

Initiatives on Flood Management at the Local level:
HELP Davao Experience

HELP Davao Network

WHO ARE WE?

- is a SEC registered non-stock, non-profit **Multi-Sector Network of volunteers and professionals** with various backgrounds in technical, political economic, planning and development, social, and environmental advocacies, commonly working together in **ensuring that stakeholders have access to sound science that can be used to better inform complex decisions and hard choices in water management**



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WHO ARE OUR MEMBER-STAKEHOLDERS?

- City Mayor of Davao
- Government Line Agencies (***DOST, DENR, DA, DOT, DOH, NCIP, DCWD***)
- Non-government organizations (***PCEEM, HELP-Davao, KFI, CRS, SALIGAN, IDIS, Davao Medical Society, RECORD Foundation***)
- Private Sectors (***Federation of Davao Chamber of Commerce, Aboitiz, HEDCOR, PBGEA***)
- People Organizations (***Protect Davao River Movement, Protect Bunawan River Movement, Federation of Federations of Urban of Poor, Mindanao***)
- Media (***Environmental Media in Action, PIA, SunStar***)
- Management Councils (***Watershed Management Coordinating Committee, Watershed Youth Management Council, Davao Gulf Management Council***)
- Academe (***University of the Philippines, Ateneo de Davao University, University of Southeastern Philippines, University of immaculate Concepcion, Southern Philippines Agri-business and Marine and Aquatic School of Technology***)

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WHAT DO WE DO?

To be involved in the process of policy and/or critical decision making and planning in water management



- **Acted as technical mediator** when DCWD and Aboitiz competed for the use of the same surface water for drinking and hydropower
- Consulted when the City declared a ban on the practice of aerial spraying by banana and pineapple plantations

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WHAT DO WE DO?

To promote pro-active participation in planning for water and watershed management programs



- **Acted as technical mediator** when DCWD and Aboitiz competed for the use of the same surface water for drinking and hydropower
- Consulted when the City declared a ban on the practice of aerial spraying by banana and pineapple plantations

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WHAT DO WE DO?

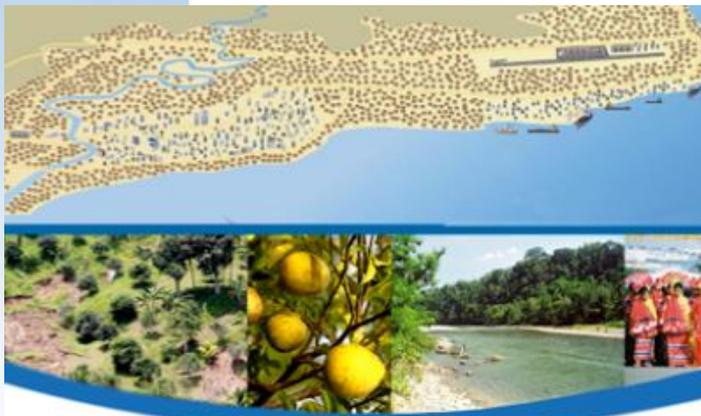
Enhance capability in water and watershed management
By facilitate participation of water leaders and water advocacy groups in trainings, consultations and cross visits



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WHAT DO WE DO?

To develop a model on water and watershed management, conservation, and protection for replication by other watershed management bodies



Customized IWRM Guidelines
for Davao City and Region XI



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WHAT DO WE DO?

To establish community-based water and watershed watch groups



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WHAT DO WE DO?

To promote water accessibility to marginalized sectors



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WHAT DO WE DO?

To conduct constant community-based consultation and information dissemination



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WHAT DO WE DO?

Conduct baselines studies, surveys, and researches in water resource management



- A nationwide assessment of water safety systems and procedures of water services providers including those in Davao Region is now being conducted by HELP Davao Network.

Sustainability Science Project

Davao City

Learning from
Actual Experiences:

**The hydro-hazards we faced in
Davao Region**

TYPHOON BOPHA (Pablo) 2012



Total Estimate Cost of Damage: **PHP36,949,230,987.07**
(agriculture, infrastructure, properties)
Total Individuals Affected: **711,682 families**
Total Casualties: **1,607 Filipinos**
Reported Missing: **834 Filipinos**
Other immediate problems:
**WASH, Food Security, Health and Safety, Shelter, Logistics
and Communication, Education**

The impact of **Typhoon Bopha (Pablo)**



Infrastructure and
Communication



Industries, Businesses
and Private Properties



Agriculture



Education



Health and Safety



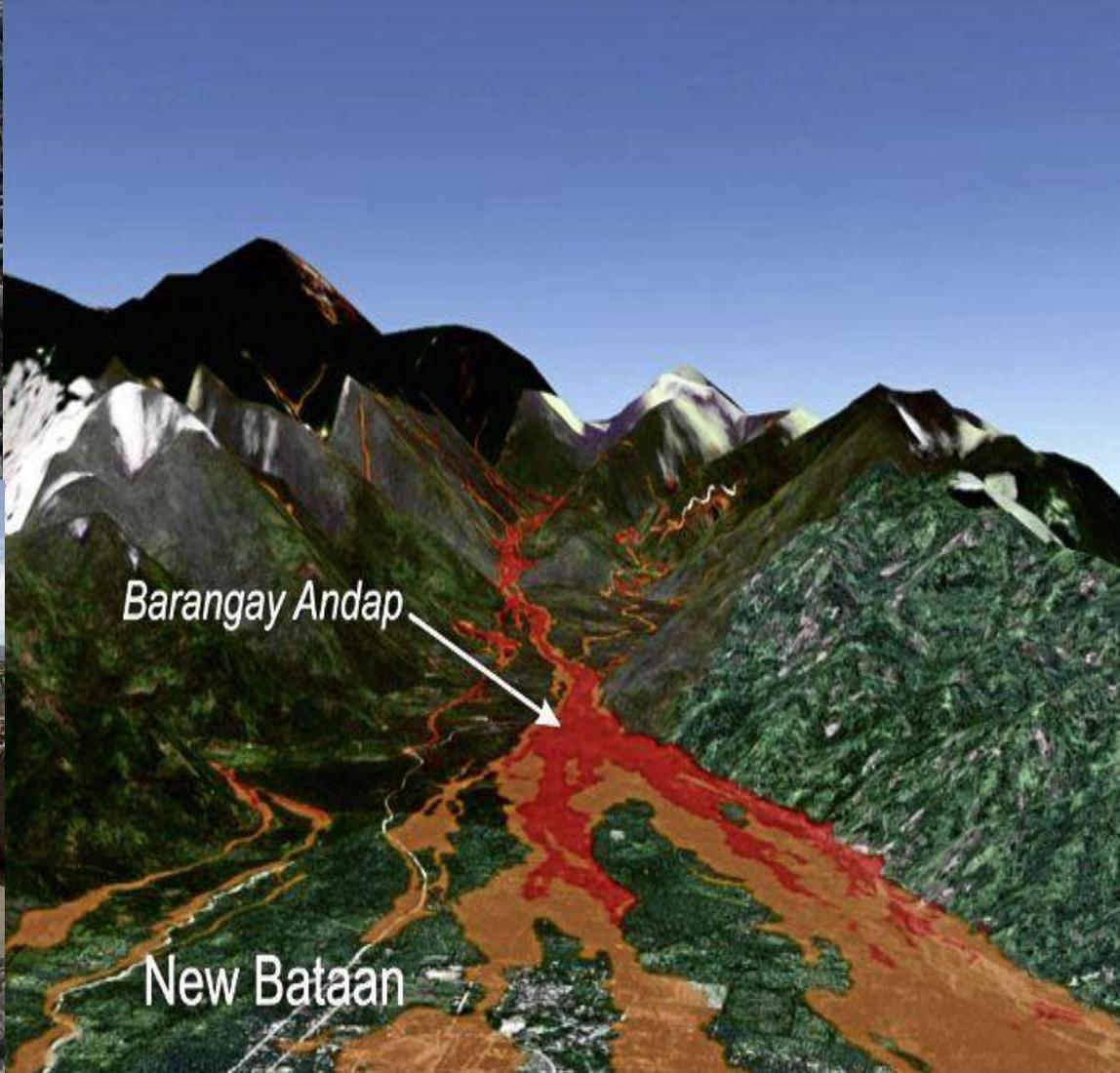
Livelihood



Environmental
Integrity



Lives



**Baranggay Andap and New Bataan,
Compostela Valley Province**

16 affected baranggays
46,309 affected individuals
126 casualties

Damages of the Flash Flood Incident in Davao City

(Matina Pangsi River) - 2011



Infrastructures, Private Properties, and Businesses



Health and Sanitation, Safety, Households, Livelihood



**Demonstration Site on:
“Enhancing Resilience to
Disasters of Urban Water
Systems of Mindanao”
in Philippines**

3 Strategic Approaches:

Assess the state of the Urban Water Systems in Davao City;

Strengthen integrated planning and coordination to enhance resilience in the management of the water systems;

Raise awareness on climate change adaptation among stakeholders by demonstrating resilience.



United Nations
Educational, Scientific and
Cultural Organization



A multi-stakeholder collaboration involving the key actors in water management/water governance in Davao Region: government and non-government agencies, academe and other research institutions, private institutions, and local communities



Davao River
Initiatives



Proceedings of
**STAKEHOLDERS' CONSULTATION
AND TREE PLANTING ACTIVITY**

Demonstration Site on "Enhancing Resilience to Disasters of Urban Water Systems of Mindanao" in Philippines

February 3 - 4, 2016
Grand Regal Hotel & Marina Front
DAVAO CITY, PHILIPPINES



PAGASA



HELP Davao Network
Hydrology for Environment, Life, and Policy

Strategic Approach of the Sustainability Science project:

Component 1

- Database and Assessment using the Geographical Information System (GIS)



Component 2

- Development of Plan and Demonstration of Technologies



Component 3

- Capacity Building and Raising Awareness on Climate Change Adaptation

COMPONENT 1: Targets vs Accomplishments

TARGETS

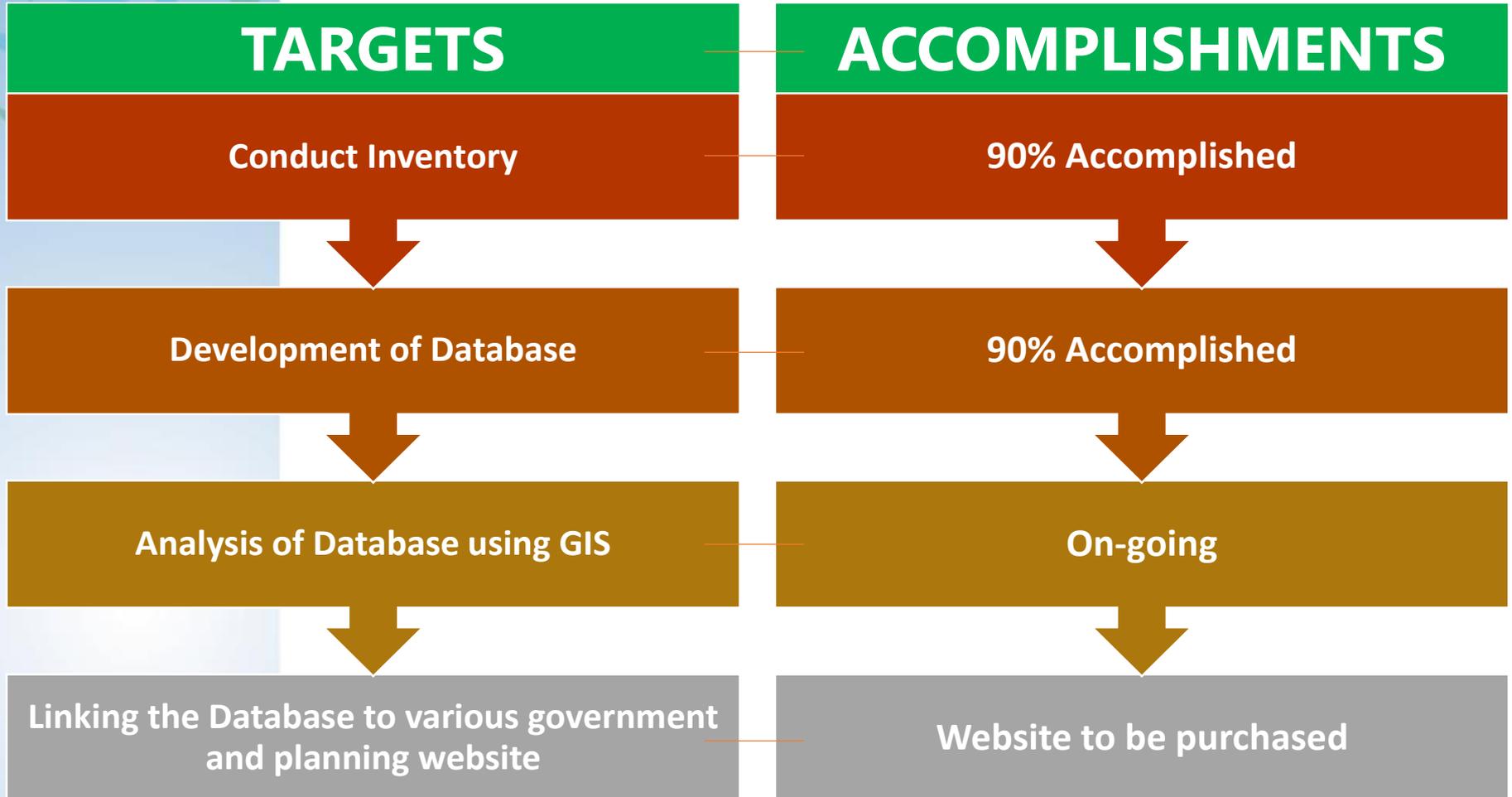
Conduct Inventory

Development of Database

Analysis of Database using GIS

Linking the Database to various government and planning website

COMPONENT 1: Targets vs Accomplishments





Database Developed:

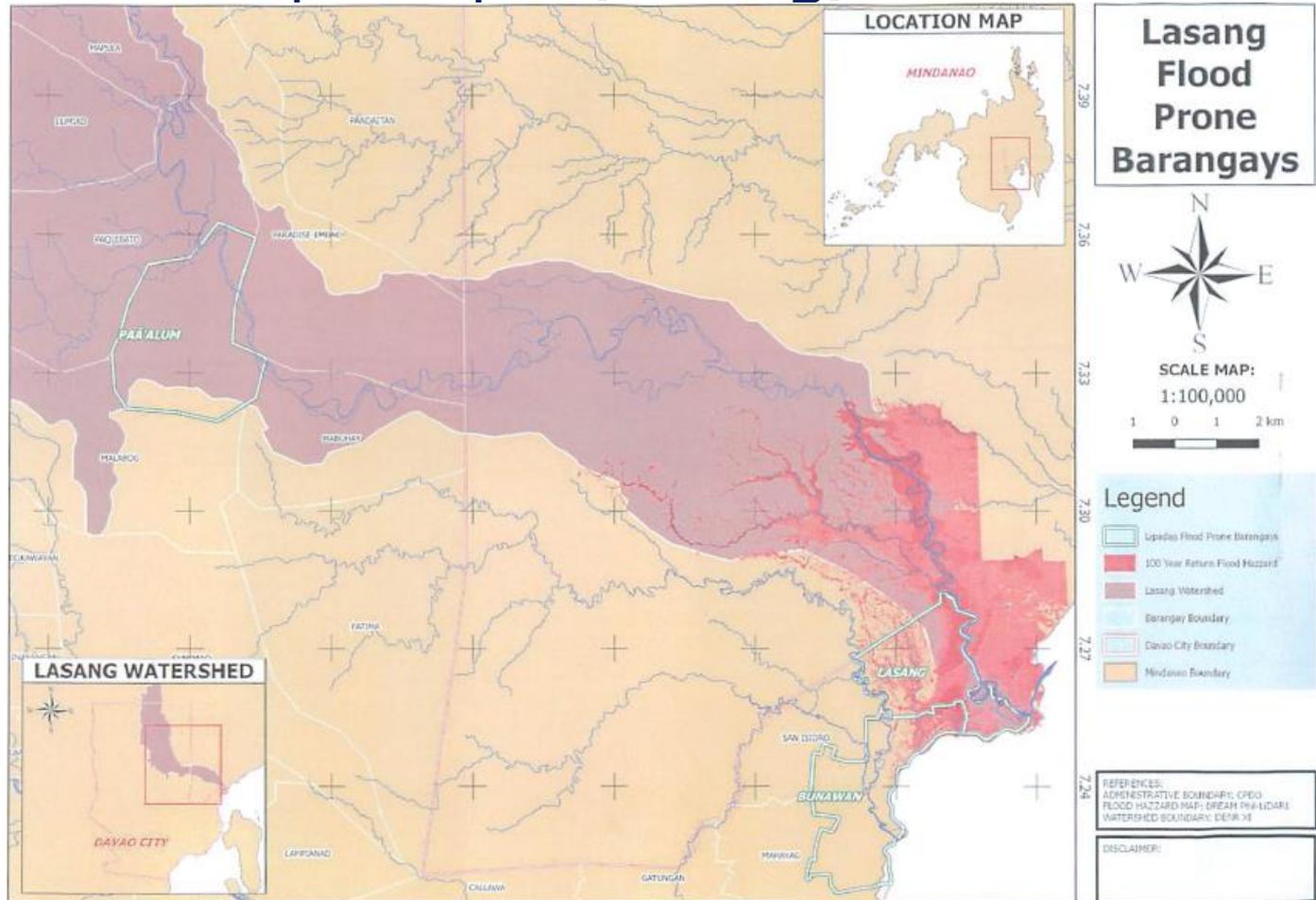
1. List of Attributes

source: **Philippine Statistics Authority, City Planning and Development Office, City Health Office, Bureau of Local Government Finance, Davao City Water District, and Department of Social Welfare & Development**

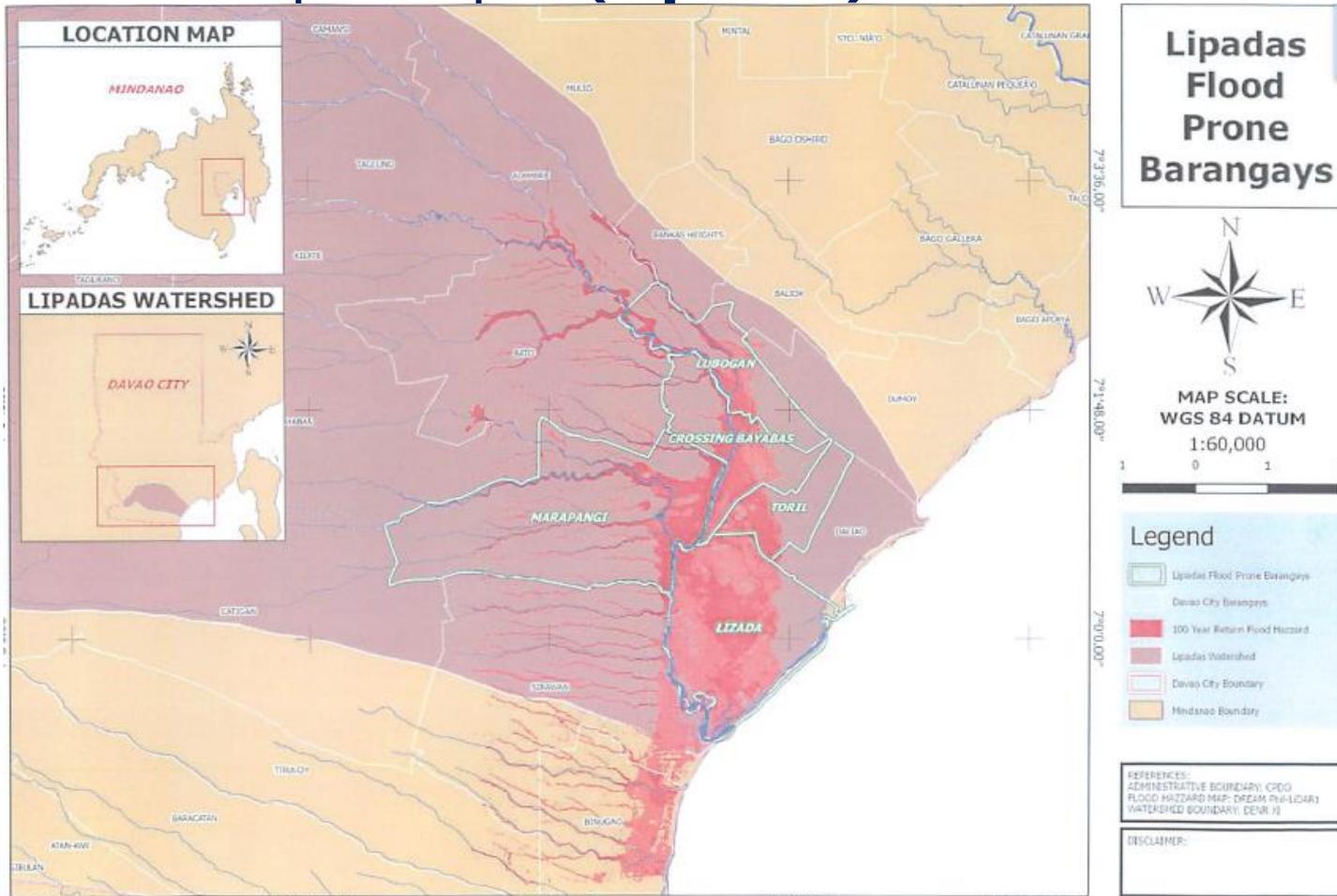
2. Maps

source: **City Planning and Development Office, Mines and Geosciences Bureau, City Engineers Office, Dept. of Public Works and Highways, UP Min DREAM LiDAR, Dept. of Science and Technology, National Water Resources Board, Dept. of Environment & Natural Resources, City Social Services & Development Office, Davao City Local Government, Sangguniang Panglungsod, UP Mindanao, Ateneo de Davao University, National Irrigation Administration**

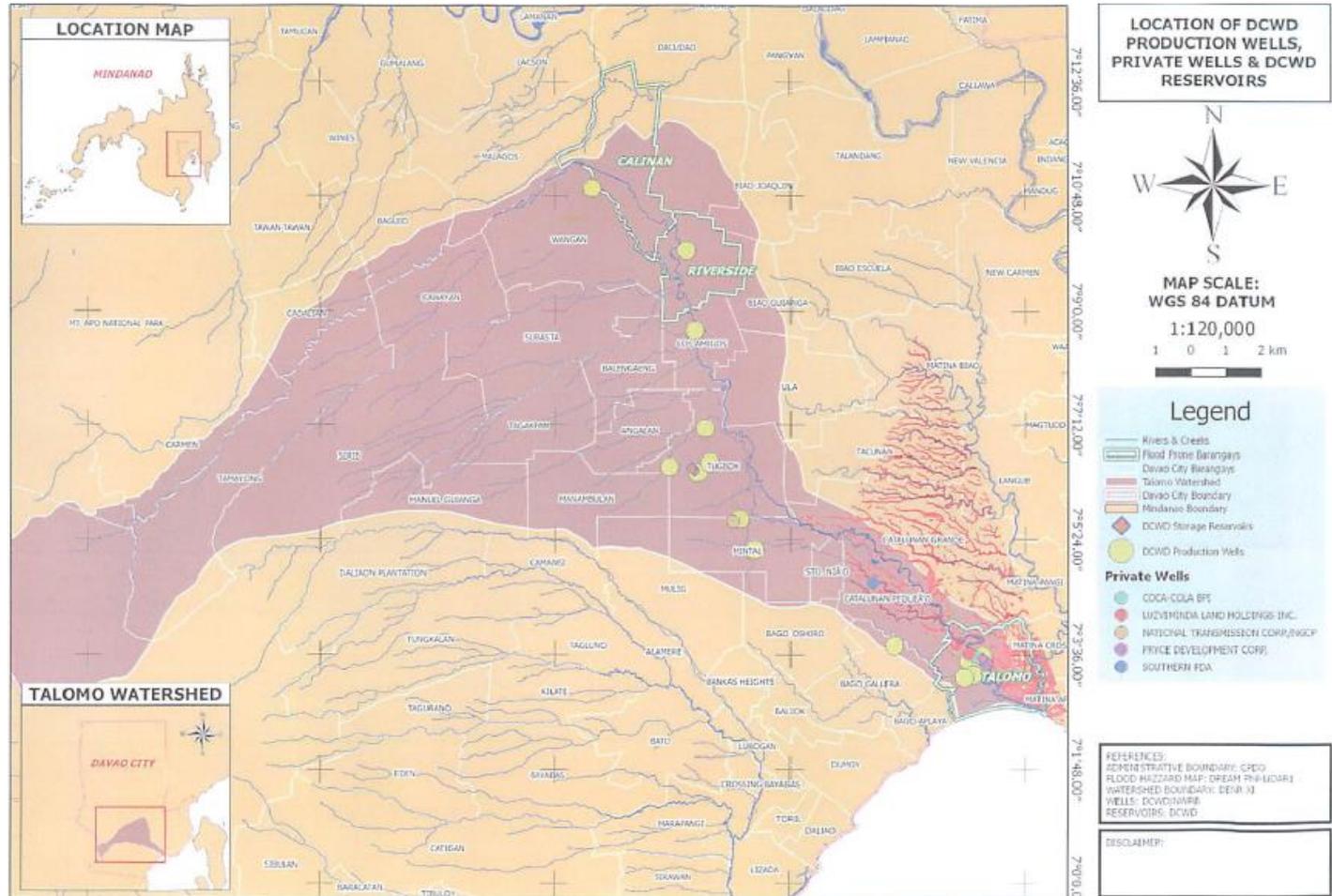
Flood map sample (Lasang)



Flood map sample (Lipadas)



Location of DCWD Production Wells, Private Wells & DCWD Reservoirs



COMPONENT 2

OBJECTIVES

Conduct activities related to the assessment and demonstration of technologies for rehabilitation and upgrading of water conveyance system



Improvement of surface, groundwater and rainfall monitoring systems responding to climate vulnerability



Development of plan to improve integrated management of the urban water system towards resiliency

Timeline: **April – June 2016**

COMPONENT 3

OBJECTIVES

Conduct the various approaches in building capacities towards urban water resilience against disaster

Raising awareness on how the stakeholders, most importantly the general public, can contribute towards climate change adaptation

Timeline: **July – September 2016**



Major Outcome 1:

Demonstration of technologies for rehabilitation and upgrading of water conveyance systems

(study on efficiency and effectiveness of existing water conveyance systems vis-a-vis affected populations; identification and pilot best water conveyance systems)



Major Outcome 2:

Improvement of monitoring systems responding to climate vulnerabilities

(Identification and evaluation of best monitoring/early warning systems and pilot/replicate these systems to other areas)



Major Outcome 3:

Developed/Improved integrated management of urban water systems towards climate change

(review of existing plans, gathering of best practices, recommendations for upgrading/improvement of old/damaged/outdated systems, workshop for development of resiliency plan – water-energy-food nexus)



Major Outcome 4:

Improved capacities and awareness among educational institutions and local communities in the context of climate change adaption

(develop sustainability science strategy in enhancing resilience to disasters of urban waters, develop and disseminate communication packages on how public can contribute to building disaster resilience in the region, build local capacities of water leaders in demonstrating technologies and systems, and public dissemination/dialogues/information drive on DRR and results of inventories/database, and developed plans for improve urban water systems

POLICY IMPLICATIONS

POLICY OPTIONS	ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> An expanded disaster plan that provides measures that would ensure the protection of basic structural services/facilities, the water systems included. Among the maps in a barangay, there has to be one which shows the exact location of and corresponding road access to those facilities. The barangay plan must spell out how those structures are to be protected in case of a great flood and other disasters 	<p>The locals are familiar with the facilities and could respond more quickly</p>	<p>The locals may not have the jurisdiction on the facilities. For example, a broken pipe bridge has to wait for DCWD people even if the locals are handier</p>
<ul style="list-style-type: none"> A common inter-agency disaster manual which spells out who should be doing what, when, where, and why 	<p>Well-defined accountability; no redundancy of tasks; dedicated manpower and resources</p>	<p>Disaster team might be too legalistic and bureaucratic in the midst of rescue and recovery</p>
<ul style="list-style-type: none"> A manual per owner of the service facilities (not just limited to water supply but also power, road access, hospitals, communications, food) harmonized with the Preparedness Plans of all the stakeholders 	<p>Easier to craft</p>	<p>Harmonization may involve several meetings and perspectives. Reaching a consensus may take more time and cost</p>

POLICY OPTIONS	ADVANTAGE	DISADVANTAGE
<ul style="list-style-type: none"> Regular interagency, inter-barangay drills based on their Disaster Plans 	Kinks in operationalizing the plans are ironed out; camaraderie may lead to better rapport when the real disaster comes	Costly
<ul style="list-style-type: none"> Show case model barangays and appropriate, practical technology 	Speeds up learning curve of the concerned sectors; may boost morale of those involved	None
<ul style="list-style-type: none"> Mainstream flood hazards maps in the city and barangay development plans 	A pro-active move which is cheaper in the long-term for the city and the affected residents	Maybe highly politicized

WAY FORWARD

#	PPA	Purpose	Concern Agencies	Timeline	Integrative and Coordinative Mechanism	PPRR Area of Intervention
1	Water Balance Study	A water balance study is essential for the holistic / integrated management of water resources of the city. It is impossible to manage what we can not measure, thus quantitative data of the different elements of the water cycle, i.e. precipitation, evapotranspiration, extraction (surface and groundwater), and run-off, is an essential requirement to understand urban water systems and its sustainable management.	DCWD	2017-2018 (ST)	Improved information and communication technologies	Plan

#	PPA	Purpose	Concern Agencies	Timeline	Integrative and Coordinative Mechanism	PPRR Area of Intervention
2	Update database on disasters and water system	There is a need to continuously update the database for climatic data and UWS information in order to identify effective strategies for increasing the resiliency of infrastructure, as well as estimating the hazard exposure and its risk relative to critical system components of water	DOST	2017-2018 (ST)	Standardization of output Improved information and communication technologies	Prepare
3	Upscale EWS	The FGD has determined that a number of government agencies, particularly DCWD, has no EWS for disasters and mainly depends on 911. Thus, there is a need for a EWS that actively involves facilitation of public education and involvement of communities at risk, aside from implementing warning devices and disseminating alerts.	DOST	2017-2019 (MT)	Standardization of output Improved information and communication technologies	Prepare

#	PPA	Purpose	Concern Agencies	Timeline	Integrative and Coordinative Mechanism	PPRR Area of Intervention
4	Health – water study	There is a need to have a concrete study on waterborne diseases in Davao City. Linking river health to community health can instigate policy makers in reinforcing environmental laws, and mitigate waterborne exposures and related diseases.	DOH Academe	2017-2018 (ST)	Standardization of output Multidisciplinary	Respond

HELP Davao Network (New Website)

www.helpdavaonetwork.com



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Hydrology for Environment, Life and Policy

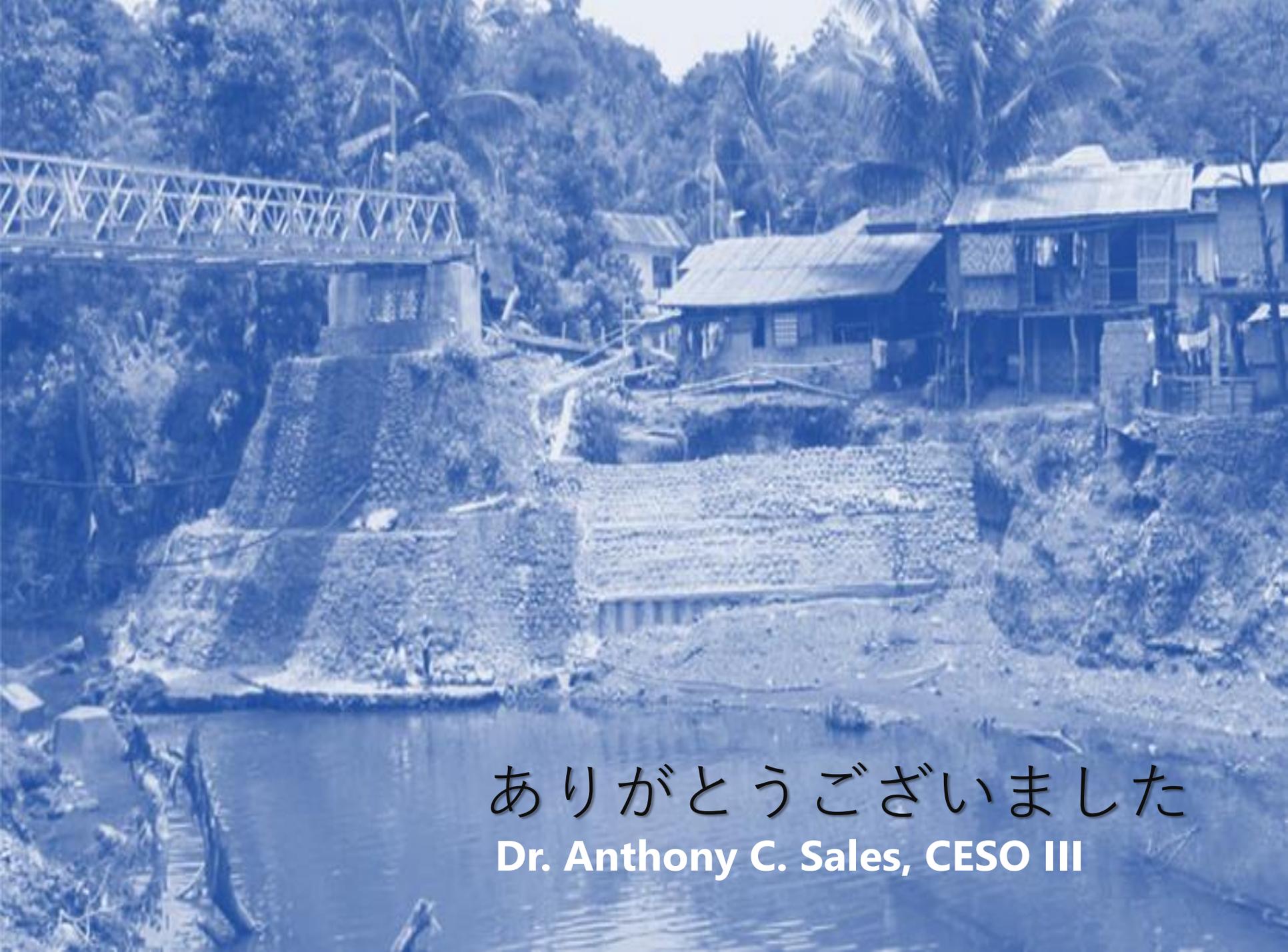
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ありがとうございました

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