1

PRESENTATION OUTLINE

1) NIA's Profile and Organizational Setup
2) Profile of National Irrigation System in Region 6
3) NIA's Sustainable Development and Modernization Framework
   a. Infrastructure Development
   b. Environmental Management
   c. Social and Institutional Development

jump2engineering@gmail.com
National Irrigation Administration
Region VI, Brgy. Tiacas, Jaro, Iloilo City, Philippines 5000

2

About NIA . . .

The National Irrigation Administration (NIA) is a government-owned and controlled corporation (GOCC) primarily responsible for irrigation development in the Philippines. It was created under **Republic Act (RA) 3601 on 22 June 1963**. Its charter was later amended by **Presidential Decree (PD) 552** on 11 September 1974 and PD 1702 on 17 July 1980, both increasing its capitalization and broadening its authority. Its forerunner was the Irrigation Division of the defunct Bureau of Public Works. PD No.1, dated 23 September 1972, integrated all irrigation activities under NIA.

3

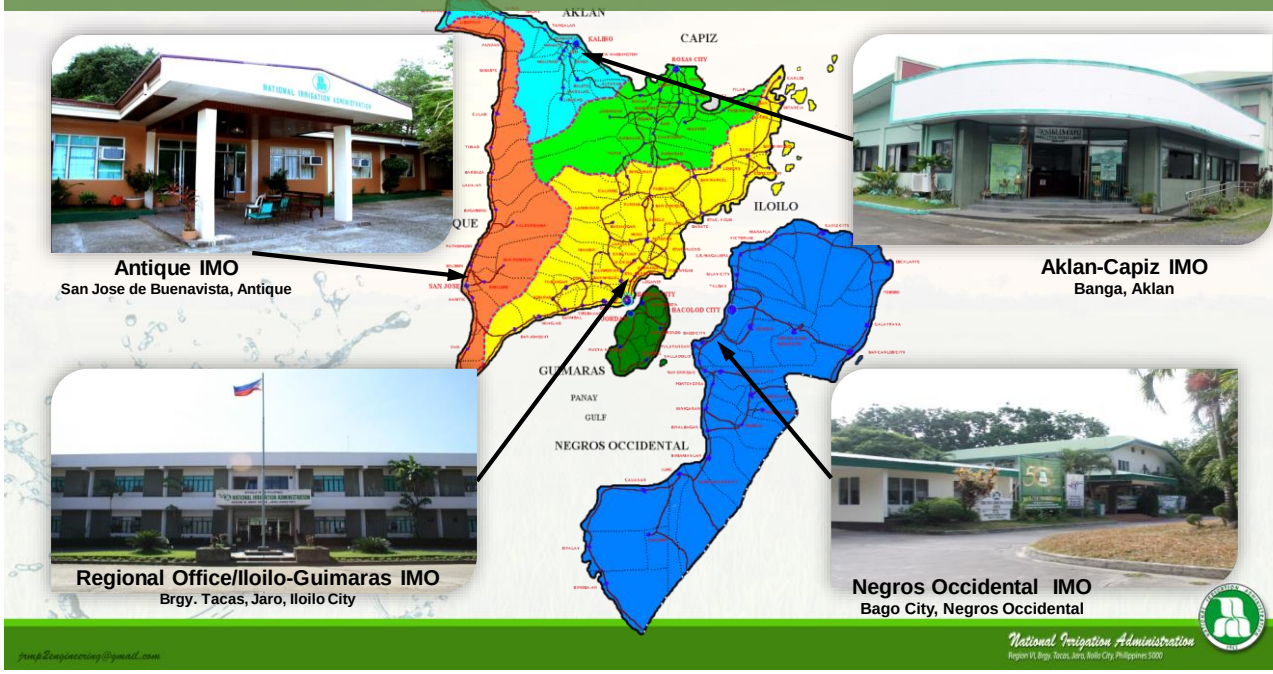
National Irrigation Administration

REGION 6

ILOILO CITY

4

IRRIGATION MANAGEMENT OFFICES



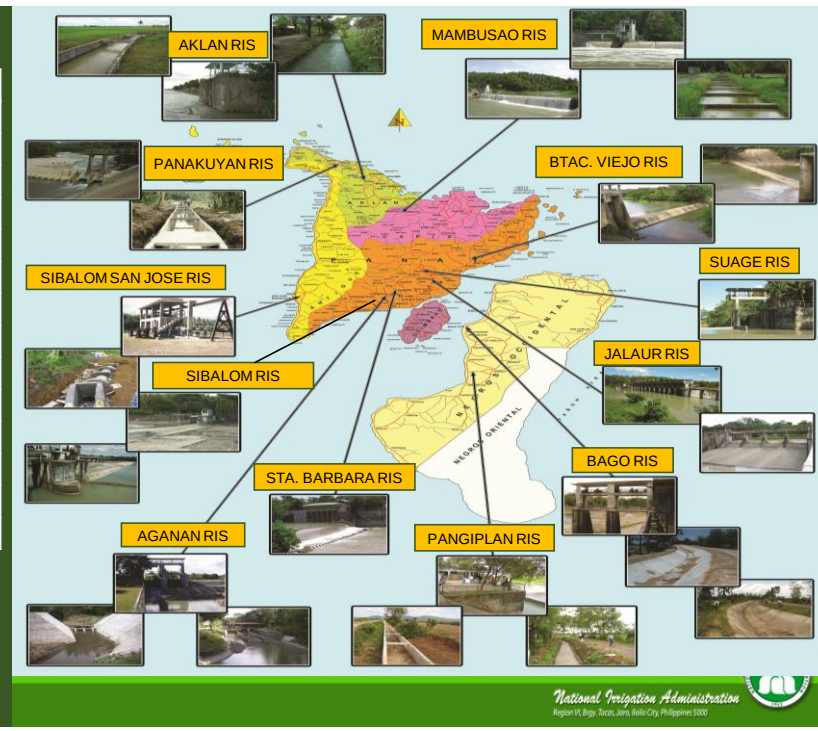
5

9 - National Irrigation System

1. Aklan-Panakuyan RIS	
Aklan RIS	Banga, Aklan
Panakuyan RIS	Ibajay, Aklan
2. Sibalom San Jose RIS	Sibalom, Antique
3. Mambusao RIS	Mambusao, Capiz
4. Aganan-Sta. Barbara RIS	
Aganan RIS	San Miguel, Iloilo
Sta. Barbara RIS	Sta. Barbara, Iloilo
5. Btac. Viejo RIS	Btac. Viejo, Iloilo
6. Jalaur-Suague RIS	
Jalaur RIS	Pototan, Iloilo
Suague RIS	Mina, Iloilo
7. Sibalom RIS	Tigbauan, Iloilo
8. Bago RIS	Bago City, Negros. Occ.
9. Pangiplan RIS	Binalbagan, Negros Occ.

820 – Communal Irrigation System

Aklan RIS	51	Guimaras	34
Antique	133	Iloilo	389
Capiz	122	Negros Occidental	91



6

Status of Irrigation Development

as of December 31, 2018

PROVINCE	TOTAL LAND AREA (ha.)	ARABLE LAND AREA (ha.)	POTENTIAL IRRIGABLE AREA (ha.)	NATIONAL IRRIGATION SYSTEM SERVICE AREA (ha.) Gravity	TOTAL COMMUNAL IRRIGATION SYSTEM (CIS)	TOTAL PRIVATE IRRIGATION SYSTEM (PIS)	TOTAL OTHER GOVERNMENT AGENCY (OGA)	TOTAL SERVICE AREA	% IRRIGATION DEVELOPMENT	REMAINING AREA FOR DEVELOPMENT
AKLAN	181,789	35,437	12,193.00	5,377.50	3,678.15	539.89	370.00	9,965.54	81.73	2,227.46
CAPIZ	263,319	154,710	30,538.00	1,423.00	8,970.96	2,457.00	1,480.80	14,331.76	46.93	16,206.24
ANTIQUE	252,209	137,219	20,884.00	5,416.00	9,121.00	1,293.00	958.00	16,788.00	80.39	4,096.00
ILOILO	471,932	364,998	65,343.00	27,127.82	10,333.00	2,028.50	4,436.00	43,925.32	67.22	21,417.68
GUIMARAS	60,965	32,836	7,104.00		1,051.50	-	157.50	1,209.00	17.02	5,895.00
NEGROS	792,607	525,010	94,297.00	14,540.76	8,073.52	8,943.42	7,479.00	39,036.70	41.40	55,260.30
REGIONAL TOTAL	2,022,821	1,250,210	230,359.00	53,885.08	41,228.13	15,261.81	14,881.30	125,256.32	54.37	105,102.68

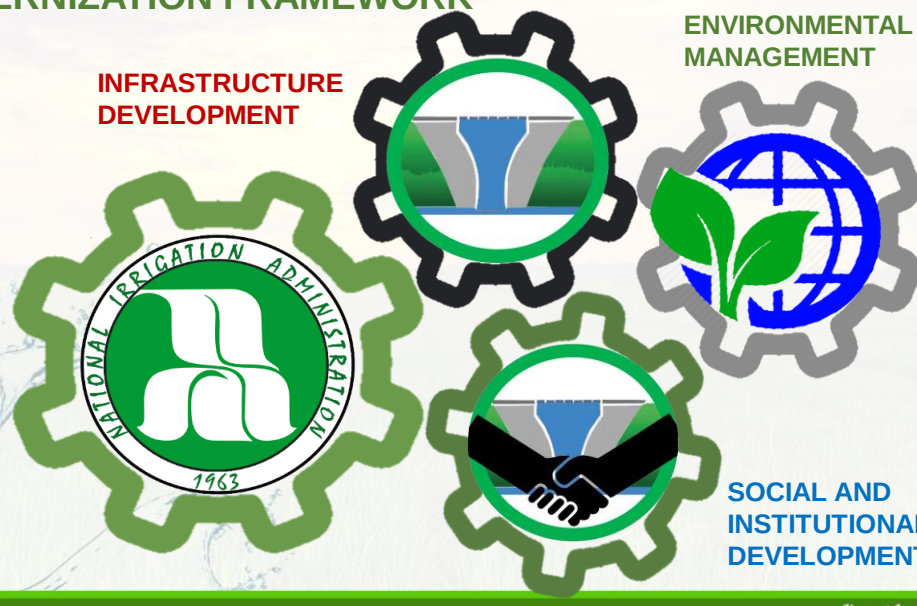
7

Modernization of Irrigation Systems in Response to Climate Change

Republic of the Philippines
National Irrigation Administration

8

❑ NIA'S SUSTAINABLE DEVELOPMENT AND MODERNIZATION FRAMEWORK



9

INFRASTRUCTURE DEVELOPMENT

- CONSTRUCTION OF MULTI-PURPOSE RESERVOIR DAMS
- CONCRETING OF CANAL LININGS
- CONSTRUCTION OF RETENTION PONDS FOR AGRICULTURAL WASTE WATER RECYCLING
- USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY (ICT) AND SMART TECHNOLOGY FOR WEATHER AND SURFACE WATER MONITORING

10

INFRASTRUCTURE DEVELOPMENT

- ✓ **CONSTRUCTION OF MULTI-PURPOSE RESERVOIR DAMS**
  - ❑ Generation of year-round water for irrigation and other purposes (wet and dry season)
  - ❑ Generation of hydroelectric power which is a form of clean and sustainable energy
  - ❑ Mitigation of flooding which is a form of disaster prevention in the irrigated areas downstream of the dam

11

INFRASTRUCTURE DEVELOPMENT

JALAUR RIVER MULTI-PURPOSE PROJECT STAGE II (JRMP II)

Brgy. Agcalaga and Alibunan, Municipality of Calinog, Province of Iloilo

PROJECT OBJECTIVES & BENEFITS

- ✓ **Increase service area for Irrigation from 22, 340 hectares to 31, 840 hectares**
- ✓ **Increase rice production from 3.6 to 5 metric tons per hectare**
- ✓ **Flood Mitigation**
- ✓ **Generate 6.6 megawatts Hydroelectric Power supply**
- ✓ **Generate 1 cms Bulk Water supply**
- ✓ **Generate Eco-Cultural Tourism Opportunties**
- ✓ **Generate Inland Fishery Opportunities**
- ✓ **Generate employment opportunities**

12

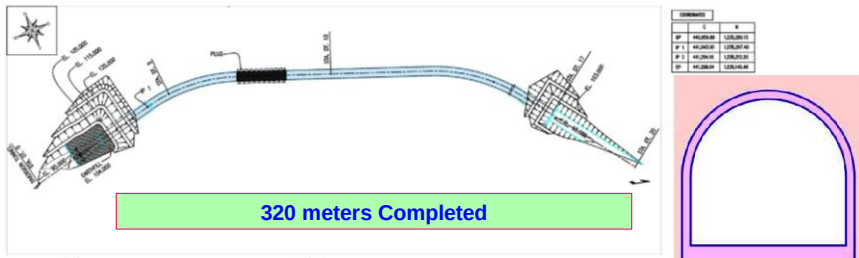
CONSTRUCTION PROGRESS

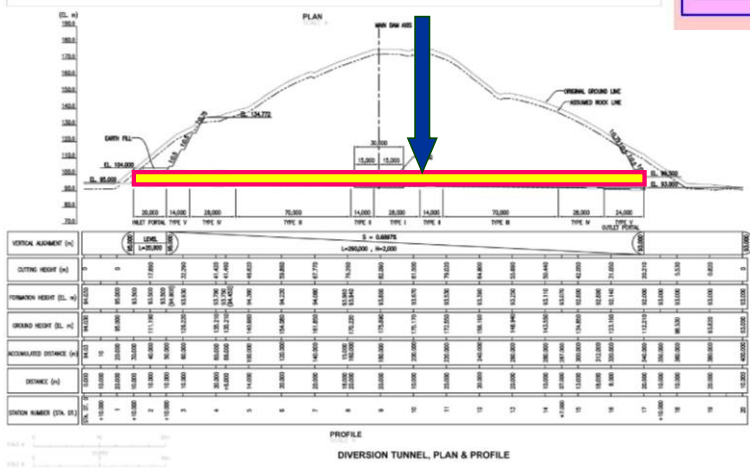
JALAUR RIVER MULTI-PURPOSE PROJECT STAGE II (JRMP II)

13

14

15





JALAUR HIGH DAM
DIVERSION TUNNEL

16

➢ HIGH DAM - DIVERSION TUNNEL

Inlet Portal

Outlet Portal

17

➢ HIGH DAM - DIVERSION TUNNEL

Inside of the Tunnel

18

19

AFTERBAY DAM - DIVERSION TUNNEL

Outlet Portal

Inlet Portal

Ongoing Excavation Work at the Inlet & Outlet Portal of the Tunnel

20

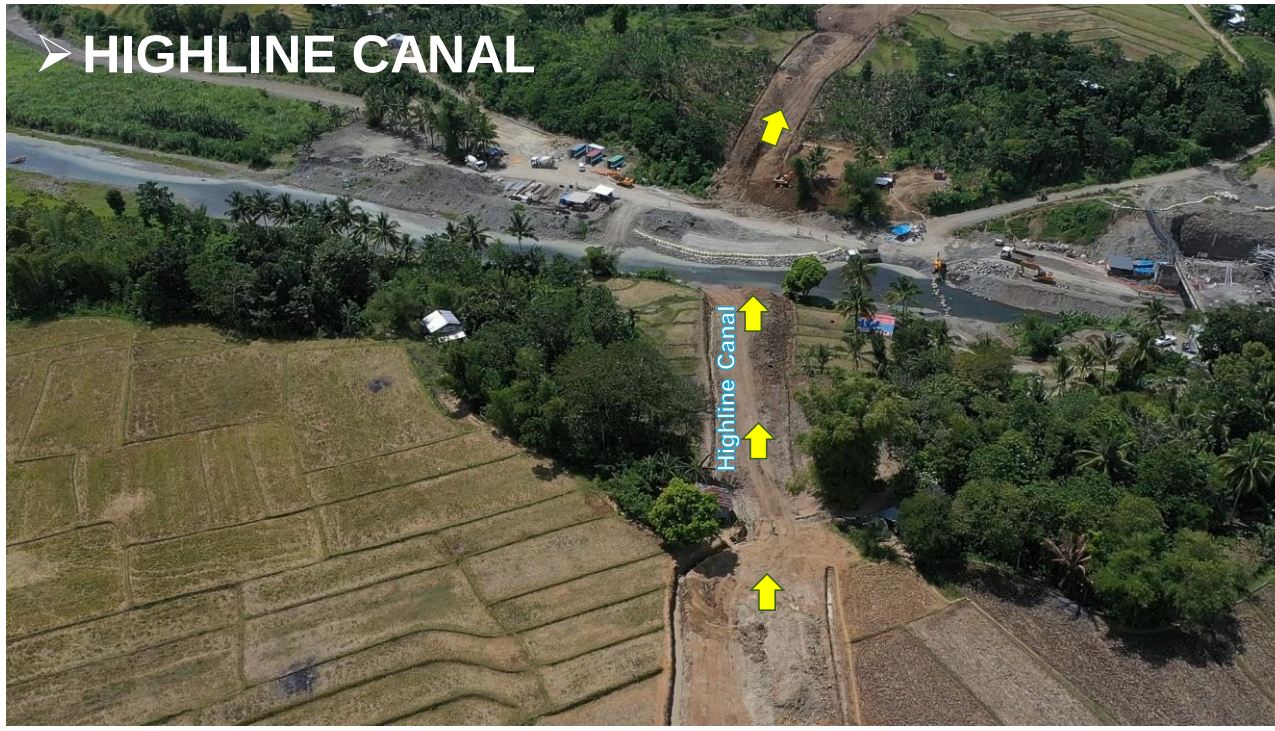
➢ ALIBUNAN RIVER CATCH DAM

21

➢ CATCH DAM – PROGRESS PHOTOS

22

➢ HIGHLINE CANAL



23

➢ HIGHLINE CANAL – PROGRESS PHOTOS

Siphon #2
Brgy. Toyungan, Calinog, Iloilo

Cut & Cover #2
Calinog, Iloilo

24

❑ RESETTLEMENT AREA

25

❑ RESETTLEMENT AREA

ACCESS ROAD DEVELOPMENT

JALAUR RIVER MULTIPURPOSE PROJECT STAGE II

National Irrigation Administration

26

INFRASTRUCTURE DEVELOPMENT

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

Brgy. Acuña, Municipality of Tapaz, Province of Capiz

PROJECT OBJECTIVES & BENEFITS

- ✓ Increase service area for Irrigation from 12, 850 hectares to 26, 800 hectares
- ✓ Flood Mitigation
- ✓ Generate 18 megawatts Hydroelectric Power supply
- ✓ Generate 3 cubic meters/second Bulk Water supply
- ✓ Generate Eco-Cultural Tourism Opportunities
- ✓ Generate Inland Fishery Opportunities
- ✓ Generate employment opportunities

jump2engineering@gmail.com

National Irrigation Administration
Region VI, Brgy. Tocas, Jaro, Iloilo City, Philippines 5000

27

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT (PRBIDP)

PANAY HIGH DAM
Brgy. Acuña, Tapaz

LEFT HIGHLINE CANAL (78 KM)

AFTERBAY DAM
Brgy. Garcia, Tapaz

Panay River

Panay River

RIGHT HIGHLINE CANAL (80 KM)

PROJECT LOCATION

Google Earth

Imagery Date: 9/12/2018 11°13'24.02" N 122°28'41.24" E elev 81 m eye alt 6.26 km

28

CONSTRUCTION PROGRESS

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT (PRBIDP)

29

❑ PRBIDP Construction of Road Networks

Brgy. Acuña to High Dam

30

❑ PRBIDP Construction of Road Networks

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

National Irrigation Administration

31

❑ PRBIDP Construction of Road Networks

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

National Irrigation Administration

32

❑ PRBIDP Construction of Road Networks

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

National Irrigation Administration

33

❑ PRBIDP Construction of Road Networks

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

National Irrigation Administration

34

❑ PRBIDP Construction of Road Networks

35

❑ PRBIDP Construction of Road Networks

36

❑ PRBIDP Construction of Road Networks

PANAY RIVER BASIN INTEGRATED DEVELOPMENT PROJECT

National Irrigation Administration

37

INFRASTRUCTURE DEVELOPMENT

BAROTAC VIEJO SMALL RESERVOIR IRRIGATION PROJECT

PROJECT OBJECTIVES & BENEFITS

- ✓ Increase service area for Irrigation from 1,785 hectares to 2,050 hectares
- ✓ Flood Mitigation
- ✓ Generate Eco-Cultural Tourism Opportunties
- ✓ Generate Inland Fishery Opportunities
- ✓ Generate employment opportunities

National Irrigation Administration

38

40

41

42

INFRASTRUCTURE DEVELOPMENT

MAGBALLO-BALICOTOC-CANLAMAY INTEGRATED IRRIGATION PROJECT (BINALAWAN BUTTRESS DAM)

PROJECT PROFILE	
Location	**Ilog, Negros Occidental**
Water Source	**Binalawan River**
Municipalities Covered	**Kabankalan City & Ilog**
Service Area	**2,985.80 has**
Farmer Beneficiaries	**595**
Project Description	**Construction of Buttress Type Reservoir Dam**
Purpose	**Irrigation**
Status	**Completed**

jump2engineering@gmail.com

National Irrigation Administration

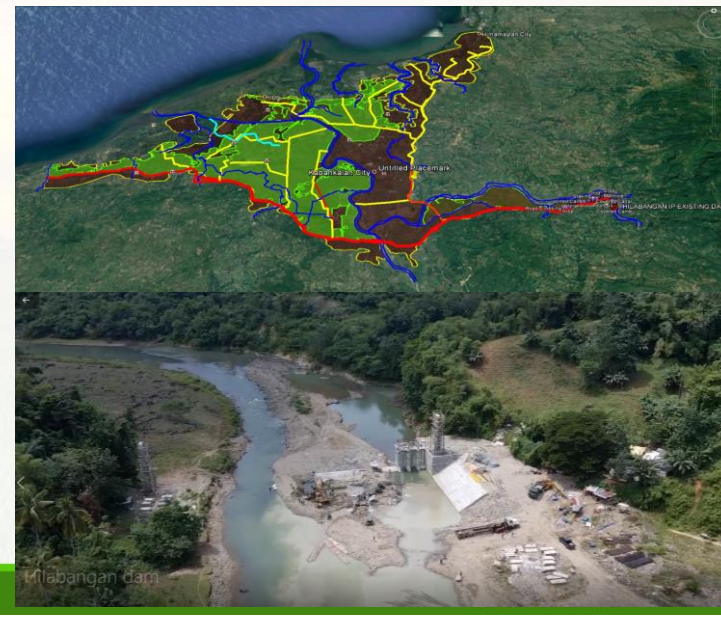
Region VI, Brgy. Tacas, Jaro, Iloilo City, Philippines 5000

43

INFRASTRUCTURE DEVELOPMENT

HILABANGAN IRRIGATION PROJECT

PROJECT PROFILE	
Location	**Kabankalan City**
Water Source	**Hilabangan River**
Municipalities Covered	**Kabankalan City, Ilog, Cauayan, Himamaylan City**
Potential Service Area	**3,300 hectares**
Farmer Beneficiaries	**1,917**
Project Description	**Construction of Diversion Dam, Canals, Canal Structures and Office Building**
Status	**On-going**



44

INFRASTRUCTURE DEVELOPMENT

MALOGO IRRIGATION PROJECT

PROJECT PROFILE	
Location	Barangay Consing, E.B. Magalona City
Water Source	Malogo River
Municipalities Covered	Silay City and E.B. Magalona
Potential Service Area	8,625 hectares
Farmer Beneficiaries	234
Project Description	Construction of Diversion Dam, Canals and Canal Structures
Status	**On going**

45

INFRASTRUCTURE DEVELOPMENT

OTHER PROJECTS

Name of Project	Location	Level of Study
Bayuyan SRIP	Pres. Roxas, Capiz	For Bidding
Cabano SRIP	San Lorenzo, Guimaras	Detailed Engineering
Panay River Basin Integrated Development Project	Tapaz, Capiz	Detailed Engineering
San Dionisio SRIP	San Rafael, Iloilo	Feasibility Study
Almiñana SRIP	Lemery, Iloilo	Feasibility Study
Aripdip SRIP	San Rafael, Iloilo	Feasibility Study
Asue River Multi-purpose Project	Sara, Iloilo	Feasibility Study
San Florentino SRIP	San Rafael, Iloilo	Feasibility Study
Tyabanan SRIP	Hinoba-an, Negros Occidental	Feasibility Study
Malogo SRIP	Silay City, Negros Occidental	Pre-Feasibility Study
Cadiz Irrigation Project	Cadiz City, Negros Occidental	Pre-Feasibility Study

46

INFRASTRUCTURE DEVELOPMENT

✓ CONCRETING OF CANAL LININGS

47

INFRASTRUCTURE DEVELOPMENT

CAGBAN SMALL FARM RESERVOIR, CABATUAN

✓ **CONSTRUCTION OF RETENTION PONDS FOR AGRICULTURAL WASTE WATER RECYCLING**

- ❑ Maximize use of water for agricultural purpose
- ❑ Encourage re-use of Agricultural Waste Water
- ❑ Prevent loss of water
- ❑ Collect rainwater for use in agricultural farms
- ❑ Lessen competition for water use because of agricultural waste water recycling

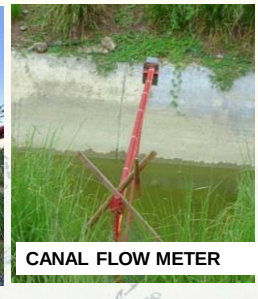
SMALL CHECK TYPE STRUCTURES IN THE SERVICE AREA OF AGANAN-STA. BARBARA IRRIGATION SYSTEM AND IN CABATUAN, PROVINCE OF ILOILO

48

INFRASTRUCTURE DEVELOPMENT

✓ **USE OF SMART TECHNOLOGY IN WEATHER AND SURFACE WATER MONITORING**

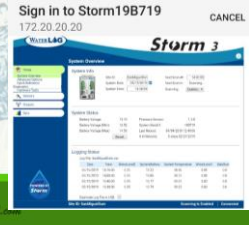
RAIN GAUGE

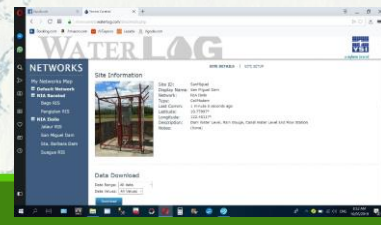


CANAL FLOW METER

WATER LEVEL GUAGE

TELEMETRY DEVICE

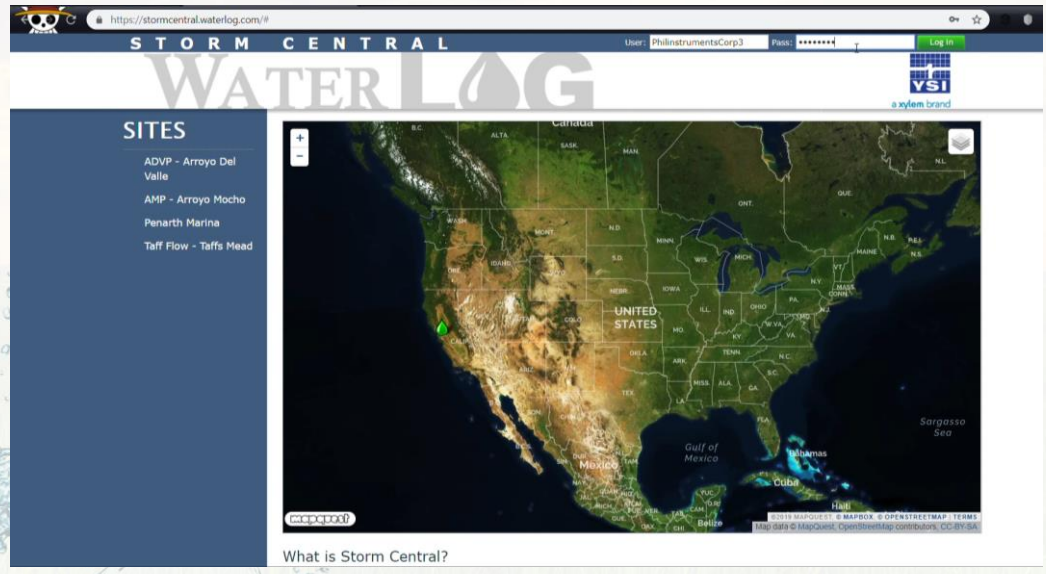




ONLINE AND MOBILE MONITORING

49

INFRASTRUCTURE DEVELOPMENT



50

WATER AUDIT AS A TOOL TO EFFECTIVE AND EFFICIENT MANAGEMENT OF WATER RESOURCES

Water Audit - is an accounting of all of the water in a water system resulting in a quantified understanding of the integrity of the water system and its operation. It is the first step in formulating an economically sound plan to address water losses.

(US Environmental Protection Agency)

51

INFRASTRUCTURE DEVELOPMENT

MAJOR WATER USES IN THE PHILIPPINES

AGRICULTURE

DOMESTIC AND INDUSTRIAL

HYDROPOWER

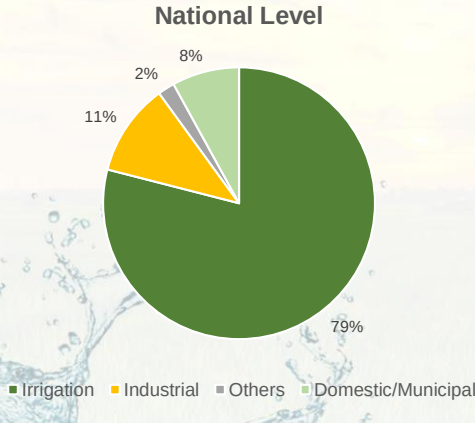
A water audit allows water users to make scientific and sound decisions as to prioritization of water use and related infrastructure development

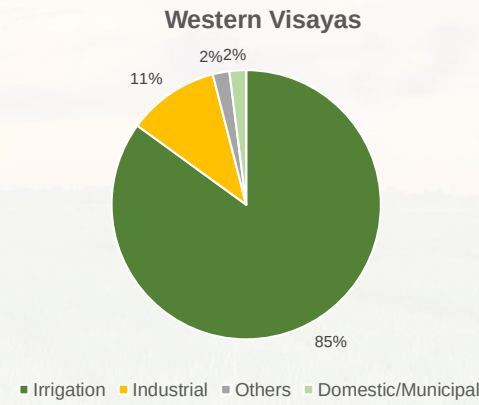
52

INFRASTRUCTURE DEVELOPMENT

WATER RESOURCE ALLOCATION BY PURPOSE

(as of December 2014)



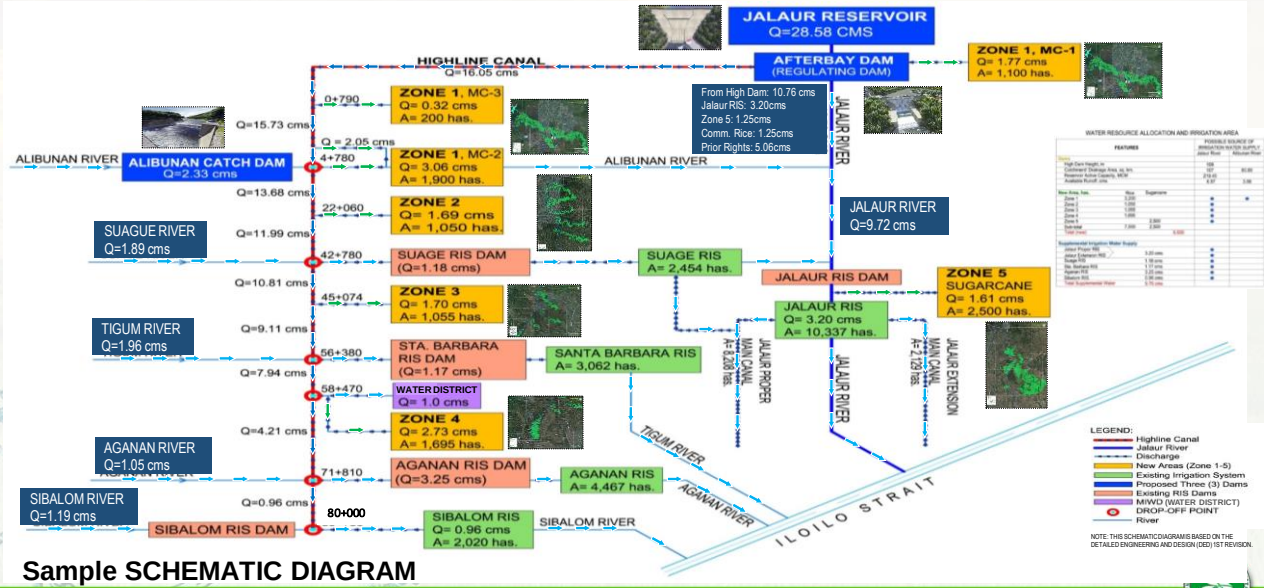


Considering hydropower use as non-consumptive. Agriculture is the major user compared to domestic/municipal, industrial and other uses both at the national and for the Western Visayas Region.

Source: National Water Resources Board 2014 Annual Report

53

INFRASTRUCTURE DEVELOPMENT



Sample SCHEMATIC DIAGRAM of WATER DISTRIBUTION for JRMPII

54

ENVIRONMENTAL MANAGEMENT

- **IMPLEMENTATION OF WATERSHED MANAGEMENT PLAN**
  - **BUFFER ZONE MANAGEMENT**
  - **REFORESTATION AND CARBON-SINK PROGRAM**
  - **AGRO-FORESTRY PROGRAM**

55

ENVIRONMENTAL MANAGEMENT

WATERSHED MANAGEMENT

OBJECTIVES

- ✓ Ensure water availability, sustainability, quality and timing
- ✓ Provide streambank protection for the reservoir
- ✓ Provide Sediment Control mechanism
- ✓ Ensure longevity of the dam's lifespan
- ✓ Increase forest cover in the watershed area
- ✓ Provide mechanism for Biodiversity Conservation

ENVIRONMENTAL MANAGEMENT

- ✓ **BUFFER ZONE MANAGEMENT**
  - ❑ **Provide Natural Slope Protection for reservoir dams**
  - ❑ **Provide Natural Filter for Surface Run Off**
  - ❑ **Provide Reforestation and Biodiversity Strip**

ENVIRONMENTAL MANAGEMENT

- ✓ **PROPOSED REFORESTATION AND AGRO-FORESTRY PLAN FOR JRMP II**

58

SOCIAL AND INSTITUTIONAL DEVELOPMENT

- **ORGANIZATION AND STRENGTHENING OF IRRIGATORS' ASSOCIATIONS**
  - **PREPARATION OF CROPPING CALENDAR AND PATTERN OF PLANTING BASED ON CLIMATE FORECAST**
  - **PREPARATION OF WATER DELIVERY AND DISTRIBUTION SCHEDULES**

59

SOCIAL AND INSTITUTIONAL DEVELOPMENT

IRRIGATORS' ASSOCIATIONS AS PARTNERS FOR SUSTAINABLE AGRICULTURAL DEVELOPMENT

- Where water is seen as an increasingly scarce resource, the **PARTICIPATORY PLANNING** and **STRONG COORDINATION** among irrigators' associations ensures **EFFICIENT** and **EQUITABLE WATER DISTRIBUTION** to all irrigated areas.

jump2engineering@gmail.com

National Irrigation Administration
Region VI, Brgy. Tocas, Jaro, Iloilo City, Philippines 5000

60

National Irrigation Administration
Region 6

THANK YOU FOR LISTENING!...

"Alone we can do so little, together we can do more"...

61