councils that needs to be reconstituted and strengthened in performing its functions effectively and sustainably.

Specific WDs and other WSPs such as LGU-run water facilities, BWSAs and RWSAs have also been determined to be the subject or targets of SW project assistance for strengthening water sector governance at the local level (by city / municipality), specifically, on managing water resources and improving level and quality of access to WSS services in the targeted areas. The key assistance that can be rendered to the WDs / WSPs include water resource identification and management, water quality monitoring, preparation of DEDs, capability building on O&M, business plan preparation, ring-fencing and others.

Along with succeeding to establish an information base against SW indicators, the study shall allow the SW project, partner LGUs and other WSS service institutions to align interests, assistance and resources towards increasing and improving access to safe WSS services. This will be attained by understanding the condition of WSS sectors, including issues and challenges; determining specific assistance needed by the LGUs, WDs, WSPs and other WSS service institutions; water resources management through measures that would avoid further forest depletion and corresponding GHG emissions among watersheds; and shaping a more effective water governance system at the local, regional and national levels. Key to this is building on current efforts, including partnerships between LGUs and other institutions, as well as providing needed assistance to the LGUs, WDs, WSPS, and other WSS institutions identified in this study.

# ANNEXES

## Annex I: Safe Water Project Results Framework (Roadmap)

Objective I: Access to resilient water supply and sanitation services Improved

| Approach  | Sub-Results  | Intermediate Results   | Outcomes  | Impact  |
|---|--|--|---|---|
| Strengthening capacities for WSS service delivery | <p>Access to tools, technologies, training on water supply and sanitation service provision provided;</p> <p>Access to tools, information, evidences and training on risk analysis for the management of water resources provided</p> <p>Analysis on bulk water sources and storage options provided</p> <p>Community voices in service delivery (especially for women) strengthened</p> | <p>Operational, technical and financial management capacities of the WSPs improved for better performance and/or service expansion</p> <p>Understanding of WSPs on hydrologic and climate analysis improved enabling informed decisions for better water sources planning that in turn ensure stable and sustainable supply</p> <p>Participatory coordination mechanisms among WSS service institutions and diverse stakeholders at various levels institutionalized</p> | Access to resilient water supply and sanitation services improved | Improved water security of water-stressed communities |
| Leveraging additional funding                     | Access to public and private financing to build, operate and maintain resilient WSS  | New and additional financing mobilized, enabling the implementation of water and sanitation projects,  |   |   |

| <b>Approach</b>  | <b>Sub-Results</b>  | <b>Intermediate Results</b>  | <b>Outcomes</b> | <b>Impact</b> |
|--|---|--|-----------------|---------------|
|  | <p>infrastructure improved</p> <p>Financing approaches to accelerate WSS expansion and improvement developed, including facilitation of household investments for improved sanitation facilities or water supply connections</p>                          | <p>and affordability of household investments for improved water supply connection or sanitation facilities</p>  |                 |               |
| <p>Establishing protocols and standards for a more integrated and coordinated planning of WSS service, LGU development and water resource management</p> | <p>Tools and processes for coherent and integrated planning and coordination among LGUs, WSPs, and river basin bodies and other stakeholders improved</p> <p>Water security awareness among diverse stakeholders (including private sector) increased</p> | <p>Integrated local policies, plans and investment programs prepared and adopted by the LGUs, WSPs and other stakeholders for sustainable WSS services and WRM</p> |                 |               |

**Objective 2: Sustainable Management of Water Resources Improved**

| <b>Approach</b>  | <b>Sub-Results</b>   | <b>Intermediate Results</b>   | <b>Outcomes</b>  | <b>Impact</b>  |
|--|--|---|--|--|
| <p>Enabling environment and institutional mechanisms on IWRM</p> | <p>Tools, information and trainings provided to enhance IWRM capacities of institutions and stakeholders</p> | <p>IWRM-informed water policies / strategies established</p> <p>Partnerships on improved WSS services and WRM</p> | <p>Increased management effectiveness of critical watersheds and water resources</p> | <p>Improved water security of water-stressed communities</p> |

|   |  |   |  |  |
|---|--|---|--|--|
|   | <p>Viability of PES schemes demonstrated</p> <p>Nature-based solutions to improve water storage capacity and regulate flow levels introduced</p>   | <p>developed and/or institutionalized</p> <p>Investments for landscape and watershed protection, conservation and rehabilitation increased contributing to improved economic conditions of upland communities</p>   |  |  |
| <p>Establishing protocols and standards on efficient water resource use and water demand management</p> | <p>Water conservation awareness improved</p> <p>Support to the implementation of Green Building Code and national water fixture efficiency labelling standard provided</p> <p>Water efficient technology options like low-flow water fixtures, rainwater harvesting, storage and reuse of water, considering economic, social, equity factors provided</p> <p>Water audits and best practices on efficient use promoted</p> <p>Use of incentives and fees to promote water conservation and efficiency increased</p> | <p>Increased adoption of measures to better manage, conserve and use water to ease pressure on water resources</p> <p>Capacities and actions of public and private actors on water conservation enhanced</p> <p>Water efficiency protocols (i.e. WDM audit and green infrastructures) for land development and associated industries adopted</p> <p>Incentives on promoting water conservation and efficiency established</p> |  |  |

**Objective 3: Water Sector Governance Strengthened**

| <b>Approach</b>   | <b>Sub-Results</b>  | <b>Intermediate Results</b>  | <b>Outcomes</b>   | <b>Impact</b>   |
|---|---|--|---|---|
| Facilitating the implementation of the reform agenda for the WSS sector   | NEDA-led government policy decisions and actions to operationalize the UFF and Sector Master Plan informed by sound analytics and evidences   | Water and sanitation sector reforms prioritized in the Master Plan and UFF financing policy advanced and implemented   | Water sector governance strengthened characterized by transparency, accountability and effectiveness. | Improved water security of water-stressed communities |
| Establishing approaches, models and protocols on knowledge sharing for scaling up resilient WSS service provision and sustainable WRM | Models, approaches, and best practices for water security, WRM, and resilience disseminated, exchanged and applied<br><br>International best practices are identified and incorporated in the models and approaches developed for improving WSS service and sustainable WRM | Broad constituency of actors (national and local government policy makers and executing agencies, WSPs and constituencies) informed, voice ideas, contribute and participate in the application of best practices and development and implementation of water security initiatives |   |   |



## Annex 2: Offices / Institutions Reached by the SW Project Site Teams in Gathering Baseline Data

### Safe Water Project Baseline Data Gathering

#### Summary of IDIs and FGDs Conducted for Gathering Qualitative Data; Provinces of Palawan, Negros Occidental and Sarangani (including General Santos City)

| Province / City / Municipality                | Institutions / Offices Reached (IDIs / FGDs)              | Date of the IDI / FGD Activity     | Respondents |          |
|---|---|------------------------------------|-------------|----------|
|   |   |                                    | Name        | Position |
| <b>PALAWAN</b>                                |   |                                    |             |          |
| <b>Provincial Government of Palawan (PGP)</b> | PGP I-Support Water Infrastructure Office                 |                                    |             |          |
|   | A Single Drop for Safe Water                              | September 10, 2020                 |             |          |
|   | Palawan Council for Sustainable Development Staff (PCSDS) | October 14 & 18; September 4, 2020 |             |          |
| <b>Puerto Princesa City</b>                   | City Health Office  | August 25, 2020                    |             |          |
|   | PPC Water District  | October 26, 2020                   |             |          |
|   |   | October 26, 2020                   |             |          |
|   |   | October 6, 2020                    |             |          |
|   |   |                                    |             |          |
|   | Puerto Pension and Daluyon Beach Resort                   | September 22, 2020                 |             |          |
|   | Puerto Pension  | September 22, 2020                 |             |          |
|   | USAID SURGE   | September 8, 2020                  |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)              | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|---|--------------------------------|-------------|----------|
|                                |   |                                | Name        | Position |
|                                | City Environment and Natural Resources Office (City ENRO) | July 24, 2020                  |             |          |
|                                |   |                                |             |          |
|                                |   |                                |             |          |
|                                | Community Environment and Natural Resources (CENRO)       | July 21, 2020                  |             |          |
| <b>Dumaran</b>                 | Office of the Municipal Administrator                     | August 17, 2020                |             |          |
|                                | Municipal Planning and Development Office (MPDO)          | August 17, 2020                |             |          |
|                                | Municipal Health Office (MHO)                             | August 18, 2020                |             |          |
| <b>Taytay</b>                  | Municipal Planning and Development Office (MPDO)          | July 29, 2020                  |             |          |
|                                |   | August 12; October 14, 2020    |             |          |
|                                | Municipal Health Office (MHO)                             | July 29, 2020                  |             |          |
|                                |   | August 5, 2020                 |             |          |
|                                | Gender and Development Office                             | July 29; October 12, 2020      |             |          |
|                                | Taytay Water System Management Office                     | July 29, 2020                  |             |          |
|                                | Taytay Water District                                     | August 13, 2020                |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)               | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                | Municipal Environment and Natural Resources Office (MENRO) | August 12, 2020                |             |          |
|                                | Municipal Tourism Office                                   | August 12, 2020                |             |          |
|                                | Municipal Information Office                               | August 12, 2020                |             |          |
|                                | CENRO  | July 29, 2020                  |             |          |
|                                |  | August 12, 2020                |             |          |
| <b>NEGROS OCCIDENTAL</b>       |  |                                |             |          |
| Talisay City, Neg. Occ.        | LGU-Talisay City LGU                                       | August 3, 2020                 |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
| Silay City, Neg. Occ.          | LGU-Silay City   | August 3, 2020                 |             |          |
|                                | Silay Water District                                       | August 3, 2020                 |             |          |
|                                |  |                                |             |          |
| Negros Occidental              | DENR-PENRO   | August 4, 2020                 |             |          |
| Bacolod City                   | BACIWA   | August 4, 2020                 |             |          |
| Isabela, Neg. Occ.             | LGU-Isabela  | August 5, 2020                 |             |          |
|                                |  |                                |             |          |

| Province / City / Municipality    | Institutions / Offices Reached (IDIs / FGDs) | Date of the IDI / FGD Activity | Respondents |          |
|-----------------------------------|--|--------------------------------|-------------|----------|
|                                   |  |                                | Name        | Position |
| Bago City, Neg. Occ.              | BACIWAD                                      | August 5, 2020                 |             |          |
|                                   |  |                                |             |          |
|                                   | LGU-Bago City                                | August 5, 2020                 |             |          |
|                                   |  |                                |             |          |
|                                   |  |                                |             |          |
| Murcia, Neg. Occ.                 | Murcia Water District                        | August 6, 2020                 |             |          |
| Murcia, Neg. Occ.                 | Murcia Water District                        | August 6, 2020                 |             |          |
|                                   |  |                                |             |          |
|                                   |  |                                |             |          |
|                                   |  |                                |             |          |
| Don Salvador Benedicto, Neg. Occ. | LGU-Don Salvador Benedicto LGU               | August 6, 2020                 |             |          |
|                                   |  |                                |             |          |
|                                   |  |                                |             |          |
|                                   |  |                                |             |          |
| San Carlos City, Neg. Occ.        | LGU-San Carlos City Waterworks Department    | August 7, 2020                 |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs) | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | LGU-San Carlos City                          | August 7, 2020                 |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
| Talisay City, Neg. Occ         | Talisay Water District                       | August 12, 2020                |             |          |
| Negros Occidental              | DENR-CENRO Bago                              | August 13, 2020                |             |          |
| Negros Occidental              | DENR-CENRO Bago                              | August 13, 2020                |             |          |
| Negros Occidental              | DENR-PENRO                                   | August 13, 2020                |             |          |
| <b>SARANGANI</b>               |  |                                |             |          |
| Sarangani Provincial Govt.     | PENRO, Sarangani Province                    | 07/08/2020                     |             |          |
|                                | CDD, DENR Region XII                         | 20/07/2020                     |             |          |
|                                | RBCO, Region XII                             | 28/09/2020                     |             |          |
|                                | PPDO Sarangani Province                      |                                |             |          |
| Alabel                         | BLGU Maribulan                               | 03/08/2020                     |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)                       | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                |  |                                |             |          |
|                                | BLGU Alegria   | 03/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                | Purok Pongoleel, Alegria   | 03/08/2020                     |             |          |
|                                | BLGU Ladol   | 04/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | Ladol Rural Waterworks and Sanitation Association, Inc. (LARWASAI) | 04/08/2020                     |             |          |
|                                | BLGU Kawas   | 04/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                | BAWASA/ Brgy Kawas   | 04/08/2020                     |             |          |
|                                | BLGU Bagacay   | 04/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                | San Miguel Multi-Purpose Coop Level III Water System/ Brgy Bagacay | 04/08/2020                     |             |          |
|                                | Purok Fatima Level III Water System (Brgy Bagacay)                 | 04/08/2020                     |             |          |
|                                | BAWASLA Level III Water System/ Brgy Bagacay                       | 04/08/2020                     |             |          |
|                                | Private-owned Level II WS/ Brgy Pag-asa                            | 04/08/2020                     |             |          |

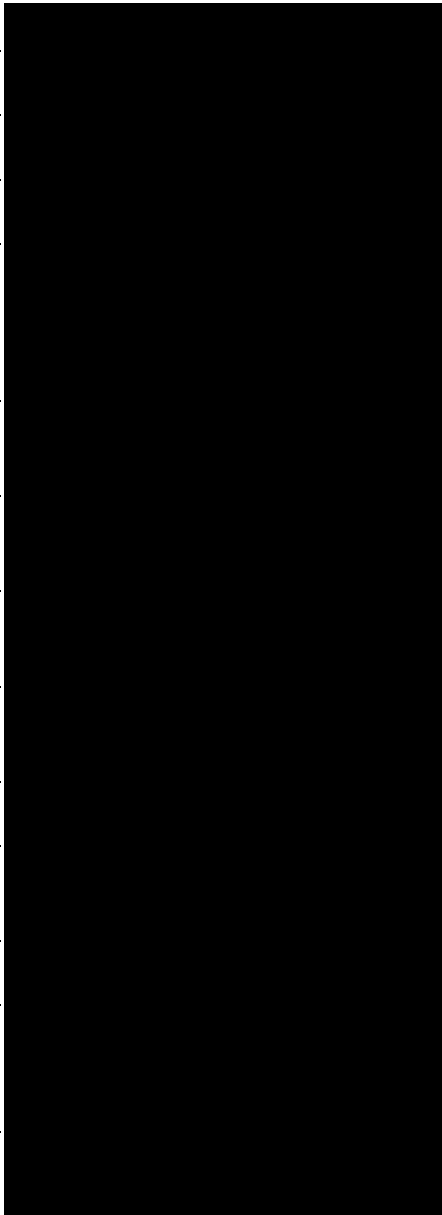
| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)   | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                | PO-managed Level II WS Pag-Asa Indigenous People Health Organization (PIPHO)/ Brgy Pag-asa | 04/08/2020                     |             |          |
|                                | BLGU Baluntay  | 05/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | BLGU Tokawal   | 05/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                | BLGU Domolok   | 05/08/2020                     |             |          |
|                                | Municipal Planning and Development Office (MPDO)   | 06/08/2020                     |             |          |
|                                | Office of the Municipal Agriculture (OMAG)   | 06/08/2020                     |             |          |
|                                | Municipal Engineering Office (MEO)   | 07/08/2020                     |             |          |
|                                | Municipal Local Government Operations Office (MLGOO)                                       | 07/08/2020                     |             |          |
|                                | DILG Sarangani   | 07/08/2020                     |             |          |
|                                | Municipal Health Office (MHO)  | 07/08/2020                     |             |          |
|                                | Office of the Municipal Agriculture (OMAG)   | 07/08/2020                     |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)              | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|---|--------------------------------|-------------|----------|
|                                |   |                                | Name        | Position |
|                                |   |                                |             |          |
|                                | Municipal Environment and Natural Resource Office (MENRO) | 07/08/2020                     |             |          |
|                                | Municipal Administrator Office                            | 07/08/2020                     |             |          |
|                                | Municipal Budget Office                                   | 07/08/2020                     |             |          |
| Malungon                       | BLGU Malalag Cogon  | 10/08/2020                     |             |          |
|                                |   |                                |             |          |
|                                |   |                                |             |          |
|                                |   |                                |             |          |
|                                |   |                                |             |          |
|                                | BAWASA - Malalag Cogon                                    | 10/08/2020                     |             |          |
|                                | KALAHI Water System/ Malalag Cogon                        | 10/08/2020                     |             |          |
|                                | BLGU Talus  | 11/08/2020                     |             |          |
|                                |   |                                |             |          |
|                                | BAWASA - Brgy Talus                                       | 11/08/2020                     |             |          |
|                                | MENRO - Malungon  | 12/08/2020                     |             |          |
|                                |   |                                |             |          |
|                                |   |                                |             |          |



| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs) | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                | MHO - Malungon                               | 12/08/2020                     |             |          |
|                                | Municipal Budget Office                      | 12/08/2020                     |             |          |
|                                | DTI Negosyo Center Malungon                  | 12/08/2020                     |             |          |
|                                | M.O. - Permits                               | 12/08/2020                     |             |          |
|                                | OMAG - Malungon                              | 12/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                | Sodaco Water System/ Malalag Cogon           | 17/08/2020                     |             |          |
|                                | BLGU Upper Mainit                            | 17/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | BLGU Datal Batong                            | 21/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | BLGU Malungon Gamay                          | 26/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | BLGU Upper Lumabat                           | 27/08/2020                     |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)                         | Date of the IDI / FGD Activity | Respondents |          |
|--------------------------------|--|--------------------------------|-------------|----------|
|                                |  |                                | Name        | Position |
|                                |  |                                |             |          |
|                                | BLGU San Juan  | 28/08/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | BLGU San Roque   | 28/08/2020                     |             |          |
|                                |  |                                |             |          |
| General Santos City            | BLGU Baluan  | 08/09/2020                     |             |          |
|                                |  |                                |             |          |
|                                | Minanga Rural Waterworks Sanitation Association (MIRWASA)/ Buayan    | 08/09/2020                     |             |          |
|                                | Minanga Rural Waterworks Sanitation Association (MIRWASA)/ Buayan    | 08/09/2020                     |             |          |
|                                | BLGU Tinagacan   | 10/09/2020                     |             |          |
|                                |  |                                |             |          |
|                                |  |                                |             |          |
|                                | Tinagacan Kalayaan Waterworks Sanitation, Inc (TIKAWASAI)/ Tinagacan | 10/09/2020                     |             |          |
|                                |  |                                |             |          |
|                                | BLGU Olympog   | 10/09/2020                     |             |          |
|                                |  |                                |             |          |
|                                | BLGU Ligaya  | 10/09/2020                     |             |          |

| Province / City / Municipality | Institutions / Offices Reached (IDIs / FGDs)                    | Date of the IDI / FGD Activity | Respondents   |          |
|--------------------------------|---|--------------------------------|---|----------|
|                                |   |                                | Name  | Position |
|                                | BLGU Upper Labay  | 10/09/2020                     |  |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                | Mabuhay Water and Sanitation Association (MAWASA)/ Brgy Mabuhay | 11/09/2020                     |   |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                |   |                                |   |          |
|                                | BLGU Conel  | 11/09/2020                     |   |          |
|                                | BLGU Batomelong   | 11/09/2020                     |   |          |
|                                |   |                                |   |          |
|                                | Bizcayda Waterworks Sanitation Association (BIWASA)             | 11/09/2020                     |   |          |
|                                |   |                                |   |          |

### Annex 3: Category / Type of Service and Sources of Water Supply

| Category of Service                  | Source of Water Supply                  |
|--------------------------------------|---|
| Safely Managed / Level 3             | Own use faucet community water service  |
| Basic / Level 2                      | Shared faucet community water system    |
|                                      | Own use tubed / piped deep well         |
| Limited / Level I (protected / safe) | Shared tubed / piped deep well          |
|                                      | Protected spring, water, stream, others |
| Unimproved                           | Shared tubed / piped shallow well       |
|                                      | Dug well                                |
|                                      | Peddler                                 |
|                                      | Others                                  |
| Surface water                        | Unprotected spring, water and stream    |
|                                      | Lake, river, rain, others               |

#### Annex 4: Access to Water Services According to Category; Province of Palawan According to City / Municipality

| No.                    | Area (City / Municipality) | 2019 Population  | Number of People by Category of Water Services |                |                |                |               | Proportion of People by Category of Water Services |              |              |              |               |
|------------------------|----------------------------|------------------|--|----------------|----------------|----------------|---------------|--|--------------|--------------|--------------|---------------|
|                        |                            |                  | Safely Managed                                 | Basic          | Limited        | Unimproved     | Surface Water | Safely Managed                                     | Basic        | Limited      | Unimproved   | Surface Water |
| 1                      | Aborlan                    | 38,214           | 11,274   | 11,846         | 10,182         | 4,386          | 525           | 29.5%  | 31.0%        | 26.6%        | 11.5%        | 1.4%          |
| 2                      | Agutaya                    | 13,184           | 476  | 1,840          | 2,187          | 8,681          | 0             | 3.6%   | 14.0%        | 16.6%        | 65.8%        | 0.0%          |
| 3                      | Araceli                    | 16,220           | 881  | 1,605          | 128            | 13,167         | 438           | 5.4%   | 9.9%         | 0.8%         | 81.2%        | 2.7%          |
| 4                      | Balabac                    | 45,434           | 436  | 1,205          | 12,083         | 29,321         | 2,389         | 1.0%   | 2.7%         | 26.6%        | 64.5%        | 5.3%          |
| 5                      | Bataraza                   | 88,565           | 17,695   | 31,495         | 18,183         | 16,725         | 4,467         | 20.0%  | 35.6%        | 20.5%        | 18.9%        | 5.0%          |
| 6                      | Brooke's Point             | 72,008           | 9,703  | 22,541         | 31,057         | 3,458          | 5,249         | 13.5%  | 31.3%        | 43.1%        | 4.8%         | 7.3%          |
| 7                      | Busuanga                   | 23,900           | 8,030  | 7,448          | 1,803          | 5,200          | 1,420         | 33.6%  | 31.2%        | 7.5%         | 21.8%        | 5.9%          |
| 8                      | Cagayancillo               | 6,271            | 5  | 0              | 58             | 916            | 5,291         | 0.1%   | 0.0%         | 0.9%         | 14.6%        | 84.4%         |
| 9                      | Coron                      | 58,785           | 19,624   | 13,925         | 7,731          | 15,467         | 2,037         | 33.4%  | 23.7%        | 13.2%        | 26.3%        | 3.5%          |
| 10                     | Cuyo                       | 23,603           | 458  | 3,589          | 227            | 19,297         | 32            | 1.9%   | 15.2%        | 1.0%         | 81.8%        | 0.1%          |
| 11                     | Dumaran                    | 26,104           | 2,093  | 6,310          | 1,532          | 16,061         | 108           | 8.0%   | 24.2%        | 5.9%         | 61.5%        | 0.4%          |
| 12                     | El Nido                    | 46,678           | 2,213  | 11,962         | 5,976          | 24,387         | 2,140         | 4.7%   | 25.6%        | 12.8%        | 52.2%        | 4.6%          |
| 13                     | Linapacan                  | 18,070           | 134  | 6,526          | 1,357          | 9,662          | 391           | 0.7%   | 36.1%        | 7.5%         | 53.5%        | 2.2%          |
| 14                     | Magsaysay                  | 12,572           | 428  | 828            | 92             | 11,210         | 14            | 3.4%   | 6.6%         | 0.7%         | 89.2%        | 0.1%          |
| 15                     | Narra                      | 78,322           | 12,395   | 31,862         | 25,276         | 8,169          | 620           | 15.8%  | 40.7%        | 32.3%        | 10.4%        | 0.8%          |
| 16                     | Quezon                     | 67,497           | 9,611  | 16,035         | 21,037         | 17,023         | 3,791         | 14.2%  | 23.8%        | 31.2%        | 25.2%        | 5.6%          |
| 17                     | Roxas                      | 71,276           | 17,711   | 16,603         | 10,448         | 24,405         | 2,109         | 24.8%  | 23.3%        | 14.7%        | 34.2%        | 3.0%          |
| 18                     | San Vicente                | 34,436           | 17,251   | 7,543          | 2,714          | 3,864          | 3,063         | 50.1%  | 21.9%        | 7.9%         | 11.2%        | 8.9%          |
| 19                     | Taytay                     | 82,327           | 14,489   | 23,744         | 9,030          | 33,585         | 1,480         | 17.6%  | 28.8%        | 11.0%        | 40.8%        | 1.8%          |
| 20                     | Kalayaan                   | 206              | 193  | 0              | 0              | 13             | 0             | 93.5%  | 0.0%         | 0.0%         | 6.5%         | 0.0%          |
| 21                     | Culion                     | 22,094           | 6,084  | 5,201          | 3,790          | 5,381          | 1,639         | 27.5%  | 23.5%        | 17.2%        | 24.4%        | 7.4%          |
| 22                     | Rizal                      | 56,599           | 1,827  | 9,443          | 21,460         | 15,158         | 8,711         | 3.2%   | 16.7%        | 37.9%        | 26.8%        | 15.4%         |
| 23                     | Sofronio Espanola          | 34,721           | 4,336  | 7,909          | 12,137         | 8,546          | 1,793         | 12.5%  | 22.8%        | 35.0%        | 24.6%        | 5.2%          |
| 24                     | Puerto Princesa City       | 289,242          | 188,929  | 53,530         | 27,611         | 16,217         | 2,955         | 65.3%  | 18.5%        | 9.5%         | 5.6%         | 1.0%          |
| <b>Total / Overall</b> |                            | <b>1,226,328</b> | <b>346,277</b>                                 | <b>292,991</b> | <b>226,098</b> | <b>310,300</b> | <b>50,662</b> | <b>28.3%</b>                                       | <b>23.9%</b> | <b>18.4%</b> | <b>25.3%</b> | <b>4.1%</b>   |

## Annex 5: Situation in the Delivery of Water Services; Province of Palawan According to City / Municipality

| City / Municipality  | WSP Providers                          | Factors / Constraints Affecting the Provision of Water Services  | Actions Being Undertaken   | Assistance Needed Way Forward  |
|----------------------|--|--|--|--|
| Puerto Princesa City | Puerto Princesa Water District (PPCWD) | PPCWD is experiencing low discharge capacity of its pumping stations. Out of 50 wells, only 36 are now being utilized by the WD. Moreover, the WD Filtration Plant in Campo Uno Bgy. Irawan that has a discharge capacity of 5 MLD is now short of its designed supply rate. | PPCWD has its ongoing project inside the BuCor compound in Bgy. Iwahig. The P770M Montible-Lapu Lapu Full Treatment Plant Project started last July 2019 and will be completed in July 2021. This project will provide the WD with additional 30 MLD to its water supply. Moreover, WD has another ongoing project in Campo Uno, Bgy. Irawan, that will upgrade the present yield of their Filtration Plant from 5 MLD to 18 MLD. It has a project cost of P29.9M and started last March 2019 with project completion on March 2021. | Assistance in providing additional source to the WD or help in designing to upgrade or augment the ongoing filtration projects of WD when it is completed. The Campo Uno Filtration Plant from 18 MLD to 30 MLD and Montible-Lapu Lapu Filtration Plant from 30 MLD to 50 MLD for their future supply requirement. |
|                      | Unserved barangays of PPCWD            | Several barangays do not yet have water system due to lack of water source development, and relative inaccessibility in the area. Hence, the WD has not yet served 19 of the 66 barangays of the City. Most of these barangays are seeking technical and                     | The City LGU of Puerto Princesa had an agreement with PPCWD that all barangays should be served by the WD. LGU offered a budgetary counterpart or a grant to the WD amounting to P2.00M in each barangay that will be given Level 3 WSS. However, the P2.00M   | Assistance in updating the proposed WSS project in each of the 19 unserved barangays of WD.  |

| <b>City / Municipality</b>  | <b>WSP Providers</b>           | <b>Factors / Constraints Affecting the Provision of Water Services</b>   | <b>Actions Being Undertaken</b>   | <b>Assistance Needed Way Forward</b>   |
|-----------------------------|--------------------------------|--|---|--|
|                             |                                | financial assistance from the LGU of Puerto Princesa City.   | grant offered was later turned into Loan to WD.<br><br>Currently, the Water District had a project study or Program of Work (POW) in all 19 remaining barangays and only waiting for the schedule of implementation.  |  |
|                             |                                | PPCWD reported that they have problems in some of their 19 unserved barangays due to unavailability of water source in the area. | PPCWD is conducting series of water resources investigation to come up with the best possible water source in these barangays.  | Provide assistance in source development in problematic areas that have unavailable water source.  |
|                             |                                |  |   |  |
| <b>Dumaran Municipality</b> | Dumaran Waterworks Unit (DWWU) | Insufficient water supply during dry months due to low discharge of current pumping station.                                     | The municipality of Dumaran has an ongoing P50.00M Water Supply Project that was funded through a loan in Municipal Development fund Office (MDFO). The Municipality had a joint agreement with the Provincial Government of Palawan (PGP) dated May 6, 2020. PGP provided technical assistance and conducted the study for the project that later on will operate the WSS of Dumaran. It covers six (6) barangays, namely: | Provide assistance to follow up their uncompleted P50.00M Water Supply Project and assist in updating the component of the project for each of the five uncompleted barangays. |

| City / Municipality | WSP Providers | Factors / Constraints Affecting the Provision of Water Services   | Actions Being Undertaken   | Assistance Needed Way Forward   |
|---------------------|---------------|---|--|---|
|                     |               |   | Bgy. Bohol, Poblacion, San Juan, Santo Tomas, Calasag, and Culasian. Out of the six barangays, only Bgy. Culasian is now completed and being operated by PGP.  |   |
|                     |               |   | Salintubig Projects are subject for implementation. Dumaran has two Salintubig Projects that are still not implemented, namely: Barangay Danleg Expansion of Water Supply System Project Level 3 amounting to P4.905M, and the Barangay Capayas Expansion of Water Supply System amounting to P6.50M. The Bgy. Danleg WSS project was already awarded to the contractor and with Notice to Proceed (NTP). The Bgy. Capayas WSS project experienced two failed biddings and are now subject for negotiated bidding. | Provide assistance to follow up for the implementation of their Salintubig Projects and if possible suggest amendments on Project "Item Description". |
|                     |               | Barangay Poblacion (Dumaran) has limited water supply due to limited water storage capacity of 32 cubic meters. | Poblacion Barangay of Dumaran is using three deep wells as its water source that were constructed from their previous Salintubig Project in 2015. Pumping Station 1 and 3 with both installed 2hp are  | Suggest that concessionaires should install individual water meter to account for their water use even if they are currently using water for free.    |



| City / Municipality        | WSP Providers  | Factors / Constraints Affecting the Provision of Water Services   | Actions Being Undertaken   | Assistance Needed Way Forward   |
|----------------------------|--|---|--|---|
|                            |  |   | being used to supply the 138 active service connections of DWWU for only one hour daily. Moreover, Pumping Station 2 with installed 5hp is being served as the source of water for the LGU of Dumarán. |   |
|                            |  |   |  |   |
| <b>TAYTAY MUNICIPALITY</b> | Taytay Water District (TWD)                            | TWD has a very limited source of water supply with a total of only about 6.67lps. This capacity is not enough to supply 800 connections.  | TWD had implemented a series of source development projects but experienced unproductive wells and had an issue in land ownership on their spring development.   | Conduct spring exploration and Geo-Resistivity Survey to determine the possible source development through spring or wells. |
|                            | Taytay Palawan Water System Management Office (TPWSMO) | TPWSMO has an approved Salintubig Project in 2018 that was not implemented.<br><br>The amount to be awarded is supposed to be P15M for the 3 barangays, or P5M for each of the 3 barangays. However, the DILG released the entire amount of P15M to only 1 barangay. The released amount was returned by the LGU to DILG. | They have another Salintubig Project again for 2020 but according to the utility manager they are in the process of revising the “Item Description” of the said Salintubig Project.                    | Request the utility manager to allow SW to assist them in the updating or revision of the 2020 Salintubig Project.          |

| City / Municipality | WSP Providers                        | Factors / Constraints Affecting the Provision of Water Services   | Actions Being Undertaken  | Assistance Needed Way Forward             |
|---------------------|--------------------------------------|---|---|---|
|                     | Unserved barangays by TWD and TPWSMO | <p>Lack of prioritization on water supply system projects in unserved barangay communities.</p> <p>Lack of required documents and late application are some of the challenges on the processing and approval of water supply system projects.</p> | <p>Early preparation and compilation of required documents. MPDO is assessing the barangays in processing of documents and helping in coordination with DENR and other agencies for approval.</p> | <p>Financing water system development</p> |
|                     |                                      | <p>Some of the potential water sources (e.g., small springs) are not accessible because these are located in private property.</p>  | <p>MPDO assisting the barangay in the preparation of necessary documents such as proof of ownership, right-of-way.</p>  |   |

## Annex 6: Access to Water Services according to Category; Province of Negros Occidental per City / Municipality

| No. | Area (City / Municipality) | 2019 Population  | Number of People by Category of Water Services |                |                  |                |                | Proportion of People by Category of Water Services |              |              |              |               |
|-----|----------------------------|------------------|--|----------------|------------------|----------------|----------------|--|--------------|--------------|--------------|---------------|
|     |                            |                  | Safely Managed                                 | Basic          | Limited          | Unimproved     | Surface Water  | Safely Managed                                     | Basic        | Limited      | Unimproved   | Surface Water |
| 1   | Bago City                  | 179,757          | 38,891   | 33,028         | 81,273           | 22,804         | 3,762          | 21.6%  | 18.4%        | 45.2%        | 12.7%        | 2.1%          |
| 2   | Binalbagan                 | 69,893           | 21,229   | 10,999         | 16,417           | 17,061         | 4,187          | 30.4%  | 15.7%        | 23.5%        | 24.4%        | 6.0%          |
| 3   | Cadiz City                 | 158,318          | 39,370   | 27,870         | 52,246           | 35,707         | 3,126          | 24.9%  | 17.6%        | 33.0%        | 22.6%        | 2.0%          |
| 4   | Calatrava                  | 82,304           | 12,508   | 24,368         | 24,895           | 16,170         | 4,363          | 15.2%  | 29.6%        | 30.2%        | 19.6%        | 5.3%          |
| 5   | Candoni                    | 22,296           | 741  | 6,924          | 4,826            | 8,627          | 1,177          | 3.3%   | 31.1%        | 21.6%        | 38.7%        | 5.3%          |
| 6   | Cauayan                    | 106,118          | 4,615  | 21,671         | 47,651           | 27,576         | 4,605          | 4.3%   | 20.4%        | 44.9%        | 26.0%        | 4.3%          |
| 7   | Enrique B. Magalona        | 65,382           | 7,018  | 8,222          | 43,811           | 5,569          | 762            | 10.7%  | 12.6%        | 67.0%        | 8.5%         | 1.2%          |
| 8   | Escalante City             | 98,521           | 16,756   | 22,646         | 15,324           | 42,657         | 1,139          | 17.0%  | 23.0%        | 15.6%        | 43.3%        | 1.2%          |
| 9   | Himamaylan City            | 112,334          | 28,949   | 30,187         | 24,499           | 24,040         | 4,659          | 25.8%  | 26.9%        | 21.8%        | 21.4%        | 4.1%          |
| 10  | Hinigaran                  | 88,675           | 12,463   | 11,959         | 24,353           | 39,806         | 95             | 14.1%  | 13.5%        | 27.5%        | 44.9%        | 0.1%          |
| 11  | Hinobaan                   | 58,538           | 887  | 10,598         | 34,732           | 9,347          | 2,974          | 1.5%   | 18.1%        | 59.3%        | 16.0%        | 5.1%          |
| 12  | Ilog                       | 60,692           | 2,982  | 12,165         | 14,674           | 29,826         | 1,045          | 4.9%   | 20.0%        | 24.2%        | 49.1%        | 1.7%          |
| 13  | Isabela                    | 66,314           | 2,547  | 14,617         | 36,014           | 11,354         | 1,783          | 3.8%   | 22.0%        | 54.3%        | 17.1%        | 2.7%          |
| 14  | Kabankalan City            | 191,679          | 26,369   | 33,732         | 73,235           | 49,669         | 8,674          | 13.8%  | 17.6%        | 38.2%        | 25.9%        | 4.5%          |
| 15  | La Carlota City            | 66,807           | 38,845   | 8,885          | 13,840           | 2,699          | 2,539          | 58.1%  | 13.3%        | 20.7%        | 4.0%         | 3.8%          |
| 16  | La Castellana              | 79,723           | 14,848   | 14,469         | 34,024           | 6,301          | 10,081         | 18.6%  | 18.1%        | 42.7%        | 7.9%         | 12.6%         |
| 17  | Manapla                    | 56,341           | 8,293  | 6,249          | 34,449           | 7,264          | 86             | 14.7%  | 11.1%        | 61.1%        | 12.9%        | 0.2%          |
| 18  | Moises Padilla             | 43,391           | 7,079  | 13,066         | 10,063           | 7,465          | 5,719          | 16.3%  | 30.1%        | 23.2%        | 17.2%        | 13.2%         |
| 19  | Murcia                     | 88,395           | 22,756   | 12,173         | 37,101           | 12,474         | 3,891          | 25.7%  | 13.8%        | 42.0%        | 14.1%        | 4.4%          |
| 20  | Pontevedra                 | 54,837           | 5,830  | 11,896         | 28,215           | 8,073          | 822            | 10.6%  | 21.7%        | 51.5%        | 14.7%        | 1.5%          |
| 21  | Pulupandan                 | 28,261           | 8,453  | 4,176          | 7,136            | 8,488          | 9              | 29.9%  | 14.8%        | 25.2%        | 30.0%        | 0.0%          |
| 22  | Sagay City                 | 151,008          | 58,630   | 22,483         | 21,866           | 42,365         | 5,664          | 38.8%  | 14.9%        | 14.5%        | 28.1%        | 3.8%          |
| 23  | San Carlos City            | 136,626          | 41,659   | 24,772         | 30,082           | 21,863         | 18,249         | 30.5%  | 18.1%        | 22.0%        | 16.0%        | 13.4%         |
| 24  | San Enrique                | 24,416           | 8,216  | 4,881          | 10,436           | 878            | 4              | 33.6%  | 20.0%        | 42.7%        | 3.6%         | 0.0%          |
| 25  | Silay City                 | 132,607          | 27,201   | 18,728         | 58,176           | 23,848         | 4,653          | 20.5%  | 14.1%        | 43.9%        | 18.0%        | 3.5%          |
| 26  | Sipalay City               | 72,374           | 3,061  | 13,641         | 29,609           | 23,913         | 2,151          | 4.2%   | 18.8%        | 40.9%        | 33.0%        | 3.0%          |
| 27  | Talisay City               | 109,429          | 28,135   | 16,291         | 45,136           | 18,498         | 1,369          | 25.7%  | 14.9%        | 41.2%        | 16.9%        | 1.3%          |
| 28  | Taboso                     | 42,496           | 3,715  | 14,587         | 15,254           | 8,059          | 881            | 8.7%   | 34.3%        | 35.9%        | 19.0%        | 2.1%          |
| 29  | Valladolid                 | 39,373           | 7,625  | 7,634          | 17,886           | 6,229          | 0              | 19.4%  | 19.4%        | 45.4%        | 15.8%        | 0.0%          |
| 30  | Victorias City             | 89,661           | 35,633   | 12,530         | 32,777           | 7,496          | 1,224          | 39.7%  | 14.0%        | 36.6%        | 8.4%         | 1.4%          |
| 31  | Salvador Benedicto         | 28,525           | 1,867  | 11,403         | 5,889            | 4,741          | 4,624          | 6.5%   | 40.0%        | 20.6%        | 16.6%        | 16.2%         |
| 32  | Bacolod City               | 603,765          | 250,167  | 122,431        | 95,587           | 134,556        | 1,024          | 41.4%  | 20.3%        | 15.8%        | 22.3%        | 0.2%          |
|     | <b>Total / Overall</b>     | <b>3,208,856</b> | <b>787,336</b>                                 | <b>609,280</b> | <b>1,021,474</b> | <b>685,424</b> | <b>105,342</b> | <b>24.6%</b>                                       | <b>19.0%</b> | <b>31.8%</b> | <b>21.4%</b> | <b>3.3%</b>   |

## Annex 7: Situation in Delivery of Water Services; Province of Negros Occidental per City / Municipality

| City / Municipality | Water Service Providers (WSPs)      | Factors / Constraints for Not Covering the Entire Population in the Provision of Water Services   | Actions Being Undertaken (by LGU / WSP)   | Assistance Needed Way Forward   |
|---------------------|-------------------------------------|---|---|---|
| Bacolod City        | BACIWA                              | BACIWA lacks the financial resources to develop new water sources, improve its existing system and expand its service area.   | BACIWA has entered into a Public-Private Partnership (PPP) agreement with Primewater through a Joint Venture (JV) arrangement for private sector financing. | SW may assist BACIWA or the regulatory unit in the preparation of the manual and / or may provide capacity development on contract management.  |
| Bago City           | BACIWAD / LGU-run utilities / RWSAs | <ul style="list-style-type: none"> <li>The unserved households are far from the existing service area of BACIWAD. BACIWAD will incur huge capital expenses to expand its existing system and to construct new and separate/ independent systems to serve all the barangays of the city including the areas wherein the households are scattered.</li> <li>The other WSPs like the LGU-run utilities and the RWSAs also do not have the funds to expand their respective service areas.</li> </ul> | BACIWAD has received an unsolicited proposal for PPP from Primewater, a private water investment company. Evaluation of the proposal is on-going.           | <ul style="list-style-type: none"> <li>Assist BACIWAD or the regulatory unit in preparing the contract management manual or provide capacity development on contract management.</li> <li>Assist other WSPs in project preparation, project implementation, and in assessing and accessing available</li> </ul> |

| City / Municipality    | Water Service Providers (WSPs) | Factors / Constraints for Not Covering the Entire Population in the Provision of Water Services   | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed Way Forward  |
|------------------------|--------------------------------|---|--|--|
|                        |                                |   |  | <p>and appropriate financing sources.</p> <ul style="list-style-type: none"> <li>• Provide trainings / workshops in ring-fencing and business planning to city-run utilities.</li> </ul>   |
| Don Salvador Benedicto | LGU-run / RWSAs                | <ul style="list-style-type: none"> <li>• Governance of LGU-run utilities is perceived to be weak as evidenced by poor collection efficiency and unclear management model.</li> <li>• Water supply development specifically Level III and Level II infrastructure are prohibited inside protected areas as prescribed by existing laws.</li> </ul> | WSPs will continue to educate the residents on the importance of paying the tariff which will cover their OPEX and will generate funds to defray the CAPEX needs such as service area expansion.         | <ul style="list-style-type: none"> <li>• Assist WSPs in project preparation, project implementation, and in assessing and accessing available and appropriate financing sources.</li> <li>• Provide trainings / workshops in ring-fencing and business planning to municipal-run utilities.</li> </ul> |
| Isabela                | LGU-run                        | The waterworks unit which is attached to the Mayor's Office is serving 9 out of the 30 barangays. The LGU would require a big amount of capital investment from external sources including loans to serve the remaining 21 unserved barangays.  | <ul style="list-style-type: none"> <li>• The waterworks unit will implement a project that would cost Php 11M and that would increase access to water in 2 barangays. The source of fund will</li> </ul> | <ul style="list-style-type: none"> <li>• Assist in the implementation of the SALINTUBIG project.</li> <li>• Assist in the review / updating of the existing master plan</li> </ul>   |

| City / Municipality | Water Service Providers (WSPs)                  | Factors / Constraints for Not Covering the Entire Population in the Provision of Water Services   | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed Way Forward   |
|---------------------|---|---|--|---|
|                     |   |   | <p>come from the SALINTUBIG program of DILG under GAA 2018 thru a grant.</p> <ul style="list-style-type: none"> <li>SW has shortlisted the LGU for the pilot implementation of the Central Management System (CMS).</li> </ul> | <ul style="list-style-type: none"> <li>Provide trainings / workshops on ring-fencing and business planning.</li> </ul>  |
| Murcia              | Murcia WD (MWD)                                 | <ul style="list-style-type: none"> <li>MWD is serving only the populated areas in the served barangays. MWD has no funds to reach the remote and dispersed households inside its service area.</li> <li>There are people in some of the unserved barangays would not accept MWD as their water service provider instead of the existing BWSAs which are operating Level I systems.</li> </ul> | MWD is continuously implementing its development plan to meet their annual projected market growth.  | <ul style="list-style-type: none"> <li>Provide trainings / workshops on financial stress test, business planning, and the use of IWA Water Balance for the assessment of NRW and its components.</li> </ul> |
| San Carlos City     | LGU-run (San Carlos City Waterworks Department) | The San Carlos City Waterworks Department is prioritizing the populated areas in providing its services due to limited funds.   | The San Carlos City Waterworks Department is implementing a service area expansion project. It is currently securing a   | Provide trainings / workshops on business planning.   |

| City / Municipality | Water Service Providers (WSPs) | Factors / Constraints for Not Covering the Entire Population in the Provision of Water Services  | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed Way Forward                                      |
|---------------------|--------------------------------|--|--|--|
|                     |                                |  | water permit for the new source. It has plans to upgrade Level II systems that were turned over by BWSAs to Level III.                 |  |
| Silay City          | SICIWA                         | <ul style="list-style-type: none"> <li>• SICIWA is serving only the crowded areas in the served barangays. Extending the existing distribution system to reach the remote and scattered unserved households will not be economically viable considering its impact on the existing tariff. Another reason for not expanding its service area is the Right-of-Way (ROW) issues.</li> <li>• The remaining unserved barangays are upland barangays wherein most households are not clustered and constructing separate systems would not be financially and economically viable.</li> </ul> | SICIWA is implementing its existing business plan which included the CAPEX plan that would meet the annual service connection targets. | Provide trainings / workshops on business planning.                |
| Talisay City        | TWD                            | <ul style="list-style-type: none"> <li>• The service coverage of TWD on the served barangays is not</li> </ul>   | TWD is implementing its existing business plan which included the  | Provide trainings and workshops like the pandemic financial stress |

| City / Municipality | Water Service Providers (WSPs) | Factors / Constraints for Not Covering the Entire Population in the Provision of Water Services   | Actions Being Undertaken (by LGU / WSP)                                  | Assistance Needed Way Forward          |
|---------------------|--------------------------------|---|--|--|
|                     |                                | <p>100% because the households that are not connected get their water from their own well sources.</p> <ul style="list-style-type: none"> <li>The remaining 7 unserved barangays are very remote and no longer viable to be included in the service area. Residents in these barangays get water either from their own sources or provided by the BWSAs.</li> </ul> | <p>CAPEX plan that would meet the annual service connection targets.</p> | <p>test and the business planning.</p> |



## Annex 8: Access to Water Services According to Category; General Santos City and Province of Sarangani per City / Municipality

| No.                    | Area (City / Municipality) | 2019 Population  | Number of People by Category of Water Services |                |                |                |               | Proportion of People by Category of Water Services |              |              |             |               |
|------------------------|----------------------------|------------------|--|----------------|----------------|----------------|---------------|--|--------------|--------------|-------------|---------------|
|                        |                            |                  | Safely Managed                                 | Basic          | Limited        | Unimproved     | Surface Water | Safely Managed                                     | Basic        | Limited      | Unimproved  | Surface Water |
| 1                      | Alabel                     | 86,810           | 23,550   | 25,845         | 25,930         | 9,310          | 2,175         | 24.4%  | 33.0%        | 29.9%        | 8.5%        | 4.3%          |
| 2                      | Glan                       | 116,820          | 5,870  | 20,055         | 46,900         | 33,700         | 10,295        | 11.0%  | 28.2%        | 34.9%        | 15.5%       | 10.4%         |
| 3                      | Kiamba                     | 67,895           | 2,065  | 23,395         | 33,700         | 5,885          | 2,850         | 3.9%   | 40.1%        | 41.5%        | 8.0%        | 6.5%          |
| 4                      | Maasim                     | 65,000           | 6,350  | 15,650         | 17,430         | 21,485         | 4,085         | 13.6%  | 39.1%        | 34.8%        | 10.8%       | 1.7%          |
| 5                      | Maitum                     | 44,820           | 2,330  | 10,855         | 22,810         | 6,350          | 2,475         | 7.7%   | 38.2%        | 37.5%        | 9.8%        | 6.8%          |
| 6                      | Malapatan                  | 84,335           | 8,800  | 26,485         | 26,260         | 7,175          | 15,615        | 10.5%  | 33.0%        | 38.6%        | 4.9%        | 13.0%         |
| 7                      | Malungon                   | 112,980          | 27,972   | 42,760         | 16,164         | 13,672         | 12,412        | 17.4%  | 32.6%        | 22.6%        | 19.1%       | 8.3%          |
| 8                      | General Santos City        | 655,571          | 328,762  | 193,444        | 95,293         | 33,039         | 5,033         | 50.1%  | 29.5%        | 14.5%        | 5.0%        | 0.8%          |
| <b>Total / Overall</b> |                            | <b>1,234,231</b> | <b>405,699</b>                                 | <b>358,489</b> | <b>284,487</b> | <b>130,616</b> | <b>54,940</b> | <b>32.8%</b>                                       | <b>31.5%</b> | <b>23.4%</b> | <b>8.2%</b> | <b>4.1%</b>   |

## Annex 9: Situation in the Delivery of Water Services; General Santos City and Province of Sarangani per City / Municipality

| City / Municipality | WSP Providers (List)                                     | Barangay / Sitio Covered  | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision  | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed   |
|---------------------|--|---|--|--|---|
| General Santos City | Gen Santos City WD                                       | <ol style="list-style-type: none"> <li>1. Apopong</li> <li>2. Bula</li> <li>3. Calumpang</li> <li>4. City Heights</li> <li>5. East</li> <li>6. Fatima</li> <li>7. Katangawan</li> <li>8. Labangal</li> <li>9. Lagao</li> <li>10. Ligaya</li> <li>11. Mabuhay</li> <li>12. North</li> <li>13. San Isidro</li> <li>14. San Jose</li> <li>15. Sinawal</li> <li>16. South</li> <li>17. Tambler</li> <li>18. West</li> </ol> | <ol style="list-style-type: none"> <li>1. Proliferation of RWSAs</li> <li>2. No budget for full blown on water source development</li> <li>3. City government not keen on developing new groundwater source</li> </ol>                           | <ol style="list-style-type: none"> <li>1. On-going geo - resistivity studies by SURGE on selected areas of Gen San</li> <li>2. On-going source identification for future development</li> <li>3. ongoing development of a comprehensive expansion Plan</li> <li>4. On-going business plan formulation</li> </ol> | <ol style="list-style-type: none"> <li>1. Conduct of Technical Trainings /Skills upgrading and enhancement</li> <li>2. Hydrologic study of Buayan-Malungon River Basin</li> <li>3. Feasibility study on new sources development</li> <li>4. Assessment of General Santos City groundwater source</li> <li>5. Surface bulk water source development</li> </ol> |
|                     | Rural Water-works and Sanitation Association, Inc (RWSA) | 26 Barangays of General Santos City   | <ol style="list-style-type: none"> <li>1. Issues on fund management</li> <li>2. Lack of technical capability particularly on water system design</li> <li>3. No capacity to check systems losses</li> <li>4. No regular Water Quality</li> </ol> | <ol style="list-style-type: none"> <li>1. City ordinance on RWSA</li> <li>2. Training on water safety planning(c/o SURGE)</li> </ol>   | <ol style="list-style-type: none"> <li>1. Amend city ordinance on RWSAs</li> <li>2. Development of RWSA's manual of operation/IRR</li> <li>3. Reconstitution of the created TWG</li> <li>4. Conduct of Sectoral Planning</li> </ol>   |

| City / Municipality | WSP Providers (List)  | Barangay / Sitio Covered   | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision  | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed   |
|---------------------|---|--|--|--|---|
|                     |   |  | <p>Monitoring(WQM)/ lack of technical knowledge on WQM</p> <p>5.Limited financial capacity to maintain existing water system and expand area coverage</p> <p>6.Limited organizational capacity on water system operation and management</p> <p>7. Uncoordinated water system development</p> |  | <p>5. Strengthening of the Technical capability of IBA (the managing unit of RWSA)</p> <p>6.Continuing capability building training on WQM for RWAs</p> <p>7.Training on water system operation and maintenance</p>   |
| Alabel              | Alabel LGU run level 3 water system                                 | Barangays Poblacion and Spring, Sitio Pait of barangay Alegria, Puroks 3 and 4 of Barangay Domolok | <p>1. Lack of technical capability particularly on water system design</p> <p>2. No automated Billing and Collection System</p> <p>3. Limited funds/resources to cover the entire area</p> <p>4. Presence of other water supply system in the area</p>                                       | <p>1. On-going hydraulic modelling for service connection expansion</p> <p>2. On-going source identification for future development</p> <p>3. MLGU plans to expand service coverage and worked for possible turn-over of management/ operation of identified BLGU run water supply system to the MGLU run level III water system</p> | <p>1. Conduct of Technical Trainings /Skills upgrading and enhancement</p> <p>2. Development of Billing and collection System/ Mentoring and Coaching</p> <p>3. Creation of MEEDO</p> <p>4. Preparation of Technical Design for Weir Construction &amp; Spring source Development</p> |
|                     | Ladol Rural Water-works and Sanitation Association, Inc (LARWASAI ) | Ladol  | <p>1. Elevated tank damaged during last year's earthquake as such water connections are directly connected to the mainline</p> <p>2. Pipelines needs to be replaced and</p>  | <p>1. Monthly allocation for water system maintenance (pipelines)</p> <p>2. Maintenance works including repairs regularly done, including chlorination every 2 weeks and cleaning works done every week.</p>   | <p>Training on water safety planning</p> <p>Formulation of Business plan preparation</p> <p>Training on water system operation and maintenance</p>  |

| City / Municipality | WSP Providers (List)            | Barangay / Sitio Covered | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed  |
|---------------------|---------------------------------|--------------------------|---|--|--|
|                     |                                 |                          | <p>maintenance of pumps</p> <p>3. Lack of technical capability particularly on water system design</p> <p>4. No capacity to check systems losses</p> <p>5. No regular Water Quality Monitoring(WQM)/ lack of technical knowledge on WQM</p> <p>6. Non-covered HHs have own individual pitcher pumps as the barangay</p> <p>7. Management did not pushed thru with planned expansion of coverage with nearby barangay Kawas as the MLGU level III water system intends to cover said barangay.</p> |  |  |
|                     | BLGU run level III water system | Alegria, Maribulan       | <p>1.Limited financial capacity to maintain existing water system and expand area coverage</p> <p>2. Lack of technical capability on water system operation and maintenance</p> <p>3. No regular water quality monitoring / lack of technical knowledge</p>   | <p>1. Designation of Barangay Sanitary Inspectors</p> <p>2. Conducts of monthly inspections of Sanitary inspectors</p> | <p>1.Training on water system operation, financial system and maintenance</p> <p>2. Formulation of water safety and business plan</p> <p>3.Training in WQM</p> |

| City / Municipality | WSP Providers (List)              | Barangay / Sitio Covered   | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed  |
|---------------------|-----------------------------------|--|---|--|--|
|                     | BAWASA/H OA                       | Poblacion, Spring, Baluntay, Bacagay, Paraiso, Pag-Asa, Maribulan, Kawas, Datal Anggas | <ol style="list-style-type: none"> <li>1. Limited financial capacity to maintain existing water system and expand coverage</li> <li>2. Limited organizational capacity on water system operation and management</li> <li>4. Shortage in water supply and thus, conduct water rationing</li> <li>5. Lack of technical capability particularly on water system maintenance</li> <li>6. No regular Water Quality Monitoring/ lack of technical knowledge on WQM</li> <li>7. BAWASLA (Bagacay) encountered problem with private owner on their water source</li> <li>6. Water source is far from community (Datal Anggas)</li> <li>7. HOAs (Poblacion) water service is limited within their subdivision</li> </ol> | <ol style="list-style-type: none"> <li>1. Designation of Barangay Sanitary Inspectors</li> <li>2. Referred to LGU for assistance on maintenance</li> <li>3. Barangay Kawas BAWASA received trainings from DAR and other funders provided 15 tap stands.</li> <li>3. BLGU Bagacay provided PhP 49,000 to BAWASLA as support to the construction of new water source. Old source is located at private owned lot.</li> <li>4. Residents-users of water system in barangay Paraiso contributes for its repair and maintenance.</li> <li>5. LGU fund sourcing for water supply projects with DILG, PAMANA, DSWD Kalahi etc.</li> </ol> | <ol style="list-style-type: none"> <li>1. Training on water system operation and maintenance</li> <li>2. Technical Trainings / Skills upgrading and enhancement (plumbing etc)</li> <li>3. Training on Water Safety Plan preparation</li> <li>4. Training on water quality monitoring</li> <li>5. Training on financial management</li> <li>6. Additional water source identification and development</li> </ol> |
| Alabel              | Cooperative -managed water system | Purok 12, Domolok Bacagay  | <ol style="list-style-type: none"> <li>1. For Domolok, water system is limited to the housing area.</li> </ol>  | <ol style="list-style-type: none"> <li>1. BLGU Bacagay entered into a Bulk-water agreement with San Miguel MPC for the operation and</li> </ol>  | <ol style="list-style-type: none"> <li>1. Training on Business Plan and Water Safety Plan preparation</li> </ol>   |

| City / Municipality | WSP Providers (List)    | Barangay / Sitio Covered    | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP) | Assistance Needed   |
|---------------------|-------------------------|-----------------------------|---|---|---|
|                     |                         |                             | <p>2. Water supply is being rationed and thus, cannot expand area of coverage</p> <p>3. Lack of technical capability particularly on water system maintenance</p> <p>3. No regular water quality monitoring/ lack of technical knowledge on WQM</p>   | management of Level III water system    | 2. Training on water system operation and maintenance         |
| Alabel              | BLGU run water system   | Alegria, Tokawal,           | <p>1.Limited financial resources to maintain existing water system and expand area coverage</p> <p>2.Lack of technical knowledge on water supply maintenance</p> <p>3. No regular WQM/ lack of technical knowledge on WQM</p> <p>4. Tokawal's water system is no longer operational as the submersible pump was damaged. Elevated water tank provided by DILG was not used. Submersible pump is not included in the assistance.</p> |   | 1.Training on operation and maintenance                       |
| Malungon            | Malungon Water District | Serves only 3 barangays out | 1.Limited financial capacity. Need financing support  | 1. Well exploration conducted by LWUA   | 1. Consolidation of BAWASA as part of Malungon water district |

| City / Municipality | WSP Providers (List)  | Barangay / Sitio Covered   | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed   |
|---------------------|-----------------------|--|---|--|---|
|                     |                       | of 31 total barangays  | <p>for WD's infrastructure needs</p> <ol style="list-style-type: none"> <li>Limited water supply. Production meter not operational as water supply is not enough to make it work.</li> <li>Poor quality of water</li> <li>Fragmented and individualized. Malungon has more or less 3 BAWASAs per barangay</li> <li>No water audit conducted</li> <li>Subscribers are majority residential.</li> </ol>                                 | <p>accredited service provider</p> <ol style="list-style-type: none"> <li>WD does chlorination daily and bacteriology monitoring monthly</li> <li>Plan for expansion is based on demand.</li> <li>Sought loan from LWUA in the amount of PhP 105M for water supply expansion project</li> </ol>  |   |
|                     | BLGU run water system | Talus, Malalag Cogon, Datal Batong, Upper Mainit, San Miguel, JP Laurel, Lutay | <ol style="list-style-type: none"> <li>Limited financial capacity to maintain existing water system and expand coverage</li> <li>Remote location of water source to community</li> <li>Experience shortage of water supply and low water pressure</li> <li>Lack of technical knowledge in water supply design</li> <li>No water association to take over the management and operation of BLGU Talus level III water system</li> </ol> | <ol style="list-style-type: none"> <li>Funds sourcing for water supply projects and expansion done by BLGU, MLGU and PLGU with possible funders like DILG, DSWD Kalahi, PAMANA, BUB, etc. Talus and Banate are recipient of PAMANA water supply project.</li> <li>BLGU Committee on Health and Infrastructure Provides oversight on the management of water system</li> <li>BLGU Datal Batong installed a polyethylene barrel as temporary intake box and repaired pipelines thru <i>bayanihan</i></li> <li>Sought assistance from MGLU and SOCOTECO electric cooperative for</li> </ol> | <ol style="list-style-type: none"> <li>Upgrading of submersible pump (Talus)</li> <li>Installation of solar-powered pumping stations (Talus)</li> <li>Turn-over of water system management from BLGU Talus to a people organization</li> <li>Rehabilitation of pipelines</li> <li>Training on water safety plan and business plan preparation</li> <li>Training on water system operation, management and maintenance.</li> <li>Rehabilitation of earthquake damaged pipelines and reservoir</li> </ol> |

| City / Municipality | WSP Providers (List)                       | Barangay / Sitio Covered | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP)   | Assistance Needed   |
|---------------------|--|--------------------------|---|---|---|
|                     |  |                          | <p>5. Lack of technical knowledge on WQM</p> <p>6. BLGU run water system in Datal Batong is not fully operational. Design failure of intake box.</p> <p>7. Earthquake damaged water pipes in JP laurel</p> <p>8. Full capacity of BLGU run water system in Upper Mainit due to power fluctuations</p> <p>9. In barangay Lutay, water source proximate to the community is insufficient</p> <p>10. Insufficient water source in barangay Upper Lumabat</p> | <p>the installation of transformer</p> <p>5. BLGU Lutay has installed rainwater catchment and sought assistance from LGU and NGA for possible sources</p>   | <p>8. Additional water source identification and assessment (Lutay and Upper Lumabat)</p> <p>9. Technical design for additional water reservoir (Lutay and Upper Lumabat)</p>             |
|                     | Cooperative managed level III water system | Malandag                 | <p>1. Minimal infrastructure support system (additional reservoir)</p> <p>2. Cooperative management hesitant to expand their water services or provide more funds to improve the existing water system with the possibility of water subscribers to transfer to Malungon WD's</p>   | <p>1. BLGU Malandag entered into a bulk water agreement with SAVESEGROW MPC for the operation and management of level III water system.</p> <p>2. Income generated out of the agreement by BLGU Malandag allocated to repair of water system pipelines</p> <p>3. Ongoing source identification and assessment for development</p> | <p>1. Additional water source identification</p> <p>2. Technical design for the construction of water reservoir</p> <p>3. Training on water safety plan and business plan preparation</p> |



| City / Municipality | WSP Providers (List)  | Barangay / Sitio Covered   | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision  | Actions Being Undertaken (by LGU / WSP)  | Assistance Needed   |
|---------------------|-----------------------|--|--|--|---|
|                     |                       |  | <p>water service. The latter has ongoing water lines installation in Malandag.</p> <p>3. Lack of technical knowledge on water supply system designing</p> <p>4. lack of technical knowledge on WQM</p>   |  |   |
| Malungon            | BAWASA                |  | <p>1. Limited financial capacity to maintain existing water system and expand service area</p> <p>2. Problem in the design of water system pipelines</p> <p>3. Remote location of water source to community</p> <p>4. Experience shortage of water supply and low water pressure</p> | 1. Referred to BLGU for possible assistance  | <p>1. Installation of new piping system following standards and appropriate for water pressure</p> <p>2. Training on operation and maintenance.</p>   |
| Maasim              | Maasim Water District | Poblacion, Bales, Colon, Kabatiol, Malbang, Kamanga and Kablacan | <p>1. Smallest water district</p> <p>2. Limited financial capacity to expand water service coverage</p> <p>3. Existing water lines damaged by road widening project</p> <p>4. Board of Directors are all new and not familiar</p>  | <p>1. Sought assistance from MLGU for the repair of the affected /damaged water pipes</p> <p>2. Previously submitted request to LWUA for the increase in tariff but no action yet taken by LWUA</p> <p>3. Sought for MLGU assistance for new water sources. Salintubig funded water supply in Kablacan thru MLGU</p> | <p>1. Additional deepwells in Kablacan, Colon and Kamanga.</p> <p>2. Pipelines (8 inches in diameter) from Kablacan to Tinoto</p> <p>3. Reservoir per project</p> <p>4. Solar power to reduce electricity consumption</p> <p>5. Training on proper management of deep wells/ pump to easily</p> |

| City / Municipality | WSP Providers (List)          | Barangay / Sitio Covered | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision  | Actions Being Undertaken (by LGU / WSP)   | Assistance Needed   |
|---------------------|-------------------------------|--------------------------|--|---|---|
|                     |                               |                          | with laws governing water districts  | <p>4. PLGU provides funding assistance to Maasim WD for service expansion.</p> <p>5. Sought financial assistance from LWUA (loan) amounting to PhP15.7M for rehabilitation</p>  | <p>detect damages on water systems</p> <p>6.Capacity building for BOD to enhance knowledge and skills on laws governing WD operations and management, laws related to water supply</p> <p>7. Training on Business and Water safety plan preparation</p> <p>8. Improvement of billing and accounting system</p>      |
| Maasim              | BAWASA/B LGU run water system |                          | <p>1. Limited financial capacity to maintain existing water system and expand coverage</p> <p>2. Limited organizational capacity on water system operation and management</p> <p>4. Lack of technical capability particularly on water system maintenance</p> <p>5. No regular Water Quality Monitoring/ lack of technical knowledge on WQM</p> <p>6. Some water system became family run business (Barangay Tinoto)</p> <p>7. Unregulated tapping of HHs near water source which affected HHs</p> | <p>1. Barangay Nomoh included maintenance of water system in their budget</p> <p>2. PLGU provided PhP3M last year for Maasim Water District service expansion up to barangay Tinoto. However, waterlines did not reach Barangay Tinoto as the land claimant asked for payment if pipelines will pass thru his property.</p> | <p>1.Preparation of Technical Design for Spring source development for barangays Kablacan and Nomoh</p> <p>2. Develop and strengthen capacities of BAWASA in Nomoh in managing water systems</p> <p>3. Capacity building for LGU engineering office on water supply system design especially for spring sources</p> |

| City / Municipality | WSP Providers (List) | Barangay / Sitio Covered | Key Factors / Constraints for Non-Coverage of Entire Population in Water Services Provision   | Actions Being Undertaken (by LGU / WSP)   | Assistance Needed   |
|---------------------|----------------------|--------------------------|---|---|---|
|                     |                      |                          | located far from the source (Nomoh)<br>8. Problem with intake box design (Kablacan and Amsipit)   |   |   |
| Kiamba              |                      |                          | 1. Majority of HHs with pitcher pumps<br>2. Barangays Soli, Kapati, Tamadang have active BAWASA<br>3. BLGU run water system at Maligang, Gasi at Nalus<br>4. BLGU run water system with spring source in 10 barangays | 1. BLGU provide maintenance of water system in their budget<br>2. MLGU implements and assists in the organization and training of BAWASA in the management of water system<br>3. MLGU provides funds and sought assistance from PLGU and NGAs for water supply projects | 1. Training of BAWASA and BLGU on water system operation and maintenance<br>2. WQM training<br>3. Assistance to MLGU for setting up of water enterprise or a joint venture for water system |

## Annex 10: Category / Type of Sanitation Service and Facility

| Type / Category of Sanitation Service | Sanitation Facility  |
|---------------------------------------|--|
| Safely managed                        | Connected to sewerage system or septage management program, with wastewater treatment facility |
| Basic                                 | Water-sealed toilet, septic tank used exclusively by household                                 |
| Limited                               | Water-sealed toilet septic tank shared with other household                                    |
|                                       | Water-sealed other depository used exclusively by household                                    |
|                                       | Water-sealed other depository shared with other household                                      |
|                                       | Closed pit   |
| Unimproved                            | Open pit   |
|                                       | Others   |
| Open Defecation                       | None   |

## Annex II: Access to Sanitation Services According to Category; Province of Palawan According to City / Municipality (2019)

| No.                    | Area (City / Municipality) | 2019 Population  | Number of People by Category of Sanitation Services |                |                |                |                 | Proportion of People by Category of Sanitation Services |              |              |              |                 |
|------------------------|----------------------------|------------------|---|----------------|----------------|----------------|-----------------|---|--------------|--------------|--------------|-----------------|
|                        |                            |                  | Safely Managed                                      | Basic          | Limited        | Unimproved     | Open Defecation | Safely Managed  | Basic        | Limited      | Unimproved   | Open Defecation |
| 1                      | Aborlan                    | 38,214           |   | 10,890         | 18,397         | 4,309          | 4,618           |   | 28.5%        | 48.1%        | 11.3%        | 12.1%           |
| 2                      | Agutaya                    | 13,184           |   | 2,564          | 8,381          | 984            | 1,254           |   | 19.5%        | 63.6%        | 7.5%         | 9.5%            |
| 3                      | Araceli                    | 16,220           |   | 6,283          | 5,176          | 254            | 4,507           |   | 38.7%        | 31.9%        | 1.6%         | 27.8%           |
| 4                      | Balabac                    | 45,434           |   | 2,662          | 7,597          | 11,180         | 23,996          |   | 5.9%         | 16.7%        | 24.6%        | 52.8%           |
| 5                      | Bataraza                   | 88,565           |   | 12,763         | 38,253         | 10,381         | 27,168          |   | 14.4%        | 43.2%        | 11.7%        | 30.7%           |
| 6                      | Brooke's Point             | 72,008           |   | 18,797         | 30,746         | 7,183          | 15,282          |   | 26.1%        | 42.7%        | 10.0%        | 21.2%           |
| 7                      | Busuanga                   | 23,900           |   | 13,807         | 4,782          | 2,226          | 3,085           |   | 57.8%        | 20.0%        | 9.3%         | 12.9%           |
| 8                      | Cagayancillo               | 6,271            |   | 2,836          | 2,281          | 241            | 913             |   | 45.2%        | 36.4%        | 3.8%         | 14.6%           |
| 9                      | Coron                      | 58,785           |   | 23,596         | 14,285         | 9,930          | 10,973          |   | 40.1%        | 24.3%        | 16.9%        | 18.7%           |
| 10                     | Cuyo                       | 23,603           |   | 11,488         | 9,317          | 759            | 2,040           |   | 48.7%        | 39.5%        | 3.2%         | 8.6%            |
| 11                     | Dumaran                    | 26,104           |   | 12,196         | 9,418          | 2,322          | 2,168           |   | 46.7%        | 36.1%        | 8.9%         | 8.3%            |
| 12                     | El Nido                    | 46,678           |   | 14,689         | 20,523         | 6,736          | 4,730           |   | 31.5%        | 44.0%        | 14.4%        | 10.1%           |
| 13                     | Linapacan                  | 18,070           |   | 3,516          | 7,117          | 3,313          | 4,125           |   | 19.5%        | 39.4%        | 18.3%        | 22.8%           |
| 14                     | Magsaysay                  | 12,572           |   | 5,458          | 5,826          | 1,005          | 284             |   | 43.4%        | 46.3%        | 8.0%         | 2.3%            |
| 15                     | Narra                      | 78,322           |   | 36,466         | 32,258         | 5,049          | 4,550           |   | 46.6%        | 41.2%        | 6.4%         | 5.8%            |
| 16                     | Quezon                     | 67,497           |   | 14,674         | 35,356         | 7,705          | 9,762           |   | 21.7%        | 52.4%        | 11.4%        | 14.5%           |
| 17                     | Roxas                      | 71,276           |   | 25,843         | 36,573         | 5,200          | 3,659           |   | 36.3%        | 51.3%        | 7.3%         | 5.1%            |
| 18                     | San Vicente                | 34,436           |   | 12,256         | 15,602         | 4,305          | 2,273           |   | 35.6%        | 45.3%        | 12.5%        | 6.6%            |
| 19                     | Taytay                     | 82,327           |   | 20,896         | 35,002         | 9,759          | 16,670          |   | 25.4%        | 42.5%        | 11.9%        | 20.2%           |
| 20                     | Kalayaan                   | 206              |   | 206            | 0              | 0              | 0               |   | 100.0%       | 0.0%         | 0.0%         | 0.0%            |
| 21                     | Culion                     | 22,094           |   | 7,320          | 3,310          | 2,150          | 9,315           |   | 33.1%        | 15.0%        | 9.7%         | 42.2%           |
| 22                     | Rizal                      | 56,599           |   | 6,100          | 30,107         | 10,346         | 10,047          |   | 10.8%        | 53.2%        | 18.3%        | 17.8%           |
| 23                     | Sofronio Espanola          | 34,721           |   | 6,640          | 12,496         | 3,131          | 12,454          |   | 19.1%        | 36.0%        | 9.0%         | 35.9%           |
| 24                     | Puerto Princesa City       | 289,242          |   | 186,552        | 73,673         | 15,413         | 13,603          |   | 64.5%        | 25.5%        | 5.3%         | 4.7%            |
| <b>Total / Overall</b> |                            | <b>1,226,328</b> |   | <b>458,497</b> | <b>456,475</b> | <b>123,879</b> | <b>187,477</b>  |   | <b>37.4%</b> | <b>37.2%</b> | <b>10.1%</b> | <b>15.3%</b>    |

**Annex 12: Situation in the Delivery of Sanitation Services; Province of Palawan per City / Municipality  
(Notes for IDIs / FGDs)**

| City / Municipality                | Factors / Constraints Why Some HHs Remain Accessing Unimproved Sanitation Services / Open Defecation  | Actions Being Undertaken   | Assistance Needed Way Forward  |
|------------------------------------|---|--|--|
| <p><b>Puerto Princesa City</b></p> | <p>Household with unimproved sanitation services due to:</p> <ol style="list-style-type: none"> <li>1. limited land space to construct septic tank. It is common for households in the coastal areas to dispose their waste directly to the sea water.</li> <li>2. limited financial capacity to construct septic tank and sanitation facility.</li> <li>3. insufficient source of water especially for flung areas due to lack of water source development.</li> </ol> | <p>The current initiatives and activities of City on sanitation include:</p> <ol style="list-style-type: none"> <li>(a) IEC and seminar on importance of proper sanitation and proper waste disposal among households.</li> <li>(b) Implementation of <i>Bayanihan para sa Malinis na Palikuran</i> Program. The City is distributing free toilet bowls to every household without toilet. The households are required to construct septic tank and toilet facility before being given the free toilet bowl. The City required septic tanks to be sealed.</li> <li>(c) Implementation of Zero Open Defecation (ZOD) Program since 2016. As of 2019, 27 barangays are declared ZOD. The Program aims to change the behavior of communities</li> </ol> | <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available visual aids or any materials to be given to the community during IEC activities.</p> <p>Financial assistance to households in the construction of septic tanks and toilets.</p> |

| City / Municipality | Factors / Constraints Why Some HHs Remain Accessing Unimproved Sanitation Services / Open Defecation | Actions Being Undertaken   | Assistance Needed Way Forward  |
|---------------------|--|--|--|
|                     |  | <p>and government towards proper sanitation practices.</p> <p>(d) Barangay Irawan implements barangay ordinance on sanitation. The ordinance requires each household to have its own toilet facility.</p> <p>The City is partnering with A Single Drop for Safe Water (ASDSW) organization in its water, sanitation, and hygiene (WASH) activities.</p>  |  |
|                     |  | <p>The City Government of Puerto Princesa has an ongoing Septage, Sewerage and Sanitation project designed with an initial capacity of 70 CMD septage and 2,000 MLD of sewage waste.</p> <p>The City Government of Puerto Princesa together with PPCWD and Puerto Princesa Water Reclamation and Learning Center, Inc. had entered into “Joint Venture Agreement” (JVA) with the consortium of Eco-System Technologies Inc., Eco-System Technologies</p> | <p>Provide assistance in making the JVA work for the three proponents and guarantee the completion of the project.</p> |

| City / Municipality         | Factors / Constraints Why Some HHs Remain Accessing Unimproved Sanitation Services / Open Defecation  | Actions Being Undertaken  | Assistance Needed Way Forward  |
|-----------------------------|---|---|--|
|                             |   | International Inc. (ESTII), and JCA Holdings, Inc. to undertake the project.  |  |
| <b>Dumaran Municipality</b> | <p>As of 2020, approximately 843 households still have no toilet facilities. They include:</p> <ol style="list-style-type: none"> <li>1. Households at the coastal areas which have limited land space for establishment of sanitation facilities.</li> <li>2. Households with limited financial capacity to construct septic tank and sanitation facility.</li> <li>3. Households with insufficient source of water such as in barangays of Calasag, Catep, and Culasian.</li> </ol> | <p>Every barangay has volunteer to conduct the following activities:</p> <ol style="list-style-type: none"> <li>1. Survey to determine the households without toilet.</li> <li>2. Distribute toilet bowls to identified households without toilet. Each household should meet the following set of criteria of LGU before acquiring the free toilet bowls: (1) constructed septic tank, and (2) constructed toilet facility. On average, 100 toilet bowls are distributed annually since 2016. The MHO provides certification to those households who acquire toilet bowl.</li> </ol> | <p>Conduct training on environmental sanitation program (e.g. proper sanitation practices, importance of having proper sanitation) among sanitary inspector and barangay volunteers. This would be helpful to strengthen the understanding and capacity of personnel on water quality monitoring.</p> <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available visual aids or any materials to be given to the community during IEC activities.</p> <p>Financial assistance to households in the construction of septic tanks and toilets.</p> |



| City / Municipality               | Factors / Constraints Why Some HHs Remain Accessing Unimproved Sanitation Services / Open Defecation   | Actions Being Undertaken  | Assistance Needed Way Forward  |
|-----------------------------------|--|---|--|
| <p><b>Taytay Municipality</b></p> | <p>Coastal barangays such as Abongan, Bato, and Baras and island barangays such as Beton, Paly and Tumbod have limited access to sanitation services due to limited land space for establishment of septic tank and insufficient water supply in the area.</p> | <p>Conduct of IEC among households on the importance of proper sanitation.</p> <p>The LGU and MHU prioritize the distribution of toilet bowl and monitoring of sanitation in all barangays to provide enough toilet bowls to cover all the households.</p> <p>The toilet bowl distribution program started in 2017. In 2019, about 300 toilet bowls were distributed in households without existing toilet. The LGU requires each household to have sealed septic tank and toilet facility before being given free toilet bowls. Some households used plastic blue container as sealed septic tank.</p> <p>Barangay Minapla and Pularaquen implemented barangay ordinance on sanitation. The ordinance requires each household to have its own toilet facility.</p> | <p>Financial assistance to households in the construction of septic tanks and toilets.</p> |

| City / Municipality | Factors / Constraints Why Some HHs Remain Accessing Unimproved Sanitation Services / Open Defecation | Actions Being Undertaken   | Assistance Needed Way Forward   |
|---------------------|--|--|---|
|                     | Limited financial capacity of household to construct septic tank and toilet facility.                | The LGU provides free cement and pipes to some households for the construction of septic tank. | Financial assistance to households in the construction of septic tanks and toilets. |

### Annex I3: Access to Sanitation Services According to Category; Province of Negros Occidental per City / Municipality; 2019

| No. | Area (City / Municipality) | 2019 Population  | Number of People by Category of Sanitation Services |                  |                |                |                 | Proportion of People by Category of Sanitation Services |              |              |             |                 |
|-----|----------------------------|------------------|---|------------------|----------------|----------------|-----------------|---|--------------|--------------|-------------|-----------------|
|     |                            |                  | Safely Managed                                      | Basic            | Limited        | Unimproved     | Open Defecation | Safely Managed  | Basic        | Limited      | Unimproved  | Open Defecation |
| 1   | Bago City                  | 179,757          |   | 75,424           | 66,341         | 11,953         | 26,038          |   | 42.0%        | 36.9%        | 6.6%        | 14.5%           |
| 2   | Binalbagan                 | 69,893           |   | 23,581           | 24,713         | 10,522         | 11,078          |   | 33.7%        | 35.4%        | 15.1%       | 15.8%           |
| 3   | Cadiz City                 | 158,318          |   | 65,659           | 31,707         | 19,681         | 41,270          |   | 41.5%        | 20.0%        | 12.4%       | 26.1%           |
| 4   | Calatrava                  | 82,304           |   | 17,743           | 10,562         | 15,455         | 38,544          |   | 21.6%        | 12.8%        | 18.8%       | 46.8%           |
| 5   | Candoni                    | 22,296           |   | 10,184           | 8,126          | 2,502          | 1,483           |   | 45.7%        | 36.4%        | 11.2%       | 6.7%            |
| 6   | Cauayan                    | 106,118          |   | 27,821           | 45,297         | 11,293         | 21,707          |   | 26.2%        | 42.7%        | 10.6%       | 20.5%           |
| 7   | Enrique B. Magalona        | 65,382           |   | 33,129           | 12,984         | 3,187          | 16,083          |   | 50.7%        | 19.9%        | 4.9%        | 24.6%           |
| 8   | Escalante City             | 98,521           |   | 33,048           | 20,805         | 10,692         | 33,976          |   | 33.5%        | 21.1%        | 10.9%       | 34.5%           |
| 9   | Himamaylan City            | 112,334          |   | 38,951           | 34,719         | 13,969         | 24,695          |   | 34.7%        | 30.9%        | 12.4%       | 22.0%           |
| 10  | Hinigaran                  | 88,675           |   | 33,728           | 38,718         | 7,049          | 9,180           |   | 38.0%        | 43.7%        | 7.9%        | 10.4%           |
| 11  | Hinobaan                   | 58,538           |   | 24,708           | 18,274         | 5,158          | 10,397          |   | 42.2%        | 31.2%        | 8.8%        | 17.8%           |
| 12  | Ilog                       | 60,692           |   | 20,292           | 25,537         | 7,677          | 7,185           |   | 33.4%        | 42.1%        | 12.6%       | 11.8%           |
| 13  | Isabela                    | 66,314           |   | 18,163           | 26,188         | 9,306          | 12,657          |   | 27.4%        | 39.5%        | 14.0%       | 19.1%           |
| 14  | Kabankalan City            | 191,679          |   | 64,493           | 72,879         | 27,391         | 26,915          |   | 33.6%        | 38.0%        | 14.3%       | 14.0%           |
| 15  | La Carlota City            | 66,807           |   | 40,258           | 15,946         | 2,979          | 7,624           |   | 60.3%        | 23.9%        | 4.5%        | 11.4%           |
| 16  | La Castellana              | 79,723           |   | 25,223           | 24,036         | 8,690          | 21,775          |   | 31.6%        | 30.1%        | 10.9%       | 27.3%           |
| 17  | Manapla                    | 56,341           |   | 17,128           | 20,048         | 4,159          | 15,005          |   | 30.4%        | 35.6%        | 7.4%        | 26.6%           |
| 18  | Moises Padilla             | 43,391           |   | 10,687           | 11,905         | 5,939          | 14,859          |   | 24.6%        | 27.4%        | 13.7%       | 34.2%           |
| 19  | Murcia                     | 88,395           |   | 31,849           | 28,564         | 9,387          | 18,594          |   | 36.0%        | 32.3%        | 10.6%       | 21.0%           |
| 20  | Pontevedra                 | 54,837           |   | 20,788           | 22,635         | 4,043          | 7,371           |   | 37.9%        | 41.3%        | 7.4%        | 13.4%           |
| 21  | Pulupandan                 | 28,261           |   | 17,678           | 6,010          | 954            | 3,618           |   | 62.6%        | 21.3%        | 3.4%        | 12.8%           |
| 22  | Sagay City                 | 151,008          |   | 54,597           | 26,241         | 17,955         | 52,215          |   | 36.2%        | 17.4%        | 11.9%       | 34.6%           |
| 23  | San Carlos City            | 136,626          |   | 44,693           | 26,754         | 22,668         | 42,510          |   | 32.7%        | 19.6%        | 16.6%       | 31.1%           |
| 24  | San Enrique                | 24,416           |   | 9,781            | 11,164         | 1,498          | 1,973           |   | 40.1%        | 45.7%        | 6.1%        | 8.1%            |
| 25  | Silay City                 | 132,607          |   | 72,928           | 32,411         | 9,701          | 17,567          |   | 55.0%        | 24.4%        | 7.3%        | 13.2%           |
| 26  | Sipalay City               | 72,374           |   | 24,799           | 22,734         | 5,213          | 19,628          |   | 34.3%        | 31.4%        | 7.2%        | 27.1%           |
| 27  | Talisay City               | 109,429          |   | 58,768           | 27,346         | 8,675          | 14,641          |   | 53.7%        | 25.0%        | 7.9%        | 13.4%           |
| 28  | Taboso                     | 42,496           |   | 12,538           | 6,674          | 7,234          | 16,050          |   | 29.5%        | 15.7%        | 17.0%       | 37.8%           |
| 29  | Valladolid                 | 39,373           |   | 16,391           | 17,786         | 2,058          | 3,138           |   | 41.6%        | 45.2%        | 5.2%        | 8.0%            |
| 30  | Victorias City             | 89,661           |   | 44,362           | 24,135         | 10,900         | 10,263          |   | 49.5%        | 26.9%        | 12.2%       | 11.4%           |
| 31  | Salvador Benedicto         | 28,525           |   | 5,402            | 7,846          | 5,471          | 9,806           |   | 18.9%        | 27.5%        | 19.2%       | 34.4%           |
| 32  | Bacolod City               | 603,765          |   | 436,308          | 133,859        | 19,616         | 13,982          |   | 72.3%        | 22.2%        | 3.2%        | 2.3%            |
|     | <b>Total / Overall</b>     | <b>3,208,856</b> |   | <b>1,431,105</b> | <b>902,945</b> | <b>302,976</b> | <b>571,830</b>  |   | <b>44.6%</b> | <b>28.1%</b> | <b>9.4%</b> | <b>17.8%</b>    |

## Annex 14: Sanitation Services Delivery Situation; Province of Negros Occidental per City / Municipality

| City / Municipality                           | Factors / Constraints Affecting HH Access to Improved Sanitation  | Actions Being Undertaken   | Assistance Needed Way Forward  |
|---|---|--|--|
| <b>Bacolod City</b>                           | <ol style="list-style-type: none"> <li>1. No actual count of households without toilet per Barangay.</li> <li>2. Illegal Settlers – No toilet (pack and throw system)</li> <li>3. Far flung areas – open fields used as toilet</li> <li>4. They don't own their land</li> </ol>   | Distribution of toilet bowls and assistance in construction of septic tank.  | Legislate / Encourage Barangays to the creation of Barangay Sanitation Inspector – For monitoring  |
| <b>Municipality of Don Salvador Benedicto</b> | Behavioral problem  | The LGU continuously conducted health education  | Additional budget for IEC materials  |
| <b>Municipality of Isabela</b>                | <ol style="list-style-type: none"> <li>1. Due to poverty or irregular income/seasonal income</li> <li>2. Insufficient water supply or not consistently available</li> <li>3. Difficulty in hauling of materials in constructing of toilet in far flung area</li> <li>4. Poor road condition</li> <li>5. Custom or traditional belief seen in their family member or learned since childhood</li> <li>6. Inability to afford the fees or charges in constructing toilet</li> <li>7. Lot occupied not titled</li> <li>8. Lack of education on the advantages and disadvantages of having toilet facility</li> </ol> | <ul style="list-style-type: none"> <li>• Providing toilet bowl set and ready to construct by the LGU and PHO</li> <li>• Providing hose to reach the water source by the LGU</li> <li>• Providing transportation provided by the LGU</li> <li>• Surveying the location or status of their house</li> <li>• Conduct or advocate and implement the rules and guidelines in ZOD program</li> <li>• Sharing the fees and charges by the LGU</li> <li>• Asking the land owner for their provision or permit to construct their own house</li> <li>• Conduct health education and advocacy in every barangay mostly in 4P's, IP's and other groups</li> </ul> | <ol style="list-style-type: none"> <li>1. Providing the additional finance of toilet bowl set total declaring Municipal ZOD</li> <li>2. Additional construction of improved water source</li> <li>3. Concrete road</li> <li>4. Providing accessible roads</li> <li>5. Additional Finances</li> <li>6. Deeds of donation</li> </ol> |

| City / Municipality           | Factors / Constraints Affecting HH Access to Improved Sanitation   | Actions Being Undertaken   | Assistance Needed Way Forward  |
|-------------------------------|--|--|--|
| <b>Bago City</b>              | Financial instability/poverty  | <ul style="list-style-type: none"> <li>• Distribution of toilet bowls</li> </ul>   | <ul style="list-style-type: none"> <li>• Financial assistance</li> <li>• Technical assistance</li> </ul> |
|                               | Behavioral problems in relation to sanitation and hygiene  | <ul style="list-style-type: none"> <li>• Information campaign/provision of IEC materials</li> <li>• Implementation of ZOD programs</li> </ul>  |  |
| <b>Municipality of Murcia</b> | <ul style="list-style-type: none"> <li>• Behavioral problem</li> <li>• Land is owned by haciendas</li> </ul> | <ul style="list-style-type: none"> <li>• Provide toilet bowl</li> <li>• Solicit to buy materials</li> <li>• Education – Behavioral Change Communication (BCC) per Household</li> <li>• Ordinance 402 (ZOD) – adapted by Barangay</li> <li>• Community Led Total Sanitation (CLTS)</li> </ul> | <ul style="list-style-type: none"> <li>• Financial/Budget</li> <li>• Materials for toilet</li> </ul>     |

## Annex 15: Profile of a Septage Treatment Facility in the Municipality of Alabel, Sarangani

### A. Construction Duration:

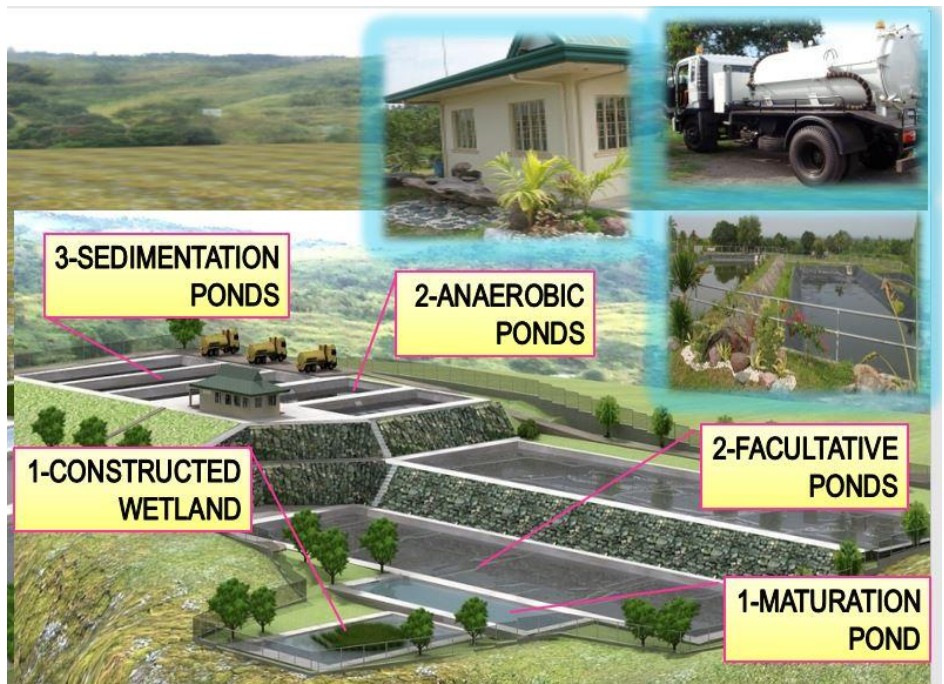
Start : February 17, 2006  
 Completion : March 28, 2008

- ✱ Recipient of ██████████ STF grant Project from DENR under Southern Mindanao Integrated Coastal Zone Management Project (SMICZMP)
- ✱ Funding came from a loan from the Japan Bank for International Cooperation (JICA).
- ✱ LARGEST STF in Sarangani with Design capacity of 60 m<sup>3</sup> per day
- ✱ Natural treatment system (managed by LGU)
- ✱ Alabel STF adopts a Pond Stabilization and a Natural system – “a type of wastewater treatment system in which the process of biological degradation of organic compounds is not aided by the input of significant amounts of energy or chemicals”
- ✱ Alabel STF is designed to ONLY accept and treat wastewater which are domestic in nature.
- ✱ It was originally intended for General Santos City, but with God’s orchestration, the STF project were transferred/distributed among five (5) other coastal towns of Sarangani province as a GRANT from the DENR.
- ✱ The primary objective of constructing STF’s is **to protect the coastal waters of Sarangani from pollution, particularly from domestic sewage by processing septic tank contents before wastewater drains to the bay**

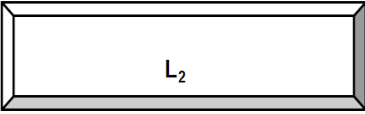
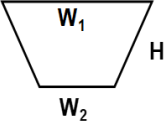
### Main Feature of Alabel STF:

The Alabel STF Project is comprised of:

- Treatment ponds: 3- sedimentation ponds, 2-Anaerobic ponds, 2-Facultative Ponds, 1-Maturation Pond & 1-Constructed Wetland (All collected septage shall be brought to the STF for proper treatment passing all the 5-ponds)
- Ancillary: Administration building, parking and vehicle washing, access road, security fence, lighting facility, potable water supply, wash water system, drainage, sampling location and landscaping.
- 2-units Vacuum Trucks were also provided. Both have capacity of 5-cu.m and can take a maximum of 5 to 6-trips per day
- 1-unit Bobcat Truck Loader



## SEPTAGE TREATMENT PONDS

| SEPTAGE TREATMENT PONDS |                            |   |                |   |                |        |                          |                 |
|-------------------------|----------------------------|---|----------------|---|----------------|--------|--------------------------|-----------------|
| POND                    | No. of units               | DIMENSION (meters)  |                |   |                |        | Volume (m <sup>3</sup> ) |                 |
|                         |                            |  |                |  |                |        |                          |                 |
|                         |                            | Length  |                | Width   |                | Height |                          |                 |
|                         |                            | L <sub>1</sub>  | L <sub>2</sub> | W <sub>1</sub>  | W <sub>2</sub> | H      |                          |                 |
| 1                       | <b>SEDIMENTATION POND</b>  | 3   | 35.50          | 26.00   | 11.00          | 4.00   | 3.50                     | <b>807.19</b>   |
| 2                       | <b>ANAEROBIC POND</b>      | 2   | 25.50          | 15.50   | 14.00          | 4.00   | 5.00                     | <b>922.50</b>   |
| 3                       | <b>FACULTATIVE POND</b>    | 2   | 91.95          | 87.25   | 25.20          | 20.50  | 2.35                     | <b>4,811.30</b> |
| 4                       | <b>MATURATION POND</b>     | 1   | 34.40          | 30.80   | 10.40          | 6.80   | 1.80                     | <b>504.65</b>   |
| 5                       | <b>CONSTRUCTED WETLAND</b> | 1   | 15.00          | 12.80   | 23.80          | 21.80  | 1.00                     | <b>316.92</b>   |

**Annex I6: Access to Sanitation Services according to Category; Province of Sarangani per City / Municipality; 2019**

| No.                    | Area (City / Municipality) | 2019 Population  | Number of People by Category of Sanitation Services |                |                |               |                 | Proportion of People by Category of Sanitation |              |              |             |                 |
|------------------------|----------------------------|------------------|---|----------------|----------------|---------------|-----------------|--|--------------|--------------|-------------|-----------------|
|                        |                            |                  | Safely Managed                                      | Basic          | Limited        | Unimproved    | Open Defecation | Safely Managed                                 | Basic        | Limited      | Unimproved  | Open Defecation |
| 1                      | Alabel                     | 86,810           | 1,375   | 45,965         | 23,320         | 16,135        | 15              | 1.6%   | 52.9%        | 26.9%        | 18.6%       | 0.0%            |
| 2                      | Glan                       | 116,820          |   | 41,025         | 60,700         | 9,135         | 5,960           | 0.0%   | 35.1%        | 52.0%        | 7.8%        | 5.1%            |
| 3                      | Kiamba                     | 67,895           |   | 31,840         | 23,255         | 0             | 12,800          | 0.0%   | 46.9%        | 34.3%        | 0.0%        | 18.9%           |
| 4                      | Maasim                     | 65,000           |   | 27,470         | 28,710         | 2,480         | 6,340           | 0.0%   | 42.3%        | 44.2%        | 3.8%        | 9.8%            |
| 5                      | Maitum                     | 44,820           |   | 26,435         | 17,215         | 585           | 585             | 0.0%   | 59.0%        | 38.4%        | 1.3%        | 1.3%            |
| 6                      | Malapatan                  | 84,335           |   | 22,515         | 47,935         | 9,455         | 4,430           | 0.0%   | 26.7%        | 56.8%        | 11.2%       | 5.3%            |
| 7                      | Malungon                   | 112,980          |   | 63,256         | 41,668         | 7,416         | 640             | 0.0%   | 56.0%        | 36.9%        | 6.6%        | 0.6%            |
| 8                      | General Santos City        | 655,571          |   | 408,844        | 219,059        | 9,601         | 18,067          | 0.0%   | 62.4%        | 33.4%        | 1.5%        | 2.8%            |
| <b>Total / Overall</b> |                            | <b>1,234,231</b> | <b>1,375</b>  | <b>667,350</b> | <b>461,862</b> | <b>54,807</b> | <b>48,837</b>   | <b>0.1%</b>                                    | <b>54.1%</b> | <b>37.4%</b> | <b>4.4%</b> | <b>4.0%</b>     |



## Annex 17: Situation in the Delivery of Sanitation Services; General Santos City and Province of Sarangani per City / Municipality

| City / Municipality        | Factors / Constraints Limiting HH Access to Improved Sanitation  | Actions Being Undertaken   | Assistance Needed Way Forward  |
|----------------------------|--|--|--|
| <b>General Santos City</b> | <ol style="list-style-type: none"> <li>1.Limited financial resources of some urban communities</li> <li>2.Cultural practices of some barangays (Badjao / Blaan areas)</li> <li>3.Technical readiness of managing units or concerned offices on sanitation</li> </ol> | <ol style="list-style-type: none"> <li>1. Passage of Environment Code</li> <li>2. Ongoing preparation of LSPP</li> <li>3. Establishment of City Septage Treatment Facility (for bidding)</li> <li>4. Newly constructed Water Laboratory at MSU-Gensan</li> <li>5. WatSan TWG trained on social marketing campaign</li> <li>6. Developed social marketing campaign materials on sanitation</li> </ol> | <ol style="list-style-type: none"> <li>1.Retrofitting of existing sanitary facilities for some communities</li> <li>2.Technical training for managing units of sanitary facilities</li> <li>3.Operation and maintenance training on SpTP</li> <li>4. Conduct of social marketing campaigns at community level</li> </ol> |
| <b>Alabel</b>              | <ol style="list-style-type: none"> <li>1.Limited financial resources</li> <li>2.Limited water sources</li> <li>3.Cultural practices</li> <li>4.Technical readiness of managing units or concerned offices on sanitation</li> </ol>                                   | <p>PLGU fund support to ZOD compliance</p> <p>Municipal ordinance on ZOD</p> <p>Designation of barangay sanitary inspectors</p> <p>National Award system on ZOD prompted P/MLGU and barangays to work together to comply with ZOD. Barangay Tokawal is the first BLGU ZOD compliant. Barangay Paraiso is the third BLGU and 1<sup>st</sup> IP community ZOD compliant</p>                            | <p>Retrofitting of existing sanitary facilities</p> <p>Technical training for managing units of sanitary facilities</p> <p>Operation and maintenance training on SpTP</p>  |

| City / Municipality | Factors / Constraints Limiting HH Access to Improved Sanitation | Actions Being Undertaken  | Assistance Needed Way Forward  |
|---------------------|---|---|--|
| Maasim              |   | <ol style="list-style-type: none"> <li>1. MLGU ZOD Ordinance</li> <li>2. Provided toilet bowls</li> <li>3. Advocacy on sanitary toilets</li> </ol>  | <p>Retrofitting of existing sanitary facilities</p> <p>Technical training for managing units of sanitary facilities</p> <p>Re-activation of SpTP</p> |
| Kiamba              |   | <ol style="list-style-type: none"> <li>1. MLGU has ZOD ordinance</li> <li>2. MEO enforce ZOD ordinance specially on septic tank for new building permit applications and conduct inspection to ensure compliance. Only compliant building owners will be granted with occupancy permit</li> <li>3. MLGU priority for next year – close the gap on access to sanitary toilets. Provided funds for the construction of communal septic tanks using PLGU design for communal septic tanks</li> </ol> | <p>Retrofitting of existing sanitary facilities</p> <p>Technical training for managing units of sanitary facilities</p>                              |

## Annex I8: Water Service Quality Problems, Actions Being Undertaken and Assistance Needed; Province of Palawan per City / Municipality

| City / Municipality  | Type of Water Service | Service Quality Problems  | Actions Being Undertaken   | Assistance Needed Way Forward                                 |
|----------------------|-----------------------|---|--|---|
| Puerto Princesa City | Level I               | <p><b>Quality:</b><br/>Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b><br/>Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community.</p>   | <p>Distribution of waterline or chlorine to households for water disinfection.</p> <p>Rationing of water to affected households.</p>   | Expansion of water service area of WD to unserved households. |
|                      | Level II              | <p><b>Quality:</b> Runoff water that causes high turbidity on the water source during rainy days. Barangay Cabayugan and Tagabinet observed turbid water last rainy months.</p> <p><b>Availability:</b> Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community.</p>                                 | <p>Distribution of waterline or chlorine to households for water disinfection.</p> <p>Rationing of water to affected households.</p>   | Expansion of water service area of WD to unserved households. |
|                      | Level III             | <p><b>Quality:</b> Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b> Insufficient water supply of Irawan during dry months in most of its pumping stations. This is due to low discharge capacity of pumping stations. Out of 50 wells, only 36 are now being utilized by the WD. Moreover, the WD Filtration Plant in Campo Uno Bgy. Irawan</p> | <p>Increase of chemicals and introduction of other procedures to meet water quality standard.</p> <p>Regular monitoring of physico-chemical and bacteriological water quality parameters was done by PPCWD. The results of water quality tests complied with the</p> |   |

| City / Municipality  | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward  |
|----------------------|-----------------------|--|--|--|
|                      |                       | <p>that has a discharge capacity of 5 MLD is now short of its designed supply rate.</p> <p>The PPCWD raised its Water Crisis Alert Level from Level 1 to 3 due to progressive reduction in water production from its reservoir. The water production has significantly drop from 32,705.80 cubic meter per day to 31,393.85 cubic meter per day.</p>   | <p>DOH water quality standard.</p> <p>WD has ongoing projects that will increase water supply.</p> <p>Advisories on water quality, adequacy, potability, reliability, leakages, and delay in the delivery.</p> <p>Water rationing with a duration of 10 hours per zone was scheduled. It was supported by water inject and water deliveries.</p>         |  |
| Dumaran Municipality | Level I               | <p><b>Quality:</b></p> <p>Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b></p> <p>Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community. Some communities sourced out their water in Poblacion and Sta. Teresita water system. In Brgy. Magsaysay, the community gets their drinking water in Sta. Teresita water system.</p> | <p>Every barangay has volunteer to conduct the following activities:</p> <ul style="list-style-type: none"> <li>a) Monitor the status of water sources.</li> <li>b) Information, Education, and Communication (IEC) campaign on the importance of clean water, causes of water contamination, and water treatment method among the community.</li> </ul> | <p>Conduct training on environmental sanitation program (e.g., standard measurement and application of chlorine in the water and water quality monitoring, standard water quality monitoring, and proper sanitation practices) among sanitary inspectors and barangay volunteers. This would be helpful to strengthen the understanding and capacity of personnel on water quality monitoring.</p> |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward  |
|---------------------|-----------------------|--|--|--|
|                     |                       |  | <p>c) Provide free waterline or chlorine for water treatment.</p> <p>To provide water in the entire municipality, water supply system projects are being implemented at the barangay level:</p>  | <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available IEC materials.</p> <p>Additional budget for water system.</p>   |
|                     | Level II              | <p><b>Quality:</b><br/>Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b> Low water level due to less rainfall and drying of sources is observed, especially during the summer season. This leads to insufficient water supply of community.</p> | <p>a) The LGU loaned from MDFO to develop 6 water system projects in 6 barangays, namely: Bgys. Bohol, Poblacion, San Juan, Santo Tomas, Calasag, and Culasian. Out of the six barangays, only Bgy. Culasian is now completed and being operated by PGP.</p> <p>b) In 2020, two (2) <i>Salintubig</i> projects were approved for implementation.</p> <p>c) Rehabilitation and improvement of Level I and Level II water systems were implemented</p> | <p>Provision of water filtration to be used by the LGU to improve water services to the community.</p> <p>Conduct training on environmental sanitation program (e.g., standard measurement and application of chlorine in the water and water quality monitoring, standard water quality monitoring, and proper sanitation practices) among sanitary inspectors and barangay volunteers. This would be helpful to strengthen the understanding and capacity of personnel on water quality monitoring.</p> <p>Provision of pamphlets and any visual aids with water and sanitation information is needed. Currently, the LGU has no available visual aids or any materials to be given to</p> |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken   | Assistance Needed Way Forward   |
|---------------------|-----------------------|--|--|---|
|                     |                       |  | in several barangays.  | the community during IEC activities.<br>Additional budget for water system.   |
|                     | Level III             | <p><b>Water Quality:</b><br/>In September 2020, samples are positive to <i>E. coli</i> based on the results of the test. Activities near the sources can contribute to water contamination. Monthly monitoring of bacteriological and annual physico-chemical test of water sources was conducted in major water sources of Poblacion, Sta. Teresita, and Danleg. Water samples were submitted to Provincial Health Office and Manila laboratories.</p> <p><b>Availability:</b><br/>The water service delivery in the Poblacion is generally insufficient. Only an hour of daily water service is provided in regular days due to the small tank storage. The current tank storage (32 cu. m.) will be upgraded soon into 288 cu. m.</p> |  | <p>Identify and develop good water sources.</p> <p>Technical trainings on the management of water supply system, such as:</p> <ol style="list-style-type: none"> <li>1. Creation of committee on water quality monitoring and technical trainings.</li> <li>2. Commercial practices</li> </ol> <p>Additional budget for water system.</p> |
| Taytay Municipality | Level I               | <p><b>Quality:</b><br/>Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b> Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community.</p>  | Conduct IEC activity on the importance of using safe water, including discussion of different water treatment methods (boiling, solar water disinfection, and chlorination). |   |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward  |
|---------------------|-----------------------|---|---|--|
|                     |                       |   | <ul style="list-style-type: none"> <li>a.) Provide waterline or chlorine.</li> <li>b.) Provide pamphlets and visual aids.</li> </ul>  |  |
|                     | Level II              | <p><b>Quality:</b> All water samples have presence of coliform based on the results of PHC test conducted in deep wells and dug wells. Mismanagement and use of water sources, such as activities near the source, can result to water contamination.</p> <p>Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b> Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community.</p> | <p>Water sources are being managed by barangay LGUs.</p> <p>Conduct IEC activity on the importance of using safe water, including discussion of different water treatment methods (boiling, solar water disinfection, and chlorination).</p> <ul style="list-style-type: none"> <li>a.) Provide waterline or chlorine.</li> <li>b.) Provide pamphlets and visual aids.</li> </ul> | <p>Convince barangays with water sources to implement water payment for operation and maintenance.</p> <p>Orientation and training on management of water sources among barangay LGUs.</p> |
|                     | Level III             | <p><b>Quality:</b> Runoff water that causes high turbidity on the water source during rainy days.</p> <p><b>Availability:</b> Low water level due to less rainfall and drying of sources is observed especially during summer season. This leads to insufficient water supply of community.</p> <p>The present capacity of the filtration system in Bgy. Pamantolon constructed by PGP is not sufficient to supply costumers.</p>   | <p>TPWSMO is conducting a study on how to further improve their filtration facility to meet water quality standard.</p>   | <p>Improve the filtration of water system.</p>   |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward  |
|---------------------|-----------------------|--|---|--|
|                     |                       | <p>In Poblacion, there is a need to tap deep well during dry season as the surface water becomes depleted in elevated areas which were serviced only for 8 hours during these times.</p> | <p>TPWSMO is considering to utilize Lake Danao (aka Lake Manguao) as its additional water source. They are gathering data on how to make use of the lake either by constructing filtration system or by drilling wells in the area.</p> <p>TPWSMO is conducting a study on how to increase the supply of raw water that will flow to their filtration system.</p> | <p>Provide assistance in preparing design for the use of other water sources near the filtration system.</p> <p>Conduct Geo-Resistivity survey to determine potential aquifer in the area.</p> |



**Annex 19: Water Service Quality Problems, Actions Being Undertaken and Assistance Needed; Province of Negros Occidental per City / Municipality**

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken   | Assistance Needed Way Forward   |
|---------------------|-----------------------|---|--|---|
| <b>Bacolod City</b> | Level III             | The color of water is brownish.   | <ul style="list-style-type: none"> <li>Physical and chemical tests will be conducted on raw and treated water to determine why such color occurred.</li> <li>Check whether the incrustation on the pipelines causes the brownish color.</li> </ul> | TBD since BACIWA is already privatized.   |
| <b>Bago City</b>    | Level I               | Presence of E-coli contaminants.  | <ul style="list-style-type: none"> <li>Employ disinfection.</li> <li>Conduct regular residual chlorine and microbiological tests.</li> </ul>   | Provide trainings / workshops on water safety planning.                             |
|                     | Level III             | <ul style="list-style-type: none"> <li>Occurrence of high content of manganese and iron in the deep well sources.</li> <li>Low pressure occurs during peak-hour demand.</li> <li>Water availability in some parts of the service area is not 24 hours.</li> </ul> | Due to lack of technical and financial capacity, BACIWAD is entertaining plans for PPP arrangement to rehabilitate its old, inadequate and inefficient infrastructure.   | TBD after the results of the evaluation of the Primewater proposal have been known. |

| <b>City / Municipality</b>    | <b>Type of Water Service</b> | <b>Service Quality Problems</b>   | <b>Actions Being Undertaken</b>  | <b>Assistance Needed Way Forward</b>                                   |
|-------------------------------|------------------------------|---|--|--|
| <b>Don Salvador Benedicto</b> | Level I                      | Presence of E.coli contaminants.  | <ul style="list-style-type: none"> <li>• Employ disinfection.</li> <li>• Conduct regular residual chlorine and microbiological tests.</li> </ul>   | Provide trainings / workshops on water safety planning.                |
|                               | Level II                     | Turbidity problem especially during heavy rains.  | TBD  | Assist in assessing the existing situation and recommend interventions |
| <b>Isabela</b>                | Level I                      | Presence of E. coli contaminants.   | <ul style="list-style-type: none"> <li>• Employ disinfection.</li> <li>• Conduct regular residual chlorine and microbiological tests.</li> </ul>   | Provide trainings / workshops on water safety planning.                |
| <b>Murcia</b>                 | Level I                      | Presence of E. coli contaminants.   | <ul style="list-style-type: none"> <li>• Employ disinfection.</li> <li>• Conduct regular residual chlorine and microbiological tests.</li> </ul>   | Provide trainings / workshops on water safety planning.                |
| <b>San Carlos City</b>        | Level III                    | High turbidity during heavy rains resulting to plant shutdowns that causes water service interruptions. | The San Carlos Waterworks Department has asked DPWH who is the implementing agency of the DOT-funded WTP construction project to investigate the problem and also sought technical assistance from SW. | STTA for the assessment and improvement of existing WTP.               |
| <b>Silay City</b>             | Level III                    | Deepwell sources contains iron and manganese which are treated by the existing                          | Water quality monitoring including regular physical and chemical tests and   | TBD  |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken   | Assistance Needed Way Forward |
|---------------------|-----------------------|---|--|-------------------------------|
|                     |                       | iron and manganese removal facilities.  | maintenance of the treatment facilities.   |                               |
| <b>Talisay City</b> | Level III             | <ul style="list-style-type: none"> <li>• Deepwell sources contains iron and manganese but their values are within the permissible limits as per PNSDW.</li> <li>• The average operating pressure of the system is 3-5 psi which is lower when compared to LWUA-approved design criteria which is <math>\geq 10</math> psi.</li> </ul> | <ul style="list-style-type: none"> <li>• Continue monitoring of the parameters and conduct regular physical and chemical tests or as needed.</li> <li>• The average operating pressure will not be increased because most of the customers are residential and have one-story houses.</li> </ul> | TBD                           |

**Annex 20: Water Service Quality Problems, Actions Being Undertaken and Assistance Needed; General Santos City and Province of Sarangani per City / Municipality (Notes from IDIs / FGDs)**

| City / Municipality        | Type of Water Service | Service Quality Problems  | Actions Being Undertaken  | Assistance Needed Way Forward   |
|----------------------------|-----------------------|---|---|---|
| <b>General Santos City</b> | Level 1               | In some barangays (Tinagacan, Batomelong & Buayan) color is yellowish, metallic taste and turbid. In other areas color is clear, no taste and odorless.   | 1. Installation of Chlorinator in some barangays<br>2. Conduct of Water safety Planning (c/o SURGE) for 25 selected RWSAs.  | 1. For the remaining RWSAs ON WQM<br>2. Purchase of water quality testing kits<br>3. Conduct of regular WQM<br>4. Creation of community Operation and maintenance team<br>5. STRENGTHENING OF IBA(Integrated Barangay Affairs Office) |
|                            | Level 2               | Some areas with yellowish color but odorless and no taste. Other areas clear in color, no taste and odorless  |   |   |
|                            | Level 3               | RWSA's level III : some barangays have yellowish water particularly on barangays Tinagacan, Batomelong, Conel and Buayan)   |   |   |
| <b>Alabel</b>              | Level 1               | In barangay Poblacion, color is yellowish, metallic taste and turbid. In other areas color is clear, no taste and odorless. However, in one area in Barangay Ladol, water has odor, color yellowish, metallic taste | 1. Expands service area of Alabel LGU run level III water system<br>2. Identify additional water sources<br>3. Conduct WQM<br>4. Assigned barangay sanitary inspectors<br>5. PLGU undertakes water quality tests of water | Train LGU and WSPs on WQM<br>Purchase of water quality testing kits<br>Conduct of regular WQM   |
|                            | Level 2               | Some areas with yellowish color but odorless and no taste. Other areas clear in color, no taste and odorless  |   |   |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward  |
|---------------------|-----------------------|--|---|--|
|                     | Level 3               | <p>Water Quality:</p> <p><u>Alabel LGU run level III WS</u><br/> Poblacion: color is yellowish, metallic taste and turbid during rainy days</p> <p>Other areas: turbid during rainy days</p> <p>Pressure / Availability:</p> <p>Rationing, not 24</p> <p><u>LAWARSAI</u>: turbid during rainy days</p> <p>Pressure / Availability:</p> <p>Rationing, not 24/</p> <p><u>KAWAS</u>: yellowish in color and with odor</p> <p>Pressure / Availability:</p> <p>Rationing, not 24/7</p> <p>All level III WS turbid during rainy days</p> | sources prior to funding allocation   |  |
| <b>Malungon</b>     | Level I               | <p>Some areas in Poblacion: yellowish in color</p> <p>Other areas: no color, odorless and no taste but some areas buys mineral water in Poblacion for drinking.</p>  | <ul style="list-style-type: none"> <li>• MLGU has ZOD ordinance</li> <li>• Only two out of 19 barangays sampled for water quality testing in Malungon passed the</li> </ul> | <p>Train LGU and WSPs on WQM</p> <p>Purchase of water quality testing kits</p> <p>Conduct of regular WQM</p> |

| City / Municipality | Type of Water Service | Service Quality Problems   | Actions Being Undertaken  | Assistance Needed Way Forward  |
|---------------------|-----------------------|--|---|--|
|                     |                       | All level I except in upland areas like Datal Batong, Datal Tampal, Datal Bila: turbid water during rainy days and with ecoli presence   | <p>water testing done by the Sanitary Inspector in 2019</p> <ul style="list-style-type: none"> <li>• LGU provides fund support or sought PLGU assistance for water supply projects</li> <li>• PLGU undertakes water quality tests of water sources prior to funding allocation</li> </ul> |  |
|                     | Level 2               | All level II except in upland areas like Datal Batong, Datal Tampal, Datal Bila: turbid water during rainy days and with ecoli presence  |   |  |
|                     | Level 3               | <p>Malungon WD: no problem on water quality</p> <p>San Miguel BLGU managed water is used for domestic only.</p>  |   |  |
| <b>Maasim</b>       | Level 1               | <p>Private water supplier in Tinoto-clear, no taste and odorless</p> <p>Daliao and Tinoto: yellowish and with odor (smells like seawater)</p> <p>Other areas with pitcher pumps have yellowish color (high level of magnesium) and taste salty</p> | <p>1.LGU assist the WD expand and improve water service</p> <p>2.LGU provides fund support or sought PLGU assistance for water supply projects</p> <p>3. PLGU undertakes water quality tests of water sources prior to funding allocation</p>   | <p>Train LGU and WSPs on WQM</p> <p>Purchase of water quality testing kits</p> <p>Conduct of regular WQM</p> |
|                     | Level 2               | <p>Daliao: clear with intermittent supply</p> <p>BAWASA: turbid water during rainy days and with ecoli presence</p>  |   |  |
|                     | Level 3               | <u>Tinoto:</u>   |   |  |

| City / Municipality | Type of Water Service | Service Quality Problems  | Actions Being Undertaken   | Assistance Needed Way Forward   |
|---------------------|-----------------------|---|--|---|
|                     |                       | TIWASAI - color yellowish with taste<br><i>Maasim WD</i> : clear, odorless and no taste |  |   |
| <b>Kiamba</b>       | Level 1               | Clear, odorless, no taste<br>In coastal areas: taste salty                              | 1.LGU provides fund support or sought PLGU assistance for water supply projects<br>2. PLGU undertakes water quality tests of water sources prior to funding allocation | Train LGU and WSPs on WQM<br>Purchase of water quality testing kits<br>Conduct of regular WQM |
|                     | Level 2               | Clear, odorless, no taste   |  |   |

## Annex 2I: Summary of Key Strengths, Gaps (Issues and Challenges), Ongoing Efforts and Assistance Needed; Water Districts / LGU-Run WSPs by Project Site

### A. Palawan

| Subject   | Presence by WD / LGU-run WSP (Check) |                           |                       |                                       |
|---|--------------------------------------|---------------------------|-----------------------|---------------------------------------|
|   | Puerto Princesa City Water District  | Dumaran Waterworks System | Taytay Water District | Taytay Water Management System Office |
| <b>Strength</b>   |                                      |                           |                       |                                       |
| Personnel expertise to implement water system improvements (e.g. filtration and treatment facilities)                                       | √                                    | √                         |                       |                                       |
| Automated software for billing and collection   | √                                    |                           |                       |                                       |
| Technical expertise to expand water service coverage  | √                                    | √                         |                       |                                       |
| Regular monitoring of water system (water quality, leakages, etc.)  | √                                    |                           | √                     |                                       |
| ISO Certified WSP indicating compliance to international standards and ability to deliver services to customers effectively and efficiently | √                                    |                           |                       |                                       |
| Low NRW due to implementation of NRW reduction program (e.g. leak detection, upgrading of equipment, and adjustment in billing cycle)       | √                                    |                           |                       |                                       |
| <b>Issues / Gaps</b>  |                                      |                           |                       |                                       |
| Non-issuance of water bill which leads to high NRW due to startup operations of water system project  |                                      | √                         |                       |                                       |
| Inadequate source of water during summer which compels the WSP to find solutions  | √                                    | √                         | √                     | √                                     |
| Limited coverage of water service in distant barangays due to high project cost   | √                                    | √                         | √                     | √                                     |
| Billing and collection not yet automated or still handled manually  |                                      | √                         | √                     | √                                     |
| No septage management program   |                                      | √                         | √                     | √                                     |
| Absence of wastewater treatment and disposal  | √                                    | √                         | √                     | √                                     |



| Subject   | Presence by WD / LGU-run WSP (Check) |                           |                       |                                       |
|---|--------------------------------------|---------------------------|-----------------------|---------------------------------------|
|   | Puerto Princesa City Water District  | Dumaran Waterworks System | Taytay Water District | Taytay Water Management System Office |
| Expansion of roads which may cause relocation of existing pipes   |                                      |                           | √                     |                                       |
| Inadequate power source for the existing pump station leading to intermittent service hours   |                                      | √                         |                       |                                       |
| Water quality issues (e.g., turbidity) arising from lack of appropriate equipment and operating procedures  |                                      |                           |                       | √                                     |
| Delay in the implementation of septage management program due to delay in construction of sanitation facility and due to unsigned MOA designating PPCWD as collecting and billing agent for septage fee | √                                    |                           |                       |                                       |
| Lack of service vehicle for operations mobility   |                                      | √                         | √                     | √                                     |
| <b>Effort / Measure Being Undertaken</b>  |                                      |                           |                       |                                       |
| Setting-up of automated water billing   | √                                    |                           |                       |                                       |
| Investigation of new water sources (e.g. hydraulic studies)   |                                      | √                         | √                     | √                                     |
| Annual monitoring and evaluation of water quality   | √                                    |                           | √                     |                                       |
| Source development to augment existing water supply   | √                                    | √                         |                       |                                       |
| <b>Assistance Needed</b>  |                                      |                           |                       |                                       |
| Provide STTA to identify and investigate potential water sources with WSP operations personnel  |                                      | √                         | √                     | √                                     |
| Train WSP personnel on the drafting of Terms of Reference for the preparation of feasibility study (FS) on septage management program   |                                      | √                         | √                     | √                                     |
| Train WSP operations personnel on NRW reduction program to strengthen their capacity to prevent water losses  |                                      | √                         | √                     | √                                     |
| Training on Inventory Management and Asset Management for efficient use of equipment and materials  | √                                    | √                         | √                     | √                                     |
| Training on Management Information System (MIS) to gather data from multiple online systems, analyze the  |                                      | √                         | √                     | √                                     |

| Subject  | Presence by WD / LGU-run WSP (Check) |                           |                       |                                       |
|--|--------------------------------------|---------------------------|-----------------------|---------------------------------------|
|  | Puerto Princesa City Water District  | Dumaran Waterworks System | Taytay Water District | Taytay Water Management System Office |
| information, and report data to aid in WSP management decision-making. |                                      |                           |                       |                                       |
| Business Planning training   | √                                    | √                         | √                     | √                                     |
| Procurement of software for billing and collection                     |                                      | √                         | √                     | √                                     |
| Improvement of water treatment facility                                |                                      | √                         |                       | √                                     |
| Training on water supply and operations management                     |                                      | √                         |                       | √                                     |

Note: The check (√) indicates that respondents emphasized this point. A lack of check does not imply that the situation/response is completely absent (same with Tables B and C)

## B. Negros Occidental

| Subject   | Presence by WD / LGU-run WSP (Check) |              |            |           |                 |                         |  |           |
|---|--------------------------------------|--------------|------------|-----------|-----------------|-------------------------|--|-----------|
|   | Bacolod City WD                      | Talisay City | Silay City | Bago City | San Carlos City | Municipality of Isabela | Municipality of Don Salvador Benedicto | Murcia WD |
| <b>Strengths</b>                                    |                                      |              |            |           |                 |                         |  |           |
| Competent, hardworking, qualified workforce         | √                                    | √            | √          | √         |                 |                         |  | √         |
| Setting of Performance Targets                      | √                                    | √            | √          | √         | √               | √                       | √                                      | √         |
| Conform to Customer Service Standards               | √                                    | √            | √          |           |                 |                         |  | √         |
| Public-Private Partnership/ Joint Venture company   | √                                    |              |            | √         |                 |                         |  |           |
| Strategic Business Planning                         | √                                    | √            | √          |           |                 |                         |  | √         |
| ISO Certified                                       | √                                    |              | √          |           |                 |                         |  | √         |
| Plans and Programs are fully supported by the Board | √                                    | √            | √          | √         |                 |                         |  | √         |
| <b>Issues / Gaps</b>                                |                                      |              |            |           |                 |                         |  |           |
| Human Resources Issues                              | √                                    | √            | √          | √         |                 |                         |  | √         |
| Lack of KPIs to measure its performance             |                                      |              |            |           | √               | √                       | √                                      |           |
| High NRW  | √                                    | √            |            |           |                 |                         |  | √         |
| Water Supply and Quality problems                   | √                                    | √            | √          | √         | √               | √                       | √                                      | √         |

| Subject  | Presence by WD / LGU-run WSP (Check) |              |            |           |                 |                         |  |           |
|--|--------------------------------------|--------------|------------|-----------|-----------------|-------------------------|--|-----------|
|  | Bacolod City WD                      | Talisay City | Silay City | Bago City | San Carlos City | Municipality of Isabela | Municipality of Don Salvador Benedicto | Murcia WD |
| Poor Implementation of Internal regulation                                   | √                                    | √            |            |           |                 |                         |  |           |
| Computerization - Billing, Collection & Accounting system                    |                                      | √            |            |           |                 |                         |  | √         |
| <b>Effort / Measure Being Undertaken</b>                                     |                                      |              |            |           |                 |                         |  |           |
| Potential Public-Private Partnership/ Joint Venture company                  |                                      |              |            | √         |                 |                         |  |           |
| Implement NRW Reduction Program  | √                                    | √            | √          | √         |                 |                         |  | √         |
| Improve Water Facility service Management                                    | √                                    | √            | √          | √         |                 |                         |  | √         |
| Empower Management in the Implementation of the existing Internal regulation | √                                    |              |            |           |                 |                         |  |           |
| <b>Assistance Needed</b>   |                                      |              |            |           |                 |                         |  |           |
| Capacity development on governance, performance benchmarking and operations  |                                      | √            | √          |           | √               | √                       | √                                      | √         |
| Identification of PPAs to increase investments                               |                                      |              |            | √         |                 |                         |  |           |
| Business Planning training   |                                      |              | √          | √         |                 |                         |  |           |

### C. Sarangani and General Santos City

| Subject   | Presence by WD / LGU-run WSP<br>(Check / Tick) |  |                               |                             |
|---|--|--|-------------------------------|-----------------------------|
|   | General Santos<br>City Water<br>District       | Alabel<br>Level III<br>Water<br>System | Malungon<br>Water<br>District | Maasim<br>Water<br>District |
| <b>Strength</b>   |  |  |                               |                             |
| Regular water quality monitoring  | √  |  |                               |                             |
| Inventory of PPEs   | √  | √                                      | √                             | √                           |
| Compliance with BIR rules and regulations, GSIS Act and HDMF circular   | √  | √                                      | √                             |                             |
| Compliance to Gender and Development (GAD) mainstreaming policies per PCW-NEDA-DBM Joint Circular No. 2012-01 | √  | √                                      |                               |                             |
| Customer Service  | √  | √                                      | √                             | √                           |
| IOS Certified   | √  |  |                               |                             |
| Capacitated Board of Directors  | √  | N/A                                    | √                             |                             |
| <b>Issues / Gaps</b>  |  |  |                               |                             |
| Manual billing and collection System  |  | √                                      | √                             | √                           |
| Inadequate number of personnel to perform specific tasks  |  | √                                      | √                             | √                           |
| Low collection efficiency   |  |  |                               | √                           |
| Lack of internal control mechanism  |  |  |                               | √                           |
| Water safety plan   | √  | √                                      | √                             | √                           |
| Capacity to prepare and implement Water safety Plan (WSP)   | √  |  |                               |                             |
| Limited awareness and knowledge on integrating DRRM in water system   | √  | √                                      | √                             | √                           |
| Service area coverage   | √  | √                                      | √                             | √                           |
| <b>Effort / Measure Being Undertaken</b>  |  |  |                               |                             |

| Subject   | Presence by WD / LGU-run WSP<br>(Check / Tick) |  |                               |                             |
|---|--|--|-------------------------------|-----------------------------|
|   | General Santos<br>City Water<br>District       | Alabel<br>Level III<br>Water<br>System | Malungon<br>Water<br>District | Maasim<br>Water<br>District |
| On-going preparation and formulation of Water Safety Plan (WSP) |  | √                                      |                               |                             |
| <b>Assistance Needed</b>  |  |  |                               |                             |
| Development of automated billing and collection system          |  | √                                      |                               |                             |
| Formulate GAD Plan  |  |  | √                             | √                           |
| Capacity building for BOD and WSP management                    |  |  |                               | √                           |
| Preparation of Business Plan                                    | √  | √                                      |                               | √                           |
| CMS Implementation  |  | √                                      |                               |                             |

## Annex 22: Summary of Key Strengths, Gaps (Issues and Challenges), On-going Efforts and Assistance Needed by Various Coordination Mechanisms by Project Site

### A. Palawan

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels                   | Relevance / Function   | Issues / Concerns  | On-going Effort / Measure   | Assistance Needed  |
|---|--|--|---|--|
| <b>Local Level (City or Municipality specific)</b>  |  |  |   |  |
| Management Committee and Technical Working Group for Palawan Flora, Fauna and Watershed Reserve | Management committee for PFFWR has significant role in maintaining the health of watershed and ensuring the adequate water supply of the City. | <input type="checkbox"/> Cooperation between the management and communities (e.g. presence of illegal loggers and occupants)<br><input type="checkbox"/> Conflict of interest between BuCor and ancestral lands.<br><input type="checkbox"/> Encroachment and illegal resource extraction in the watershed | <input type="checkbox"/> Formulation of Management Plan<br><input type="checkbox"/> Conduct training on SEAMS before implementation to ground<br><input type="checkbox"/> Conduct of PASA<br><input type="checkbox"/> Relocate and compensate the occupants with the area<br><input type="checkbox"/> Strengthening the IMC and TWG through training and seminars | <input type="checkbox"/> Formulation of Management Plan<br><input type="checkbox"/> Establishment of PES mechanism<br><input type="checkbox"/> Enforcement of environmental laws |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels                   | Relevance / Function   | Issues / Concerns   | On-going Effort / Measure  | Assistance Needed  |
|---|--|---|--|--|
| Interim Management Committee and Technical Working Group of Cleopatra's Needle Critical Habitat | Ensure the protection of the area and sustain the environmental resources. Rivers, streams, and springs are water sources of IP communities within the area. | <input type="checkbox"/> Cooperation between the management and communities (e.g. presence of illegal loggers and occupants)<br><input type="checkbox"/> Boundary not demarcated<br><input type="checkbox"/> Limited markings / signage | <input type="checkbox"/> Monitoring and patrolling of wildlife enforcer volunteers;<br><input type="checkbox"/> Establishment of marks, patrolling and monitoring in the area; | <input type="checkbox"/> Implementation and enforcement of management plan |
| Lake Manguao Municipal Conservation Area and Ecotourism Management Board (MCAMB)                | Sole authority to manage and develop the Lake Manguao MCA  | <input type="checkbox"/> No assigned personnel for the composition of MCAMB<br><input type="checkbox"/> No meetings conducted upon creation   | <input type="checkbox"/> Updating of management board (personnel and responsibilities)<br><input type="checkbox"/> Formulation of management plan                              | <input type="checkbox"/> Formulation and implementation of management plan |



| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function   | Issues / Concerns   | On-going Effort / Measure  | Assistance Needed   |
|---|--|---|--|---|
| Coron Bay Water Quality Management Area (WQMA) Governing Board                | To protect and improve the water quality of Coron Bay to make these sustainable for the people of the municipality of Coron. | <p><input type="checkbox"/> Coron Bay was designated as WQMA to safeguard its ecosystem qualities against rapid growth of ecotourism activities. However, due to Covid pandemic, tourism in the area has declined.</p> <p><input type="checkbox"/> Residential and commercial developments in the area contribute to pollution of the water body.</p> <p><input type="checkbox"/> Prior to Covid, business establishments discharged wastewater that exceeded the DENR effluent standards</p> | <input type="checkbox"/> Monitoring of wastewater discharges against DENR effluent standards | <input type="checkbox"/> Advocacy campaigns and technical assistance for resorts and establishments to comply with wastewater quality standards |
| <b>Provincial Level</b>   |  |   |  |   |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function  | Issues / Concerns  | On-going Effort / Measure | Assistance Needed   |
|---|---|--|---------------------------|---|
| Palawan Association of Water Districts (PALWD)                                | Association of 4 water districts in Palawan: Culion, Taytay, Puerto Princesa, and Aborlan | <input type="checkbox"/> Covid prevented water districts from having face-to-face meetings and attending training opportunities.<br><input type="checkbox"/> Some small water districts have small budgets and are unable to attend trainings outside Palawan. | Regular meetings          | <input type="checkbox"/> Provide capacity building training for Palawan water districts through online/webinar or blended learning formats. |
| <b>Regional Level</b>   |   |  |                           |   |
| PAMB  |   |  |                           |   |
| Southern Tagalog Association of Water Districts (STAWD)                       | Association of all water districts within CALABARZON and MIMAROPA, including Palawan      | <input type="checkbox"/> Covid prevented water districts from having face-to-face meetings and attending training opportunities.   | Regular meetings          |   |

## B. Negros Occidental

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance   | Issues / Concerns  | Assistance Needed   |
|---|---|--|---|
| <b>Local Level (City or Municipality specific)</b>                            |   |  |   |
| Bago City Watershed Management Council  | Manage the Environmental Protection Fund, approve the annual work and financial plan for the use of the fund, approve proposals for the use of the fund | Fund not fully utilized by People's Organizations located within the watershed | Project proposal writing for People's Organizations located within the watershed in order to access funding for relevant projects |
| <b>Watershed Level</b>  |   |  |   |
| Bago River Watershed Management Council                                       | Policies for watershed management   | Needs to be reactivated, strengthened  | Needs to convene secretariat (c/o DENR)   |
| TWG for Malogo Watershed  | Policies for watershed management   | Needs to be organized  | Needs to convene secretariat (c/o DENR)   |
| <b>Provincial Level</b>   |   |  |   |
| LGU Watershed Conservation Plan   |   | Needs to organize planning team at the LGU level; needs EO (according to PEMO) | LGU to identify members of planning team  |
| <b>Regional Level</b>   |   |  |   |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance  | Issues / Concerns   | Assistance Needed |
|---|--|---|-------------------|
| Protected Area Management Board (of Northern Negros Natural Park)             | Decide matters related to planning, peripheral protection, and general administration of the subject site. | None; conducts regular meetings to address concerns/ issues |                   |

### C. Sarangani & General Santos City

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function  | Issues / Concerns | On-going Effort / Measure | Assistance Needed |
|---|---|-------------------|---------------------------|-------------------|
| <b>Local Level (City or Municipality specific)</b>                            |   |                   |                           |                   |
| Municipal Integrated Water, Sanitation and Hygiene (iWASH) Council            | <ul style="list-style-type: none"> <li>- To formulate the Municipal Water Supply, Sewerage, Sanitation Sector Plan (MW4SP) of the municipality;</li> <li>- Facilitate the timely completion of programs/projects/activities and accomplish reports vis a vis targets set on iWASH Program;</li> <li>- Provide the necessary/timely information and data and technical assistance for program implementation of MW4SP;</li> <li>- Coordinate with various concerned government agencies at the local level to ensure effective program implementation</li> </ul> |                   |                           |                   |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function   | Issues / Concerns | On-going Effort / Measure | Assistance Needed |
|---|--|-------------------|---------------------------|-------------------|
|   | MW4SP; and<br>- Hold meeting(s) as necessary to update/coordinate needed reports.  |                   |                           |                   |
| Malungon Water Council  | <ul style="list-style-type: none"> <li>- Formulate policies for its development which shall cover its multi-use, storage, control, conservation and regulations for the exploitation and optimum utilization of water resources in the municipality;</li> <li>- Ensure policy coordination for the water supply, sewerage and sanitation; resource regulation for sustainability and ecological protection, and economic regulation for revenue generation.</li> <li>- Undertake inventories and appraisals of water sources and river basins within the municipality, and develop comprehensive basin-wide plans of storage and control to maximize the conservation and multi-purpose use of the water;</li> <li>- Undertake hydrologic surveys and establish, operate and maintain observation station networks and centralized water resources data center;</li> <li>- Formulate general criteria, methods and standards for water collection, project investigation, planning design and feasibility evaluation, and rules and</li> </ul> |                   |                           |                   |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function   | Issues / Concerns       | On-going Effort / Measure   | Assistance Needed  |
|---|--|-------------------------|---|--|
|   | <p>regulations for the optimum utilization of water resources;</p> <ul style="list-style-type: none"> <li>- Conduct and/or promote special studies and researches with other government agencies on related aspects of water resources development;</li> <li>- Review and recommend appropriate action of water resource development plans and programs of component barangays;</li> <li>- Perform such other relevant function aligned hereon and hold meeting/s as may be necessary to update/ coordinate reports needed.</li> </ul> |                         |   |  |
| <b>Watershed Level</b>  |  |                         |   |  |
| Buayan-Malungon River Basin Management Council                                | <ul style="list-style-type: none"> <li>- Coordinate the formulation, review and approval of management plans, programs and investment proposals that provide strategic directions to improve the bio-geophysical characteristics of the Buayan-Malungon River Basin.</li> <li>- Review and endorse development undertakings/interventions of various proponents within the area and ensure consistency with the Management Plan.</li> </ul>  | The council is inactive | <ul style="list-style-type: none"> <li>- DENR facilitated the drafting of MOA between LGUs within BMRB.</li> <li>- Draft MOA was amended and reduced to MOU pursuant to comments generated from the LGUs pertaining to funding</li> </ul> | Reactivate/reconstitute /strengthen BMRB Management Council. |

| Name of Coordination Mechanism In Place / Institutionalized at Various Levels | Relevance / Function  | Issues / Concerns | On-going Effort / Measure | Assistance Needed |
|---|---|-------------------|---------------------------|-------------------|
| <b>Regional Level</b>   |   |                   |                           |                   |
| Protected Area Management Board   | Decide matters relating to planning, peripheral protection, and general administration of the subject site. |                   |                           |                   |

## Annex 23: Scope of 2019 Funding to the WSS Services by LGU (Key Projects)

| LGUs / WSPs                    | Water Service Projects  | Sanitation Service Projects   |
|--------------------------------|---|---|
| <b>PALAWAN</b>                 |   |   |
| <b>Provincial Government</b>   | Construction of elevated water tank/water treatment facilities / deep well in various hospitals | San Vicente Water System Development with Sewerage and Sewage Treatment Component |
|                                | Water system development projects in various areas  | WaSH Program  |
|                                | Pamantolon water system pipeline extension  |   |
|                                | Construction of water supply system in various barangays of PPC                                 |   |
| <b>Puerto Princesa CLGU</b>    | Construction of barangay artesian well and water pump   | Low cost domestic water treatment   |
|                                | Construction of various water systems in various barangays                                      | Sanitation program  |
| <b>Puerto Princesa City WD</b> | Source of Supply Expenses (Repairs and Maintenance - other property, plant and equipment)       |   |
|                                | Water Treatment Expenses  |   |
|                                | Administrative, General, Maintenance and Financial Expenses                                     |   |
|                                | Water Supply Improvement Project Phase II (Iwahig and Montible)                                 |   |
|                                | Upgrading of Infiltration Galley Water Treatment Plant (5MLD to 18MLD WTP)                      |   |
|                                | Construction of San Rafael Water System Project   |   |
|                                | Macarascas Water System Project   |   |



| <b>LGUs / WSPs</b>  | <b>Water Service Projects</b>  | <b>Sanitation Service Projects</b>                |
|---------------------|--|---|
| <b>Dumaran MLGU</b> | Dumaran Municipal Wide Water System Project (Level III)                                    | Environmental sanitation program                  |
|                     | Improvement of water supply system (Level III)   |   |
|                     | Solar Powered Water Purification in Dumaran  |   |
|                     | Construction and improvement of Level II water supply projects in various barangays        |   |
| <b>Taytay MLGU</b>  | Disaster Prevention and Mitigation   | Water sanitation program                          |
|                     | Operations and Maintenance of Water Treatment Plants and Pipelines                         | Excreta management program                        |
|                     | Expansion of Level II water supply in various barangays                                    | Water, Sanitation and Hygiene During emergencies  |
|                     | Health facility enhancement program  | Volunteer Barangay Sanitary Inspectors Management |
|                     | Regular water source testing and disinfection and provision of disinfectants to households |   |

| <b>LGUs / WSPs</b>           | <b>Water Service Projects</b>  | <b>Sanitation Service Projects</b>    |
|------------------------------|--|---------------------------------------|
| <b>NEGROS OCCIDENTAL</b>     |  |                                       |
| <b>Provincial Government</b> | Construction/ Improvement/ Rehab of Water Systems/ Facilities (Potable Water LI & L2)                              | Construction of communal Septic Tanks |
|                              | Drilling of 200mm dia X 80m production well at Ignacio L. Arroyo, Sr. Memorial District Hospital (Mun. of Isabela) |                                       |
|                              | Rehabilitation of Existing Deepwell in Ignacio Arroyo District Hospital (Mun. of Isabela)                          |                                       |
|                              | Improvement of water systems in  |                                       |

| LGUs / WSPs           | Water Service Projects   | Sanitation Service Projects  |
|-----------------------|--|--|
|                       | various hospitals  |  |
| <b>Bago LGU</b>       | Construction/Rehabilitation of LGU-Owned Water Supply System - Construction of Level III Taclaron Water Supply System, Brgy. Malingin  |  |
|                       | Rehabilitation of water systems in various barangays (Levels I and 2)  |  |
|                       | Acquisition of shallow well pumps  |  |
| <b>Isabela LGU</b>    | Const./Rehab. of Level I and Level 2 water supply systems in various barangays   |  |
|                       | Rehab./Improvement of LGU Water System   |  |
| <b>Murcia LGU</b>     | Provision of Potable Water Supply (Amayco) - Level II  | Provision of Sanitary Toilet Program for ZOD   |
|                       | Provision of Potable Water Supply (Damsite/San Miguel) - Level II  |  |
| <b>San Carlos LGU</b> | Water Development Projects in various barangays (L1, L2, & L3)   | Provision of Sanitary Toilet Program for ZOD   |
|                       | Water Supply Services: (Repair & Maintenance of Infra Assets)  |  |
| <b>Silay LGU</b>      | Expansion Program: (1) Distribution Pipeline: (a) 978 linear meter with 150mm diameter pipe laying project from NJL Pumping Station to Tres Fuentes St; (b) 35 linear meter with 250mm diameter Bridge Crossing Pipeline across and along Tres Fuentes St; (2) Transmission Pipeline: 4,615 linear meter with 150mm diameter pipe laying project from Pumping Station Resettlement Site No.1 Brgy.E. Lopez to Panaogao Road, Brgy. IV. | Provision of Toilet bowls and materials for construction, including septic tank per household in various barangays |
|                       | Additional Storage: (i) Continuing   |  |

| <b>LGUs / WSPs</b> | <b>Water Service Projects</b>   | <b>Sanitation Service Projects</b> |
|--------------------|---|------------------------------------|
|                    | construction of 360 cu.m Concrete Ground Reservoir at Bautista Pumping Station, Brgy. Guinhalaran.  |                                    |
|                    | Source Development: (i) Drilling of one (1) unit Production Well with 20 Lps capacity at Brgy. Bagtic and La Alegria Subdivision (ii) Construction of pump house at E.Lopez Site.No.2 Bon-bon |                                    |
| <b>Talisay LGU</b> | Water systems program   |                                    |

| <b>LGUs / WSPs</b>                                  | <b>Water Service Projects</b>  | <b>Sanitation Service Projects</b>  |
|---|--|---|
| <b>SARANGANI PROVINCE &amp; GENERAL SANTOS CITY</b> |  |   |
| <b>Provincial Government</b>                        | Construction of elevated water tank/water treatment facilities / deep well in various hospitals            | San Vicente Water System Development with Sewerage and Sewage Treatment Component |
|   | Water system development projects in various areas   |   |
|   | Pamantolon water system pipeline extension   |   |
| <b>General Santos</b>                               | Construction of water system with distribution pipeline at Purok I Dagonoy North, Barangay Dadiangas North |   |
|   | Construction of water system at Badjao Village, Barangay Siguel  |   |
|   | Construction of 150 cu m Waste Water Treatment Facility, Government Center                                 |   |
| <b>Alabel LGU</b>                                   | Construction of Water System at New Canaan, Alabel   | Septage Management  |
|   | Improvement of Sitio Pait water system, Barangay Alegria   |   |
|   | Construction of Water System at Tinoto Proper to Sitio S'nalang  |   |

| <b>LGUs / WSPs</b>  | <b>Water Service Projects</b>  | <b>Sanitation Service Projects</b>         |
|---------------------|--|--|
|                     | Construction of water system at Sitio Libertad, Maribulan                      |  |
|                     | Improvement of level III water supply system at Datu Kulay, Barangay Poblacion |  |
|                     | Expansion of level III water supply system at Barangay Poblacion               |  |
|                     | Others   |  |
| <b>Maasim LGU</b>   | Construction of Tinoto Water System  | Construction of gendered Sanitary Facility |
|                     | Provision of Water system (reservoir, pipelines) in various sites              | 1 Unit gendered CR                         |
|                     | Provision of energy-efficient potable water supply.                            |  |
|                     | Expansion of Kamanga-Malbang Water System                                      |  |
| <b>Malungon LGU</b> | Water System Development Program   |  |
|                     | O&M works in Malungon WS   |  |
|                     | O&M works in Poblacion water system and reservoir                              |  |
| <b>Kiamba LGU</b>   | Maligang (New Construction at Prks Nap and Balono section)                     |  |
|                     | Gasi (New Construction at Kapanal-Bo. Site, Macao section)                     |  |

**Annex 24. Summary of Key Drivers of Deforestation and Measures Undertaken to Address Deforestation in the Watersheds Covered by Safe Water Project**

| Challenges & Causes of Deforestation and Measures to Address Deforestation                                | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|---|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|   | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     |                  |
|   | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     | Siguel Watershed |
|   |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| <b>Key Issues/Challenges and Causes of Deforestation</b>  |                                |         |                |                  |                                |          |                     |                  |
| Illegal cutting of trees/ timber poaching   | √                              | √       |                |                  |                                |          |                     | √                |
| Limited personnel (Forest Ranger), funds and equipment for regular patrolling, monitoring and enforcement | √                              |         |                |                  |                                |          | √                   |                  |
| Land conversion to sugar cane, banana, mango & agricultural crops   | √                              | √       | √              | √                |                                | √        | √                   |                  |
| Clearing activities for the water system structures build in the area                                     | √                              |         |                |                  |                                |          |                     |                  |
| Lack of alternative income sources  |                                |         |                |                  |                                |          |                     | √                |
| Firewood gathering & Charcoal making  |                                | √       | √              | √                | √                              | √        | √                   | √                |
| Slash and burn farming/ Kaingin making  | √                              | √       | √              | √                |                                |          | √                   | √                |
| Migration to upland areas/ encroachment   |                                |         |                |                  | √                              | √        | √                   |                  |
| Improper farming practices  |                                |         |                |                  | √                              | √        |                     |                  |

| Challenges & Causes of Deforestation and Measures to Address Deforestation  | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|---|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|   | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     | Siguel Watershed |
|   | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     |                  |
|   |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| River bank & gully erosion  |                                |         |                |                  |                                | √        |                     |                  |
| Quarrying   | √                              | √       |                |                  |                                |          |                     |                  |
| CALT covered by private land titles;<br>Non-demarcation of protection areas |                                |         |                |                  |                                |          | √                   |                  |
| Open-access forest land   |                                |         |                |                  |                                |          | √                   |                  |
| Unplanned settlements   |                                |         |                |                  |                                |          | √                   |                  |
| FLGLA/FLGMA- covered production forests;                                    |                                |         |                |                  |                                |          | √                   |                  |
| <b>Measures Undertaken to Address Deforestation</b>                         |                                |         |                |                  |                                |          |                     |                  |
| Implementation of LAWIN system  | √                              | √       | √              | √                |                                |          |                     |                  |
| Patrolling and threat monitoring  | √                              |         |                |                  |                                |          |                     |                  |
| Establishment of six (6) Monitoring and Information Center Station          | √                              |         |                |                  |                                |          |                     |                  |
| Provide additional Forest Rangers   | √                              |         | √              |                  |                                |          |                     |                  |

| Challenges & Causes of Deforestation and Measures to Address Deforestation   | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|--|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|  | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     | Siguel Watershed |
|  | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     |                  |
|  |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| Conduct paralegal and Lawin System training to the local/community enforcers | √                              |         |                |                  |                                |          |                     |                  |
| Reforestation/Agroforestry including use of indigenous species               | √                              | √       | √              | √                | √                              | √        |                     | √                |
| Information, education and communication campaign                            |                                | √       |                |                  | √                              |          |                     |                  |
| Nursery Establishment for native tree species and herbal plants              | √                              | √       |                |                  |                                |          |                     | √                |
| Strengthening of CBFM POs & upland cooperatives                              |                                | √       |                |                  |                                |          |                     | √                |
| Formulation of Watershed Management Plan                                     |                                | √       | √              |                  |                                |          | √                   |                  |
| Construction of water impounding system                                      |                                | √       |                |                  |                                |          |                     |                  |
| Zoning into strict protection & multiple use zones                           |                                |         | √              | √                |                                |          |                     |                  |
| Formulation/ implementation of Environment code                              |                                |         |                |                  | √                              |          | √                   |                  |

| Challenges & Causes of Deforestation and Measures to Address Deforestation | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|--|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|  | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     |                  |
|  | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     | Siguel Watershed |
|  |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| Ordinance requiring citizens & marrying couples to plant trees;            |                                |         |                |                  | √                              | √        |                     |                  |
| River bank planting with bamboo  |                                |         |                |                  | √                              | √        |                     |                  |
| Implementation of SWC measures & other appropriate upland technologies     |                                |         |                |                  | √                              | √        |                     | √                |
| FLUP formulation, integration in CLUP, monitoring & IEC                    |                                |         |                |                  | √                              |          | √                   | √                |
| Adopt a river through MOU between MLGU/NGO and some barangays              |                                |         |                |                  |                                | √        |                     |                  |
| Formation of Multipartite Environmental Monitoring Team for ECC compliance |                                |         |                |                  |                                | √        |                     |                  |
| Establishment of protection and communal forests                           |                                |         |                |                  |                                |          |                     | √                |
| Sub-allocation of forestlands  |                                |         |                |                  |                                |          |                     | √                |
| Formation of FLUP steering committee & capacity strengthening of MENRO     |                                |         |                |                  |                                |          |                     | √                |
| Establishment of Community-Based Ecotourism Centers                        |                                |         |                |                  |                                |          |                     | √                |



| Challenges & Causes of Deforestation and Measures to Address Deforestation                        | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|---|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|   | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     |                  |
|   | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     | Siguel Watershed |
|   |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| Resource mobilization & financial support to tenure holders                                       |                                |         |                |                  |                                |          |                     | √                |
| <b>Further Measures Needed</b>  |                                |         |                |                  |                                |          |                     |                  |
| Formulation of LGU forest conservation area plan  | √                              |         | √              | √                |                                |          |                     |                  |
| Organize barangay/municipal implementation teams of forest conservation plan                      |                                |         | √              | √                |                                |          |                     |                  |
| Enact local policies to support implementation of conservation plan                               |                                |         | √              | √                |                                |          |                     | √                |
| Sustain funds on forest protection & rehabilitation   |                                |         | √              |                  |                                | √        |                     |                  |
| Limit infrastructure expansion in the uplands.  |                                |         |                | √                | √                              |          |                     |                  |
| Formation/Deputation of barangay Bantay Kalikasan volunteers & forest protection teams/ committee |                                |         |                |                  | √                              | √        |                     |                  |
| LGU involvement in Survey, Mapping and Planning activity under the DENR NGP                       |                                |         |                |                  | √                              | √        |                     |                  |

| Challenges & Causes of Deforestation and Measures to Address Deforestation | Provinces/ LGUs and Watersheds |         |                |                  |                                |          |                     |                  |
|--|--------------------------------|---------|----------------|------------------|--------------------------------|----------|---------------------|------------------|
|  | Palawan                        |         | Negros Occ.    |                  | Sarangani and Gen. Santos City |          |                     |                  |
|  | Taytay                         | Dumaran | Bago watershed | Malogo watershed | Buayan- Malungon RB            |          |                     | Siguel Watershed |
|  |                                |         |                |                  | Alabel                         | Malungon | General Santos City |                  |
| Enhance/Implement the Municipal Environment Code                           |                                |         |                |                  |                                | √        | √                   |                  |
| ADSDPP formulation   |                                |         |                |                  |                                | √        |                     |                  |
| Monitoring of areas entered into contract-growing with fruit companies     |                                |         |                |                  |                                | √        |                     |                  |
| Ensuring that PCA-sourced coconut seedlings are planted in A&D areas       |                                |         |                |                  |                                | √        |                     |                  |
| Implementation of ISWM   |                                |         |                |                  |                                |          | √                   |                  |
| Adoption of CBFM   |                                |         |                |                  |                                |          | √                   |                  |
| Ecotourism development   |                                |         |                |                  |                                |          | √                   |                  |
| Shifting of cash crops to high value crops                                 |                                |         |                |                  |                                |          | √                   |                  |
| Revisit FLUP implementation  |                                |         |                |                  |                                |          |                     | √                |
| Strict implementation of Co-management of Forest and Forest Lands;         |                                |         |                |                  |                                |          |                     | √                |

## Annex 25. Beneficiaries of Livelihood Activities by Watershed

### Palawan

| Watershed    | Municipality / City | Beneficiaries by Livelihood Activity (Number of People) |                          |  |                             |            |             | TOTAL<br>(No Double Count) |
|--------------|---------------------|---|--------------------------|--|-----------------------------|------------|-------------|----------------------------|
|              |                     | Agroforestry  | Gleaning (Rattan, Honey) | Organic farming (e.g. vegetables, peanuts, corn) | Fruit trees farming (Mango) | Restaurant | Handicrafts |                            |
| Irawan       | Puerto Princesa     | 920   | 800                      | 176  | 200                         | 120        | 200         | 2,416                      |
| Montible     |                     |   |                          |  | 2,944                       |            |             | 80                         |
| <b>TOTAL</b> |                     | <b>920</b>  | <b>800</b>               | <b>3,120</b>                                     | <b>200</b>                  | <b>120</b> | <b>280</b>  | <b>5,440</b>               |

### Negros Occidental

| Watershed                   | Municipality / City    | Beneficiaries by Livelihood Activity (Number of People) |       |           |           |               |                       |                |        |
|-----------------------------|------------------------|---|-------|-----------|-----------|---------------|-----------------------|----------------|--------|
|                             |                        | Sugarcane   | Rice  | Livestock | Pineapple | Agro-forestry | Cut flower Production | Micro-business | Others |
| <b>Bago River Watershed</b> | Bago City              | 395   | 395   | 395       | -         | -             | -                     | -              | -      |
|                             | Don Salvador Benedicto | 3,035   | 3,035 | 1,230     | 620       | -             | -                     | 300            | 1,635  |
|                             | Murcia                 | 700   | 490   | 150       | -         | 315           | 105                   | -              | -      |

| Watershed               | Municipality / City | Beneficiaries by Livelihood Activity (Number of People) |              |              |            |               |                       |                |              |
|-------------------------|---------------------|---|--------------|--------------|------------|---------------|-----------------------|----------------|--------------|
|                         |                     | Sugarcane   | Rice         | Livestock    | Pineapple  | Agro-forestry | Cut flower Production | Micro-business | Others       |
|                         | La Carlota City     | 200   | 200          | -            | -          | -             | -                     | -              | 200          |
|                         | San Carlos City     | 595   | 595          | -            | -          | -             | -                     | -              | 130          |
| <b>Malogo Watershed</b> | EB Magalona         | 375   | -            | -            | -          | -             | -                     | -              | -            |
|                         | Calatrava           | 1,180   | 130          | 130          | -          | -             | -                     | -              | 250          |
|                         | Silay City          | 1,485   | 1,485        | -            | -          | -             | -                     | 515            | -            |
|                         | Talisay City        | 520   | -            | -            | -          | 520           | -                     | -              | 520          |
| <b>Others</b>           | Isabela             | 565   | -            | -            | -          | -             | -                     | -              | 565          |
| <b>TOTAL</b>            |                     | <b>9,050</b>  | <b>6,330</b> | <b>1,905</b> | <b>620</b> | <b>835</b>    | <b>105</b>            | <b>815</b>     | <b>3,300</b> |

#### Sarangani & General Santos City

| Municipality / City | Beneficiaries by Livelihood Activity (Number of People) |                |        |       |        |        |
|---------------------|---|----------------|--------|-------|--------|--------|
|                     | Agroforestry  | Bamboo Farming | Timber | Abaca | Coffee | Others |
| Malungon            | 2,100   | 1,705          | 550    |       | 700    | 2,460  |
| Alabel              | 770   | 140            |        | 275   | 755    | 835    |

| Municipality / City | Beneficiaries by Livelihood Activity (Number of People) |                |              |              |              |              |
|---------------------|---|----------------|--------------|--------------|--------------|--------------|
|                     | Agroforestry  | Bamboo Farming | Timber       | Abaca        | Coffee       | Others       |
| General Santos City | 1,500   | 350            | 1,500        |              | 860          | 0            |
| Maasim              |   |                |              | 665          | 515          | 515          |
| Kiamba              |   |                |              | 1,850        |              |              |
| General Santos City |   |                |              |              |              |              |
| <b>0</b>            | <b>4,370</b>  | <b>2,195</b>   | <b>2,050</b> | <b>2,790</b> | <b>2,830</b> | <b>3,810</b> |

## Annex 26. Range of Benefits of Livelihood Activities

### Palawan

| Type of Livelihood Activity (Top 5)              | Description of Benefits |   |                       |   |   |                          |
|--|-------------------------|---|-----------------------|---|---|--------------------------|
|  | Additional HH Income    | Strengthen knowledge from training/seminars | Nursery establishment | Strengthen linkages to different sectors (market connections) | Access to PO equipment (e.g. farming tools, center) | Free access to farm land |
| Agroforestry                                     | √                       | √   | √                     | √   |   |                          |
| Gleaning (Rattan, Honey)                         | √                       |   |                       |   |   |                          |
| Organic farming (e.g. vegetables, peanuts, corn) | √                       | √   |                       | √   |   | √                        |
| Fruit trees farming (Mango)                      | √                       |   |                       | √   |   |                          |
| Restaurant                                       | √                       |   |                       |   |   |                          |

### Negros Occidental

| Type of Livelihood Activity (Top 5) | Description of Benefits |                   |                                |                       |  |                   |                      |                               |
|-------------------------------------|-------------------------|-------------------|--------------------------------|-----------------------|--|-------------------|----------------------|-------------------------------|
|                                     | Access to Credit        | Linkage to Market | Access to Insurance (ex. PCIC) | Employment Generation | Access to Capacity Building Activities | Savings Availment | Additional HH Income | Support from Government/ NGOs |
| Sugarcane Farming                   | √                       | √                 | √                              | √                     | √                                      | √                 | √                    | √                             |
| Rice Farming                        | √                       | √                 | √                              | √                     | √                                      | √                 | √                    | √                             |
| Pineapple Farming                   | √                       | √                 | √                              | √                     | √                                      | √                 | √                    | √                             |

| Type of Livelihood Activity (Top 5) | Description of Benefits |                   |                                |                       |  |                   |                      |                               |
|-------------------------------------|-------------------------|-------------------|--------------------------------|-----------------------|--|-------------------|----------------------|-------------------------------|
|                                     | Access to Credit        | Linkage to Market | Access to Insurance (ex. PCIC) | Employment Generation | Access to Capacity Building Activities | Savings Availment | Additional HH Income | Support from Government/ NGOs |
| Livestock                           | √                       | √                 |                                |                       | √                                      | √                 | √                    | √                             |
| Agro-forestry                       | √                       |                   |                                | √                     | √                                      | √                 | √                    | √                             |

### Sarangani & General Santos City

| Type of Livelihood Activity (Top 5) | Description of Benefits |                  |                 |                                   |                           |
|-------------------------------------|-------------------------|------------------|-----------------|-----------------------------------|---------------------------|
|                                     | Additional HH Income    | Access to Credit | Skills Training | Awareness to watershed management | River bank Rehabilitation |
| Agroforestry                        | √                       |                  | √               | √                                 |                           |
| Bamboo Farming                      | √                       |                  | √               | √                                 | √                         |
| Timber                              | √                       |                  | √               | √                                 |                           |
| Abaca                               | √                       | √                | √               | √                                 |                           |
| Coffee                              | √                       | √                | √               | √                                 |                           |
| Others                              | √                       |                  | √               | √                                 |                           |

### Annex 27: Forest land cover and areas under improved watershed management; By Watershed

| Project Site | Watershed / River Basin | Total Forest Land (Public Forest) | Portion Under Improved Watershed Management |                 |
|--------------|-------------------------|-----------------------------------|---|-----------------|
|              |                         |                                   | Area  | % Against Total |
| Palawan      | Irawan                  | 3,679                             |   |                 |
|              | Montible                | 23,302                            |   |                 |
|              | <b>Sub-total</b>        | <b>26,981</b>                     |   |                 |

| Project Site                    | Watershed / River Basin | Total Forest Land (Public Forest) | Portion Under Improved Watershed Management |                 |
|---------------------------------|-------------------------|-----------------------------------|---|-----------------|
|                                 |                         |                                   | Area  | % Against Total |
| Negros Occidental               | Bago                    | 33,878                            | 2,136                                       | 6.3%            |
|                                 | Malogo                  | 11,679                            |   |                 |
|                                 | <b>Sub-total</b>        | <b>45,556</b>                     | <b>2,136</b>                                | <b>4.7%</b>     |
| Sarangani & General Santos City | Buayan - Malungon       | 99,451                            |   |                 |
|                                 | Siguel                  | 23,578                            |   |                 |
|                                 | <b>Sub-total</b>        | <b>123,029</b>                    |   |                 |
| <b>Total</b>                    |                         | <b>195,566</b>                    | <b>2,136</b>                                | <b>1.1%</b>     |



## Annex 28: Status of Watersheds Against Criteria for Improved Watershed Management

| Province          | Municipality / City by Watershed | Criteria (Milestones / Conditions) of Improved Watershed Management   |  |   |   |  |  |   |  |
|-------------------|----------------------------------|---|--|---|---|--|--|---|--|
|                   |                                  | A management plan / operational plan formulated following participatory planning process and based on agreements among watershed stakeholders which maybe further affirmed/adopted through the approval of the LGU Forest Land Use Plan (FLUP) or CLUP with a local ordinance, resolution or other instruments that will legitimize the plan. | The creation of a multi-sectoral management body / committee or technical working group that will coordinate implementation of the management plan/operational plans | The annual approval by the management body of its work plan and budget. This will indicate improved functionality and increased capacity of the management body for sustainable and adaptive natural resource management. | Implementation of specific management plan actions with stakeholder participation and tapping public and private sources of financing support. Such management actions may include enforcement of the zoning plan, site rehabilitation/development, information and behavior change campaigns, Forest protection and law enforcement, and local | Establishment of a sustainable funding source such as payment for ecosystem services and other cost-sharing mechanisms including agreed mechanism for fund disbursement and utilization. | Demonstration of on-the-ground management impacts of improved management and conservation actions such as any one of those identified above. The impacts could be on the biophysical environment and/or the community. | Implementation of an improved monitoring and evaluation system to provide better information for decision-making. This will include the formation and mobilization of participatory M&E teams, periodic reporting to management body on performance using set indicators, and feedback to stakeholders. |  |
| Palawan           | <b>Irawan Watershed</b>          |   |  |   |   |  |  |   |  |
|                   | Puerto Princesa                  |   | √  | √   |   |  |  |   |  |
|                   | <b>Montible-Lapu Lapu</b>        |   |  |   |   |  |  |   |  |
|                   | Puerto Princesa                  | √   |  |   |   |  |  |   |  |
| Negros Occidental | <b>Bago Watershed</b>            |   |  |   |   |  |  |   |  |
|                   | Bago City                        | √   | √  |   | √   | √  |  |   |  |
|                   | Calatrava                        | √   | √  |   | √   |  |  |   |  |
|                   | La Carlota City                  | √   | √  |   | √   |  |  |   |  |
|                   | Murcia                           | √   | √  |   | √   |  |  |   |  |
|                   | Salvador Benedicto               | √   | √  |   | √   |  |  |   |  |
|                   | Silay City                       | √   | √  |   | √   |  |  |   |  |
|                   | Talisay City                     | √   | √  |   | √   |  |  |   |  |
|                   | San Carlos City                  | √   | √  |   | √   | √  |  |   |  |
|                   | <b>Maologo Watershed</b>         |   |  |   |   |  |  |   |  |
|                   | Cadiz City                       |   |  |   | √   |  |  |   |  |
|                   | Calatrava                        |   |  |   | √   |  |  |   |  |
|                   | E.B Magalona                     |   |  |   | √   |  |  |   |  |
|                   | Murcia                           |   |  |   | √   |  |  |   |  |
|                   | Salvador Benedicto               |   |  |   | √   |  |  |   |  |
|                   | Silay City                       |   |  |   | √   |  |  |   |  |
|                   | Talisay City                     |   |  |   | √   |  |  |   |  |
|                   | Victorias City                   |   |  |   | √   |  |  |   |  |
|                   | Sarangani & General Santos City  | <b>BMRB</b>   |  |   |   |  |  |   |  |
|                   |                                  | Malungon  | √  |   |   | √  |  |   |  |
| Alabel            |                                  | √   |  |   | √   |  |  |   |  |
| General Santos    |                                  | √   |  |   | √   |  |  |   |  |

## Annex 29: Summary of Issues, Efforts Being Undertaken and Assistance Needed in The Management of the Forest Resources

### Key Issues by Watershed

| Issues / Concerns   | Presence of Issues / Concerns by Watershed |           |        |                    |      |                  |
|---|--|-----------|--------|--------------------|------|------------------|
|   | Bago RW                                    | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Prone to Flooding and land slide  | √  | √         |        |                    |      |                  |
| Illegal quarry/ small scale quarry  | √  | √         |        |                    |      |                  |
| Illegal cutting of trees  |  |           | √      | √                  |      |                  |
| lack of access road (farm to market road)   | √  |           |        |                    |      |                  |
| Charcoal production   | √  | √         | √      | √                  | √    | √                |
| Not all Brgys/ sitios/purok within Watershed area have domestic water supply system                             | √  |           |        |                    |      |                  |
| Identifying the Protection & Conservation area (PCA) & Production area based on the policy designated land uses | √  | √         |        |                    |      |                  |
| household is within prone area (flooding & landslide)   | √  | √         |        |                    |      |                  |

| Issues / Concerns   | Presence of Issues / Concerns by Watershed |           |        |                    |      |                  |
|---|--|-----------|--------|--------------------|------|------------------|
|   | Bago RW                                    | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Conflicts between boundaries of watershed, BuCor, and ancestral domains |  |           | √      | √                  |      |                  |
| Illegal occupancy within the watershed area                             |  |           | √      | √                  |      |                  |
| Inappropriate upland farming practices                                  |  |           |        |                    | √    | √                |
| Conversion of forest land for agricultural cultivation                  |  |           |        |                    | √    | √                |

#### Efforts Being Undertaken by Watershed

| Efforts / Measures                                | Presence of Efforts / Measures by Watershed |           |        |                    |      |                  |
|---|---|-----------|--------|--------------------|------|------------------|
|   | Bago RW                                     | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Creation of planning team (TWG)                   | √   | √         |        |                    |      |                  |
| Primary and secondary data/ information gathering | √   | √         |        |                    |      |                  |
| Draft Watershed Plan revision                     | √   |           |        |                    |      |                  |
| Existing-DAR CLOA (based on Shapefile)            | √   | √         |        |                    |      |                  |

| Efforts / Measures  | Presence of Efforts / Measures by Watershed |           |        |                    |      |                  |
|---|---|-----------|--------|--------------------|------|------------------|
|   | Bago RW                                     | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Identification and assessment of areas for eco-tourism activities   | ✓   | ✓         |        |                    |      |                  |
| Develop and promote unique areas for eco-tourism purposes   | ✓   | ✓         |        |                    |      |                  |
| Reforestation activities within the watershed area (e.g. NGP, tree planting, tree replacement planting program) | ✓   | ✓         | ✓      | ✓                  | ✓    | ✓                |
| Monitoring and foot patrolling within the area / Bantay Gubat   | ✓   | ✓         | ✓      | ✓                  | ✓    | ✓                |
| Establishment of monitoring and forest protection checkpoints   |   |           | ✓      | ✓                  |      |                  |
| Establishment of nurseries and propagation of native forest tree species for reforestation activities           |   |           | ✓      | ✓                  |      |                  |
| Delineation and demarcation of PFFWR boundary   |   |           | ✓      | ✓                  |      |                  |
| Inventory of forest tree species and other wildlife to monitor the survival rate of the planted trees           |   |           | ✓      | ✓                  |      |                  |

| Efforts / Measures  | Presence of Efforts / Measures by Watershed |           |        |                    |      |                  |
|---|---|-----------|--------|--------------------|------|------------------|
|   | Bago RW                                     | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Establishment of natural bird feeding stations  |   |           | ✓      | ✓                  |      |                  |
| Municipal ordinance requiring citizens to plant trees                                   |   |           |        |                    | ✓    | ✓                |
| Implementation of the ENRM IEC and Advocacy   |   |           |        |                    | ✓    | ✓                |
| Formation of Barangay Forest Protection Committee                                       |   |           |        |                    | ✓    | ✓                |
| Adopt a River Program by planting bamboo along riverbanks                               |   |           |        |                    | ✓    | ✓                |
| Formation of Multipartite Environmental Monitoring Team (for monitoring of ECC holders) |   |           |        |                    | ✓    | ✓                |
| Nursery programs  |   |           |        |                    | ✓    | ✓                |
| Integrating FLUP in the CLUP: Watershed Management Plan.                                |   |           |        |                    | ✓    | ✓                |

**Further Assistance Needed by Watershed**

| Assistance Needed   | Assistance Needed by Watershed |           |        |                    |      |                  |
|---|--------------------------------|-----------|--------|--------------------|------|------------------|
|   | Bago RW                        | Malogo RW | Irawan | Montible-Lapu Lapu | BMRB | Siguel Watershed |
| Livelihood assistance   | ✓                              | ✓         |        |                    |      |                  |
| Formulation of Management Plan  |                                |           | ✓      | ✓                  |      |                  |
| Strengthen the law enforcement and forest/watershed protection  |                                |           | ✓      | ✓                  |      |                  |
| Development of livelihoods for IP and women's association   |                                |           | ✓      | ✓                  |      |                  |
| Compliance to Terms and Conditions of PCSD SEP Clearance, and DENR (Green Buffer Zoning and Social Development Plan and IEC Plan) |                                |           | ✓      | ✓                  |      |                  |
| Capacity building of TWGs and various offices on forest management and protection   | ✓                              | ✓         |        |                    | ✓    | ✓                |
| Formulation of Integrated Watershed Management Plan   |                                |           |        |                    |      | ✓                |

## Annex 30: Policies or Plans Pertaining to WSS Service Provision by Province

### Palawan

| Level/ Lead Entity Involved                        | Title of Policy or Plan | Year Developed / Issued | Objective / Description/Scope   | Implementation Issues / Challenges   | Assistance Needed  | Remarks |
|--|-------------------------|-------------------------|---|--|--|---------|
| <b>Local Level (City or Municipality specific)</b> | Five-year Business Plan | 2017                    | The 5-year Business Plan of PPCWD aims to efficiently serve the consumers through improved delivery of water service, effective water supply and sewerage/septage management, increased service connection, sustainable water supply, effective human resource management and good management team. | PPCWD is currently updating its Business Plan through the assistance of USAID SURGE Project. | Assist PPCWD in implementing the Business Plan (BP) and the Performance Improvement Plan under the BP. |         |

| Level/ Lead Entity Involved | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope   | Implementation Issues / Challenges                      | Assistance Needed  | Remarks  |
|-----------------------------|---|-------------------------|---|---|--|--|
|                             | Municipal Water Supply, Sewerage and Sanitation Sector Plan (MW4SP)   | 2018                    | The MW4SP aims to assist LGUs, WSPs, and communities in the management of water supply, sewerage and sanitation, as well as to ensure the community development and gender responsive. The plan also supports SALINTUBIG project. | Limited financing to implement sanitation program       | Implementation of MW4SP and assistance to LGU in accessing financing to implement its sanitation program |  |
|                             | Dumaran Waterworks Ordinance<br><br>Ordinance No. 2020-647 "An Ordinance establishing the Dumaran Waterworks Unit (DWU) in the Municipality of Dumaran Creating the Personnel Complement, Prescribing the Water Fees, Adopting Rules and regulations and Appropriating Funds Thereof" | 2020                    | To compose a special unit of skilled personnel to operate, manage, sustain the water system of Dumaran to ensure the production and delivery of safe and clean water to the public  | Disbursement of funds for Salintubig project is delayed | Technical training for the water system management personnel   | Ongoing creation of water system management and operations personnel |



| Level/ Lead Entity Involved | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges  | Assistance Needed  | Remarks |
|-----------------------------|---|-------------------------|--|---|--|---------|
|                             | Ordinance No. 2004-092 "An Ordinance Enforcing Total Protection and Conservation of Philippine Cockatoo/Katala and other Endemic and Endangered Wildlife within the Environmentally and Ecologically Protected Area Covering Encompassing the Barangays of Sto. Tomas, Poblacion and San Juan, Municipality of Dumaran and Imposing Penalties in Violations Thereof and Providing Funds Therefor" | 2004                    | Enforcing the protection and conservation of Philippine Cockatoo/Katala and other endemic and endangered wildlife within the environmentally and ecologically protected area           | There are some development of water system that affect the declared conservation site | Provision of livelihood for the community  |         |
|                             | Resolution No. 154-2020 "A resolution Adopting and approving the <b>Integrated Water, Sanitation and Hygiene (iWaSH) Plan</b> of the Municipality of Taytay, Palawan"   | 2020                    | The plan would provide the different concerns, strategies, and interventions that the municipality should consider to ensure the adequate and equitable access to water and sanitation | Sanitation problems for residents leaving near the coastal areas and in islands       | Training on WASH and WASH financing for LGU personnel, especially those involved in implementation of iWASH Plan; Review of iWASH Plan |         |

| Level/ Lead Entity Involved | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges     | Assistance Needed  | Remarks |
|-----------------------------|---|-------------------------|--|--|--|---------|
|                             | Health and Sanitation Code of Taytay, Palawan                               | 2002                    | Provide legal framework to municipality in pursuing its health and sanitation policies   | Plan is outdated                       | Review and updating of local Health and Sanitation Code  |         |
|                             | Puerto Princesa City Ordinance No. 737: Septage Management System Ordinance | 2016                    | The Ordinance applies to all building, facilities and structures whether public or private, residential or commercial, industrial, institutional, recreational, proposed/planned, or any activity/endeavor that shall use water and produce wastewater with permanent or prolonged effects to environment within the territorial jurisdiction of Puerto Princesa City. | User's fee is determined back in 2016. | Review of user's fee contained in the Ordinance.<br><br>IEC and public awareness campaign about the provisions of the Ordinance. |         |

| Level/ Lead Entity Involved | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed                      | Remarks                                    |
|-----------------------------|---|-------------------------|--|------------------------------------|--|--|
| <b>Watershed Level</b>      | Ordinance No. 196-2014 "Declaring Lake Manguao at Barangay Poblacion and Barangay Bantulan, Municipality of Taytay, Province of Palawan, as a Municipal Conservation Area and Ecotourism Zone, Thereby regulating Its Use for Ecotourism Development, Scientific Research, Biodiversity Conservation and Sustainable Resource Management and Imposing the Collection of Entrance Fees/User Fees Thereof and for the Purposes" | 2014                    | Lake catchment boundaries is declared as Municipal Conservation Area and Ecotourism Zone that will serve as ecotourism development, science and research area, sustainable resource utilization and management |                                    | Ongoing formulation of management plan | Resolution No. 134/ Ordinance No. 196-2014 |

## Sarangani and General Santos City

| Level/ Lead Entity Involved                        | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|--|---|-------------------------|--|------------------------------------|-------------------|
| <b>Local Level (City or Municipality specific)</b> |   |                         |  |                                    |                   |
| <b>General Santos City</b>                         | EO Order No.21, Series of 2018<br>"An executive order creating a local drinking water quality monitoring committee and its technical working group" | 2018                    | The committee was created to oversee the operations of water systems and the quality of water produced and distributed, and to monitor the implementation of Sanitation Code of the Philippines (PD No 856) and Philippine Clean Water Act (RA no. 9275)                     |                                    |                   |
|  | Ordinance No. 27, series of 2015<br>"General Santos City Rural Waterworks and Sanitation Guidelines"  | 2015                    | To formulate and implement a unifying framework that shall harmonize the work of all engaged stakeholders in the water sector and to ensure that the provision of safe water becomes universal and achieve a sustainable development and sustenance on the said organization | Limited knowledge and capacity     |                   |

| Level/ Lead Entity Involved | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope   | Implementation Issues / Challenges | Assistance Needed |
|-----------------------------|--|-------------------------|---|------------------------------------|-------------------|
|                             | Ordinance No. 53, Series of 2017<br>"The Revised General Santos City Septage Management Ordinance" | 2017                    | To promote and protect the health and welfare of its constituents, especially the poor, by institutionalizing sustained access to improved water and sanitation services.   |                                    |                   |
|                             | Ordinance No. 73, Series of 2018<br>"Environment Code of General Santos City"                      | 2018                    | To integrate environmental laws to the City's developmental policies and bearing social and economic dimensions, based on the paradigm of inter-generational equity; encourage the establishment and operation of institutional mechanisms of transparent and participatory governance; and uphold as imperative and preponderant the universally-accepted tenets of sustainable development, |                                    |                   |

| Level/ Lead Entity Involved               | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|---|--|-------------------------|--|------------------------------------|-------------------|
| <b>General Santos City Water District</b> | Water Safety Plan  | 2016                    | The objectives of Water Safety Plan are to ensure drinking water through good water supply practice, which are:<br>1. To prevent contamination of source waters;<br>2. To treat the water to reduce or remove contamination that could be present to the water;<br>3. The extent necessary to meet the water quality targets; and<br>4. To prevent re-contamination during storage, distribution and handling of drinking water. |                                    |                   |
| <b>Alabel</b>                             | Forest Land Use Plan (2014-2023)                                       | 2013                    |  |                                    |                   |
|   | Alabel Septage Management Ordinance #2008-048 amended by SMO #2010-058 |                         | Established an environmental fee for collecting/ desludging and treatment fee  |                                    |                   |

| Level/ Lead Entity Involved | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|-----------------------------|--|-------------------------|--|------------------------------------|-------------------|
| <b>Maasim MPDO / MHO</b>    | Municipal Water Supply, Sewerage And Sanitation Sector Plan (MW4SP) - Integrated Safe Water, Sanitation And Hygiene (Iwash) Approach   | 2018/<br>2019-2028      | Integrated water supply, sanitation and hygiene  |                                    |                   |
| <b>Maasim MDC</b>           | Resolution no. 2019-06 Adopting and favorably endorsing to SB of Maasim the MW4SP for appropriate action   | May 23,<br>2019         |  |                                    |                   |
| <b>Maasim SB</b>            | SB Resolution 19-15-009 Approving the Municipal Water Supply, Sanitation and Sewerage Plan   | July 8,<br>2019         |  |                                    |                   |
| <b>Maasim</b>               | Executive Order No. 002-2015 series of 2015 entitled "Creating the Municipal Water and Sanitation (WATSAN) Committee for the Implementation of the Sagana at Ligtas na Tubig Para Sa Lahat Program (SALINTUBIG)" |                         | The program was established to provide grant financing and capacity building for the implementation of water supply projects in waterless municipalities; in poorest barangays with high level of waterborne diseases, in resettlement areas and public health centers w/o access to safe and potable water. |                                    |                   |

| Level/ Lead Entity Involved | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|-----------------------------|--|-------------------------|--|------------------------------------|-------------------|
| <b>Maasim</b>               | EO-02-2018-21, S. 2018 - Renaming the WATSAN into Integrated Safe Water Supply, Sanitation and Hygiene (iWASH) Committee |                         |  |                                    |                   |
| <b>MLGU Maasim</b>          | Municipal Water Supply, Sanitation, Sewerage Sector Plan (MW4SP) 2019-2028   | 2019                    | A plan that envisions a long-term change in achieving universal and equitable access to safe and affordable drinking water and in achieving access to adequate and equitable sanitation and hygiene with adequate facilities towards the formation of a livable and socially responsible community |                                    |                   |
| <b>MLGU Malungon</b>        | Municipal Water Supply, Sanitation, Sewerage Sector Plan (MW4SP) 2019-2028   | 2019                    | A plan that envisions a long-term change in achieving universal and equitable access to safe and affordable drinking water and in achieving access to adequate and equitable sanitation and hygiene with adequate facilities towards the formation of a livable and                                |                                    |                   |



| Level/ Lead Entity Involved        | Title of Policy or Plan   | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|------------------------------------|---|-------------------------|--------------------------------|------------------------------------|-------------------|
|                                    |   |                         | socially responsible community |                                    |                   |
| <b>Watershed Level</b>             |   |                         |                                |                                    |                   |
| <b>Buayan-Malungon River Basin</b> | Resolution No. 72 Series of 2013<br>A Resolution supporting the concept of the Creation of the Buayan-Malungon River Basin Management Council dated November 28, 2013 | 2013                    |                                | Needs updating                     |                   |
|                                    | Development of Climate-Responsive Integrated Master Plan for Buayan-Malungon River Basin - Volume II -Main Report (Part 1)  |                         |                                | For adoption and implementation    |                   |
|                                    | Development of Climate-Responsive Integrated Master Plan for Buayan-Malungon River Basin - Volume II -Main Report (Part 2)  |                         |                                |                                    |                   |

| Level/ Lead Entity Involved | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope   | Implementation Issues / Challenges | Assistance Needed |
|-----------------------------|--|-------------------------|---|------------------------------------|-------------------|
|                             | Development of Climate-Responsive Integrated Master Plan for Buayan-Malungon River Basin - Data Book   |                         |   |                                    |                   |
|                             | Development of Climate-Responsive Integrated Master Plan for Buayan-Malungon River Basin - Executive Summary   |                         |   |                                    |                   |
|                             | RDC XII Resolution No. 90, Series of 2017<br>Endorsing the Climate-Responsive Integrated River Basin Master Plans for the Mindanao River Basin and the Buayan-Malungon River Basin   | 2017                    | To integrate the disaster risk reduction and climate change adaptation (DRR-CCA) perspectives in development planning, especially with the recurring flooding and the alarming impacts of the El Niño |                                    |                   |
|                             | RDC XII Resolution No.91 , Series of 2017<br>Enjoining the Concerned RLAs, LGUs and SUCs in Region XII to include the Proposed Programs, Projects and Activities (PPAs) Identified in the Climate-Responsive Integrated Master Plans for the Mindanao River Basin and the Buayan-Malungon River Basin in their | 2017                    | Inclusion of the proposed programs, projects and activities (PPAs) indicated in the Master Plans in their respective regional/ local development investment programs                                  |                                    |                   |

| Level/ Lead Entity Involved | Title of Policy or Plan  | Year Developed / Issued | Objective / Description/Scope  | Implementation Issues / Challenges | Assistance Needed |
|-----------------------------|--|-------------------------|--|------------------------------------|-------------------|
|                             | Respective Regional/Local Development Investment Programs  |                         |  |                                    |                   |
|                             | Memorandum Order No. 02-2019-26 entitled “Municipal Water Supply, Sewerage and Sanitation Sector Plan Formulation Technical Working Group (MW4SP-TWG)  | 2019                    | Organizing the MW4SP Technical Working Group to primarily gather necessary data and information and to facilitate the final packaging of the plan for submission, endorsement and approval by concerned planning and legislative bodies. |                                    |                   |
| <b>Regional Level</b>       |  |                         |  |                                    |                   |
|                             | Resolution No. 141 Series of 2018: Enjoining DENR XII and other concerned Agencies & LGUs to strictly Enforce Easement Rights and Regulations to Address the Degradation of Riparian Zones and Improve River Bank Rehabilitation | 2019                    |  |                                    |                   |

## Annex 31: Tools, Technologies, or Measures for Managing Water Resources and WSS

### Palawan

| Name of Tool / Technology / Measure Implemented                | Developed / Initiated By | Objective / Description  | Scope / Area of Coverage                       | Implementation Issues / Challenges   | Assistance Needed  |
|--|--------------------------|--|--|--|--|
| <b>Provincial Level</b>  |                          |  |  |  |  |
| Lawin System (Lawin Forest and Biodiversity Protection System) | USAID-B+WISER and DENR   | National Strategy for Forest Biodiversity in the country to strengthen the forest and biodiversity protection through application of a science-based and technology-aided forest protection system that is relevant to management. It also ensures the transparency, accountability, and efficiency in forest and biodiversity protection and conservation activities. | Natural Forest within DENR- CENRO Jurisdiction | No permanent Data Manager for data management.<br><br>The assigned Data Manager has limited capacity on GIS. | Training of new staff<br>Updating of maps such as forest cover to be loaded in SMART software<br>Support from GIS person in the office or assistance from central office<br>Lawin focal person (FMB) |

| Name of Tool / Technology / Measure Implemented | Developed / Initiated By  | Objective / Description   | Scope / Area of Coverage | Implementation Issues / Challenges   | Assistance Needed   |
|---|---|---|--------------------------|--|---|
| Community-Based Monitoring System (CBMS) tool   | Department of the Interior and Local Government (DILG), The Department of Information and Communications Technology (DICT), and Philippine Statistics Authority (PSA) | Census of households done by the LGUs with the participation of community using accelerated poverty profiling system in data collection, processing, mapping, and data analysis | City/Municipal wide      | <p>Poor internet connection to upload and download data in the portal.</p> <p>Difficulties to meet the required accuracy in GPS reading (10m below) during the household and barangay survey.</p> <p>Some of the households are not cooperative during the survey.</p> <p>Double counting is not notified in the system.</p> | <p>Updating of the System</p> <p>Training to strengthen the capacity of LGU and volunteers on the use the tool.</p> |

## Negros Occidental

| Name of Tool / Technology / Measure Implemented                | Developed / Initiated By | Objective / Description   | Scope / Area of Coverage    | Implementation Issues / Challenges   | Assistance Needed   | Remarks  |
|--|--------------------------|---|-----------------------------|--|---|--|
| Lawin System (Lawin Forest and Biodiversity Protection System) | USAID-B+WISER and DENR   | LAWIN, a Philippine-made mobile application created to monitor protected areas in the country, was given the spotlight at the first Multi-Stakeholder Forum on Science, Technology and Innovation (STI Forum) held at the United Nations (UN) headquarters in New York. LAWIN is a forest and biodiversity protection system. It hinges on regular monitoring and informed responses to forest and biodiversity threats. LAWIN empowers communities and authorities to address forest degradation and achieve conservation objectives. The innovative system a) employs science to formulate measurable conservation targets, b) automates data encoding, c) monitors patrol efforts, d) produces geo-referenced data, and e) enhances coordination | Protected Areas/ Forestland | <ol style="list-style-type: none"> <li>1. Lack of Capacity operation GIS and Data Processing</li> <li>2. Need to upgrade PC for fast processing</li> <li>3. Internet Connection</li> </ol> | <ol style="list-style-type: none"> <li>1. Need training support/ refresher course for LAWIN patrolling system.</li> </ol> | <ol style="list-style-type: none"> <li>1. Presence of forest patrols receiving honorarium from LGU, (San Carlos City, Bago, Silay, Murcia)</li> <li>2. 35 patrollers are conducting foot patrolling in the area of 6 bgrys. With the support of EDC</li> </ol> |

| <b>Name of Tool / Technology / Measure Implemented</b> | <b>Developed / Initiated By</b> | <b>Objective / Description</b>   | <b>Scope / Area of Coverage</b> | <b>Implementation Issues / Challenges</b>   | <b>Assistance Needed</b>   | <b>Remarks</b>                                    |
|--|---------------------------------|--|---------------------------------|---|--|---|
|  |                                 | between monitoring and law enforcement.  |                                 |   |  |   |
| Drone and Software "Agisoft"                           | DENR/LGU Province               | Used for monitoring in Forest Cover, Plantation, Disaster, tourism,  | Province & LGU                  | <ol style="list-style-type: none"> <li>1. Bad weather condition</li> <li>2. Internet connection</li> </ol>  |  | Need to verify on LGUs except DENR                |
| Community based management system (CBMS)               | LGU & Province                  | LGU used this technology/ tools for collecting actual data on the ground (Household, geographic Coordinate, population, water level used and others source) for planning purposes) | Province and LGU                | <ol style="list-style-type: none"> <li>1. Poor GPS Accuracy (factor a. weather condition, inside Canopy area).</li> <li>2. Some of the HH located in Upland or high elevation.</li> </ol> | <ol style="list-style-type: none"> <li>1. Training/ Workshop for data processing of CBMS.</li> </ol> | CBMS data can also generate through GIS software. |

**Sarangani & General Santos City**

| Name of Tool / Technology / Measure Implemented  | Developed / Initiated By  | Objective / Description   | Scope / Area of Coverage                              | Implementation Issues / Challenges | Assistance Needed |
|--|---|---|---|------------------------------------|-------------------|
| <b>Local Level (City or Municipality specific)</b>   |   |   |   |                                    |                   |
| <b>General Santos City</b>   |   |   |   |                                    |                   |
| Organizational Study for Rural Waterworks and Sanitation Associations in General Santos City using Organizational Capacity Assessment Tool | MSU General Santos in coordination with CPDO and CMO-IBA, and USAID Surge | This study seeks to investigate the organizational capacity of Rural Waterworks and Sanitation Associations (RWSAs) in General Santos City using USAID Assessment tools for Organizational assessment   | 151 RWSAs located in 18 barangays and 7 without RWSAs |                                    |                   |
|  |   | Research Objectives: 1. To determine the maturity level of RWSA, specifically on Governance, Administration, Human Resource, Financial Management and Organization Management. 2. To determine the problems and challenges in the Management of water system. |   |                                    |                   |



| Name of Tool / Technology / Measure Implemented               | Developed / Initiated By  | Objective / Description   | Scope / Area of Coverage  | Implementation Issues / Challenges | Assistance Needed |
|---|---|---|---|------------------------------------|-------------------|
| Water Quality Assessment                                      | MSU General Santos in coordination with CPDO and CMO-IBA, and USAID Surge | This study sought to determine the water quality of 20RWSA and 9 GSWD pumping stations. Area reconnaissance, water quality data sampling was done through grab sampling and analyzed at the MSU-GSC, GSWD. and at ECPL-RAL laboratories in Sarangani.   | The water quality assessment study was conducted in twenty (20) RWSA and nine (9) GSCWD Pumping Stations. These RWSA and Pumping Stations are located in Barangay Labangal, Apopong Sinawal, Calumpang, Fatima, Conel, Mabuhay, San Isidro, Dadiangas West and Tambler, General Santos City |                                    |                   |
| Household Survey on Perceptions and Water Demand and Services | MSU General Santos in coordination with CPDO and CMO-IBA, and USAID Surge | This study sought to determine the factors affecting the level and quality and services of Water District and Water District and RWSA; assess difference between water district and RWSA household knowledge on water and waterborne diseases, assess difference of water use practices and preferred services. | A total of 1,200 households were interviewed in the study, 600 from RWSAs and 600 for General Santos Water District (GSWD) from ten barangays. These include Labangal, Apopong, Fatima, Tambler, San Isidro, Conel, Calumpang, Mabuhay, West and Sinawal                                    |                                    |                   |

| Name of Tool / Technology / Measure Implemented                   | Developed / Initiated By | Objective / Description  | Scope / Area of Coverage | Implementation Issues / Challenges                            | Assistance Needed |
|---|--------------------------|--|--------------------------|---|-------------------|
| Wells/ Springs Inventory in the Province of Sarangani             | MGB                      | Ground Water Assessment in Sarangani Province  | Sarangani Province       |   |                   |
| Checklist for water testing / Assessment of Risks                 | MLGU Malungon            |  | Municipality of Malungon | Compliance with the parameters in the checklist was very low. |                   |
| <b>Watershed Level</b>  |                          |  |                          |   |                   |
| Problem and Solution Tree Analysis of Buayan-Malungon River Basin | 2019                     | Conduct of Problem Tree Analysis for Community-Based Flood Risk Management Project (CBFRM) for Buayan-Malungon River Basin |                          |   |                   |
| <b>BMRB Roadmap 2.0</b>   |                          |  |                          |   |                   |
| <b>Provincial Level</b>   |                          |  |                          |   |                   |
| Community-Based Monitoring System (CBMS)                          | PLGU Sarangani           |  |                          |   |                   |
| <b>Regional Level</b>   |                          |  |                          |   |                   |

| Name of Tool / Technology / Measure Implemented            | Developed / Initiated By                 | Objective / Description   | Scope / Area of Coverage                                    | Implementation Issues / Challenges | Assistance Needed |
|--|--|---|---|------------------------------------|-------------------|
| Groundwater Resource and Vulnerability Assessment Database | Mines and Geosciences Bureau (MGB) - XII | Assess the availability of groundwater in various geologic formations; determine the quality of groundwater springs and wells; evaluate the vulnerability of aquifers; and develop a groundwater resource and vulnerability database. | Sarangani Province<br>Sultan Kudarat<br>General Santos City |                                    |                   |

### Annex 32: Partnerships Developed / Institutionalized to Manage Water Resources or Improve WSS Services

#### Palawan

| Name of Partnership                                | Actors / Institutions                   | Objective / Description of Partnership  | Scope / Area of Coverage | Implementation Issues / Challenges   | Assistance Needed  |
|--|---|---|--------------------------|--|--|
| <b>Local Level (City or Municipality specific)</b> |   |   |                          |  |  |
| Joint Venture Agreement                            | Bureau of Corrections (BuCor) and PPCWD | The BuCor provided areas located within Iwahig Prison and Penal Farm (IPPF) for the development of PPCWD water system | Within IPPF              | PPCWD needs to commission a Feasibility Study on construction of impounding dam in Bucor property by August 2021 | Assist PPCWD in preparing Terms of Reference (ToR) for the FS. |

| Name of Partnership         | Actors / Institutions   | Objective / Description of Partnership  | Scope / Area of Coverage  | Implementation Issues / Challenges  | Assistance Needed  |
|-----------------------------|---|---|---|---|--|
| Memorandum of Understanding | USAID and City Government of Puerto Princesa  | Puerto Princesa enters into a MOU with USAID as one of the cities in the latter's Cities Development Initiative (CDI).  | PPC   | USAID SURGE Project, who assists Puerto Princesa, will be ending this year.   | Continue/sustain the initiatives of SURGE in WSS and building capacities of stakeholders, particularly in SURGE's assistance to PPC LGU and PPCWD.   |
| Joint Venture Agreement     | City Government of Puerto Princesa; Eco-System Technologies, Inc. (ESTI); Eco-System Technologies International (ESTII), Inc. (ESTII); JCA 1221 Holdings Inc. (JCA) | The general objective of the Joint Venture Project is to provide sewage, septage and sanitation services for the City of Puerto Princesa in compliance with the requirements of the Philippine Clean Water Act of 2004 and the protection of the environment, particularly the bay of Puerto Princesa, by cleaning wastewater for potential reuse via a facility that utilizes proven technology. | Joint Venture Company shall act as operator, contractor and/or agent of the PPC LGU in providing septage, sewerage, and sanitation services and shall be responsible for the development, construction, operation, and maintenance of sewage and/or septage treatment plants which may also act as a tourist attraction and | A triparty MOA between PPC LGU, the Joint Venture Company, and PPCWD is yet to be signed. Under the MOA, PPCWD shall be the billing and collecting agent for the user fees that will be charged to the customers that are connected to the PPCWD. | Facilitate signing of the MOU and creation of institutional arrangement for the efficient implementation of the septage management program<br><br>Technical assistance to PPC LGU in the operations and management of the septage facility |

| Name of Partnership  | Actors / Institutions  | Objective / Description of Partnership   | Scope / Area of Coverage                      | Implementation Issues / Challenges  | Assistance Needed  |
|--|--|--|---|---|--|
|  |  |  | learning center for environmental protection. |   |  |
| Memorandum of Agreement<br><br>(PGP-Dumaran Water System Joint Management) | PGP and LGU (Dumaran and Taytay)                                   | The PGP will provide technical assistance (e.g. man-hours, technical planning, design, and uses to heavy equipment) to LGU for the management and operation of water system  | Municipality wide                             | Need to train LGU staff to be able to efficiently manage the water system             | Conduct training on water supply and operation management  |
| Sisterhood Agreement   | LGU Municipality of Dumaran and City Government of Puerto Princesa | To strengthen the cooperation of two (2) LGUs through exchange of information, plans, programs, and technologies for growth and development of both parties.                 | Municipality wide                             | USAID SURGE Project, who assists Puerto Princesa, will be ending this year            | Facilitate technical assistance on WSS for both Dumaran and Puerto Princesa City                   |
| Memorandum of Agreement  | Katala Foundation, Inc. and Dumaran Municipality                   | Enforcing the protection and conservation of Philippine Cockatoo/Katala and other endemic and endangered wildlife within the environmentally and ecologically protected area | Barangays of Sto. Tomas, Poblacion, San Juan  | There are some development of water system that affect the declared conservation site | Updating/Completion of critical habitat management for the cockatoo conservation in Dumaran Island |

| Name of Partnership     | Actors / Institutions                                     | Objective / Description of Partnership   | Scope / Area of Coverage | Implementation Issues / Challenges  | Assistance Needed   |
|-------------------------|---|--|--------------------------|---|---|
| Memorandum of Agreement | Katala Foundation, Inc. and Bureau of Corrections (BuCor) | Enforcing the protection and conservation of Philippine Cockatoo/Katala and other endemic and endangered wildlife within the environmentally and ecologically protected area | IPPF                     | <p>Short-term duration of MOA, it only covers 2 years. Currently, the MOA already lapsed so patrolling and monitoring are not allowed within the reserve.</p> <p>The MOA and implementation arrangement of activities (e.g. patrolling and monitoring) change every time there is change of administration or Superintendent of IPPF.</p> <p>KFI requested for 16,000 ha to be a critical habitat area but was not approved.</p> <p>Cooperation of the communities in the conservation programs and activities. There are conversion of natural habitat of wildlife to agricultural farm.</p> | <p>Continued protection of IPPF forest area as habitat of cockatoo.</p> <p>Delineation of critical habitat of cockatoo and its integration into the Montible-Lapu-Lapu watershed management zones.</p> <p>Continued engagement of PDLs (persons deprived of liberty) as forest wardens.</p> |

| Name of Partnership     | Actors / Institutions | Objective / Description of Partnership   | Scope / Area of Coverage | Implementation Issues / Challenges  | Assistance Needed  |
|-------------------------|-----------------------|--|--------------------------|---|--|
| Memorandum of Agreement | DENR and PO           | Collaboration between DENR and POs to achieve the objectives of NGP through tree planting. The DENR will provide seedlings and incentives for the POs. | PPC, Dumarán, Taytay     | Some of the POs has no regular monitoring of planted trees.<br><br>Some of the suggested trees to be planted are not suitable in the area | Strengthening of POs in terms of livelihood management and training in the use of appropriate tree species and proper methods of rehabilitation/reforestation of contract areas. |

### Negros Occidental

| Name of Partnership                                | Actors / Institutions   | Objective / Description of Partnership   | Scope / Area of Coverage | Implementation Issues / Challenges | Assistance Needed |
|--|---|--|--------------------------|------------------------------------|-------------------|
| <b>Local Level (City or Municipality specific)</b> |   |  |                          |                                    |                   |
| Joint Venture Agreement                            | 1. Prime Water and 3 Municipalities   |  |                          |                                    |                   |
|  | 2. Bacolod City WD and Prime water has compromised the inclusion of Bacolod City to SW project. | The JV partially eliminated objective 1 (increase access to water supply and sanitation, improved water resource mgt. 3. strengthen water sector governance) | Bacolod Jurisdiction     |                                    |                   |

| Name of Partnership  | Actors / Institutions                               | Objective / Description of Partnership   | Scope / Area of Coverage     | Implementation Issues / Challenges  | Assistance Needed                                  |
|--|---|--|------------------------------|---|--|
| Co-mgt agreement   | DENR & LGU Silay City                               | Development & Mgt. of over 3,230 has. Of forestlands including 9.25 km of coast line CY 2005   | Jurisdiction of Silay        |   |  |
| MOA  | SICIWA, DENR & LGU Silay                            | Small watershed rehabilitation project in Brgy. Patag is intended for SICIWA to prepare & implement a development plan protecting the watershed areas in Brgy. Patag as Source of Water. | Silay, Brgy Patag            |   |  |
| Silay's Environmental and Natural Resources Management Program |   |  |                              |   |  |
| MOA  | Local farmers PO San Miguel Agreement and Murcia WD | River Banking (1,200 Bamboo), Brgy. San Miguel.  | Murcia WD & Brgy. San Miguel | Rehabilitation and Clean up drives, existing of HH within River Bank, No Nursery plantation establish | Monitoring of plantation, Nursery for Giant Bamboo |



| Name of Partnership                          | Actors / Institutions                                  | Objective / Description of Partnership   | Scope / Area of Coverage                        | Implementation Issues / Challenges   | Assistance Needed            |
|--|--|--|---|--|------------------------------|
| Agreement (initiative) MURCIA water District | Murcia Water District and & DepEd, Murcia Elem. School | Established a Nursery plantation of 3 kinds of variety of endemic trees at Murcia Elementary School  | Murcia  | if the set-up of the nursery in Elem. School will be successful. This initiative of the Murcia Water Dist. Will replicate to the other School with MOA signing |                              |
| MOA  | DENR and PO's  | contribute in reducing poverty among upland and lowland poor households, indigenous peoples, and in coastal and urban areas; 2) implement sustainable management of natural resources through resource conservation, protection, and productivity enhancement; 3) provide food, goods and services such as timber, fiber, non-timber forest products, aesthetic values, air enhancement values, water regulation values, and mitigate climate change by expanding forest cover that serves as a carbon | Jurisdiction of PENRO , Negros Occ., CENRO-DENR | Survival rate of the spp. Due to weather condition. Maintenance of the plant. Mobilization of the seedling from nursery to plantation site.                    | Monitoring of the plantation |

| Name of Partnership | Actors / Institutions | Objective / Description of Partnership  | Scope / Area of Coverage | Implementation Issues / Challenges | Assistance Needed |
|---------------------|-----------------------|---|--------------------------|------------------------------------|-------------------|
|                     |                       | <p>sink; 4) promote public awareness as well as instill social and environmental consciousness on the value of forests and watersheds; 5) enhance the formation of positive values among the youth and other partners through shared responsibilities in sustainable management of tree plantations and forest resources; and 6) consolidate and harmonize all greening efforts of the government, civil society, and the private sector.</p> |                          |                                    |                   |

## Sarangani and General Santos City

| Name of Partnership  | Actors / Institutions   | Objective / Description of Partnership  | Scope / Area of Coverage | Implementation Issues / Challenges | Assistance Needed |
|--|---|---|--------------------------|------------------------------------|-------------------|
| <b>Local Level (City or Municipality specific)</b>   |   |   |                          |                                    |                   |
| Partnership Agreement on Upland Areas Rehabilitation Project                                   | City ENRO, Notre Dame of Dadiangas University and Balsinang, Balakayo, Tucanop, Olympog Association   | Rehabilitation of upland areas  |                          |                                    |                   |
| MOA for riverbank protection   | DA XII, CLGU General Santos and SOCKSARGEN Area Development Project Office- Project Management Unit (ADP-PMU)   | Agreement for the riverbank rehabilitation of the four (4) major rivers of the city, namely: Siguel River, Buayan River, Silway-Klinan River and Makar River thru provision of 40,000 hills of bamboo seedlings (bayog variety) from DA under Food Security Project and PhP 1,738,000.00 from CLGU Gensan for the implementation of the project |                          |                                    |                   |
| MOA on comprehensive site development of riverbank and timberland rehabilitation/stabilization | CLGU Gensan and ISF Farmers Association of Seven (7) Upland barangays, namely: Calfungal Integrated Socialized Farmers Association of Barangay Bawing, Conel Integrated | CLGU Gensan engaged services of the ISF Upland Associations for comprehensive site development for riverbank and timberland rehabilitation/stabilization covering 284 hectares located in Barangays Olympog, San Jose, Bawing, Mabuhay, Conel, Upper  |                          |                                    |                   |

| Name of Partnership   | Actors / Institutions   | Objective / Description of Partnership   | Scope / Area of Coverage | Implementation Issues / Challenges | Assistance Needed |
|---|---|--|--------------------------|------------------------------------|-------------------|
|   | Social Forestry Farmers Association of Barangay Conel, S'bang Bila Upland Farmers Association of Barangay Mabuhay, Balsinang Balacayo Tucanop ISF Farmers Association of Barangay Olympog, San Jose ISF Farmers Association of Barangay San Jose, Bleng Falac ISF Farmers Association of Barangay Sinawal and Aldatua ISF Farmers Association of Barangay Upper Labay | Labay and Sinawal within the 3-year period from 2015 to 2018 or upon completion of all the works called for under this agreement |                          |                                    |                   |
| > Rehabilitation of Riparian Areas<br>> Munting Gubat sa Paaralan | Kasilak Development Foundation, DepEd, and Malungon MLGU  | > To rehabilitate the critical riparian areas.<br>> To establish mini forest in schools  |                          |                                    |                   |
| <b>Watershed Level</b>  |   |  |                          |                                    |                   |
| Buayan-Malungon River Basin Council                               | PLGUs Sarangani, South Cotabato and Davao Occidental, and CLGU of General Santos, DENR XII,   |  |                          |                                    |                   |
| <b>Provincial Level</b>   |   |  |                          |                                    |                   |

| Name of Partnership   | Actors / Institutions   | Objective / Description of Partnership   | Scope / Area of Coverage | Implementation Issues / Challenges | Assistance Needed |
|---|---|--|--------------------------|------------------------------------|-------------------|
| Biodiversity Assessment of Nanima Watershed, Kalonbarak Skyline, Malungon, Sarangani Province | DENR and Sarangani PLGU (ECPC)  | The project focuses in assessing the natural resources upland. These resources need to be conserved and protected, thus, a need for periodic monitoring on its status to conserve biodiversity is necessary.   |                          |                                    |                   |
| MOA on Watershed Ecosystem Rehabilitation and Flood Risk Reduction for Increased Resilience   | PLGU Sarangani, Mindanao State University General Santos City Mahintana Foundation, Inc. (NGO) Ladislawa Alcantara Foundation, Inc. (NGO) | The project will focus on the creation of a watershed governance system; build the capacity of the municipal government, development partners, beneficiaries and other stakeholders to adapt to flood risks and other impacts of climate change variability; establish river bank protection mechanisms; and help alleviate poverty in the area through agro-forestry development. | Municipality of Maitum   |                                    |                   |