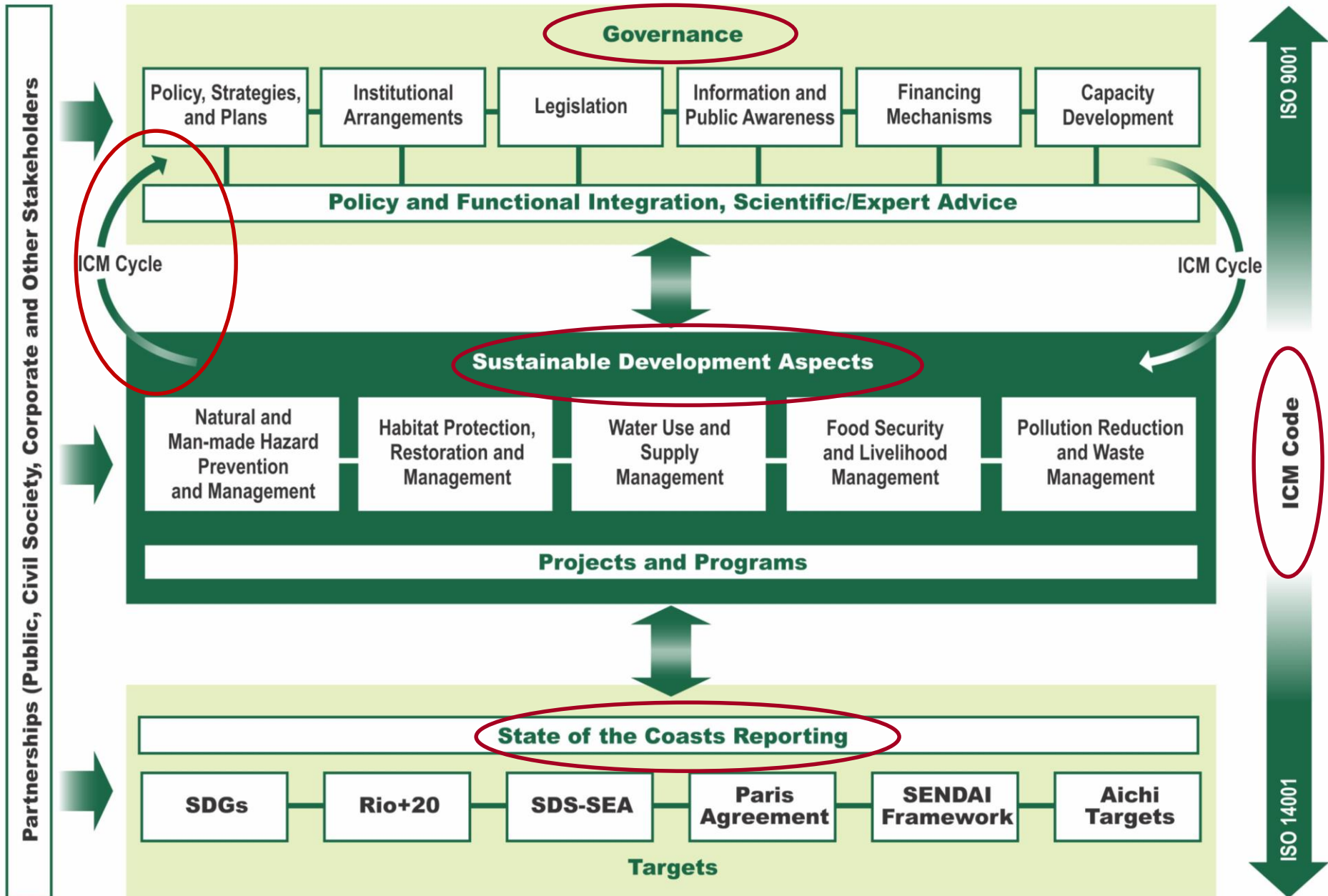




Integrated Information Management System (IMS)



Framework for Sustainable Development of Coastal Areas



Establishment

Application



Establishment, applications and updating of IIMS

Integrated Information Management System (IIMS)

What is IIMS?

IIMS is a decision-support system (DSS) to facilitate coastal and river basin management

- A database program to facilitate storage, management and retrieval of data in an efficient manner for use by multi-users across disciplines and sectors
- A database containing an organized collection of environmental data that have been structured to support a variety of processing and reporting needs
- A decision support system providing vital information to managers/decision makers to evaluate alternatives so that possible best one is chosen

Issues being addressed by IIMS

- lack of a standardized system for data collection, collation and recording
- uncertainties regarding data quality and sources of data;
- inadequate data analysis & interpretation, & packaging of information for use by decision-makers, managers and planners; and
- inaccessibility of data

Data Categories of the RB-IIMS

Data Categories

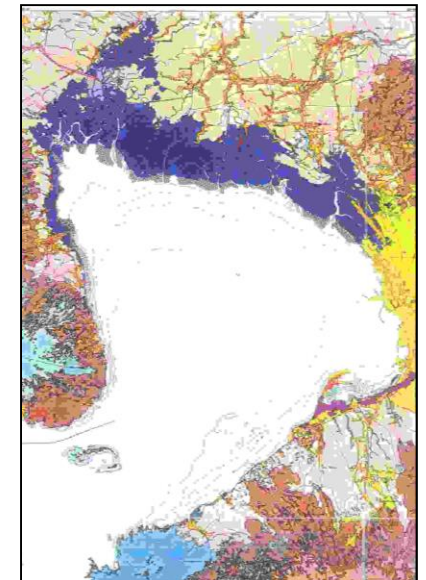
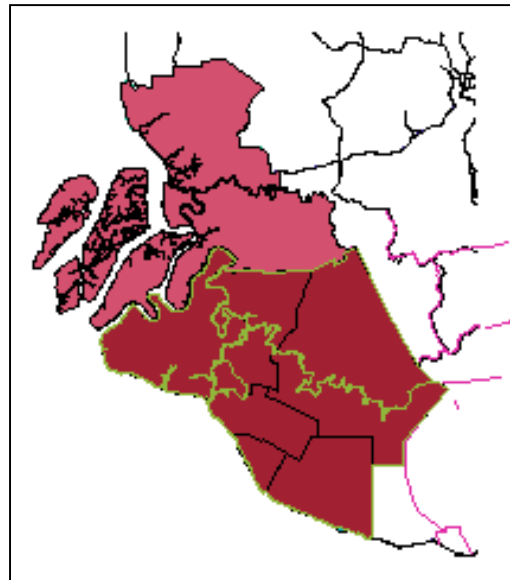
- Regions/Site
- Biological and bioresource data
- Socioeconomic data
- Governance
- Demographic data
- Pollution sources data
- Water resources data
- Environmental quality data
- Physiographic
- Hazards
- Natural and cultural heritage

Unique features of the IIMS

- ☑ Comprehensive database with user-friendly query system containing technical and management data needed for environmental management, planning and decision-making

Region/Site

- @ Region/site
- @ Watershed
- @ Bodies of water
- @ Data classes
- @ Geospatial data
- @ Maps



Biological resources

- @ fish resources
- @ aquaculture resources
- @ coral reef
- @ seagrass
- @ seaweeds
- @ benthos
- @ phytoplankton
- @ zooplankton
- @ wetland
- @ forest



Socioeconomic data

- @ fisheries
- @ aquaculture
- @ agriculture
- @ forestry
- @ mining and quarrying
- @ ports
- @ industries
- @ tourism
- @ commercial/ institutional
- @ utilities
- @ reclamation
- @ foreshore development



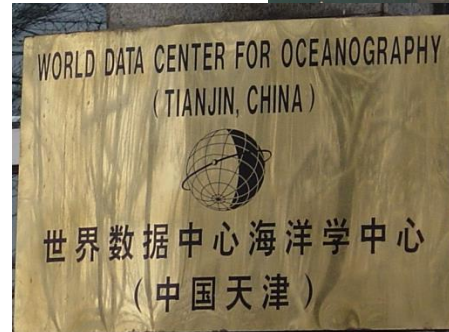
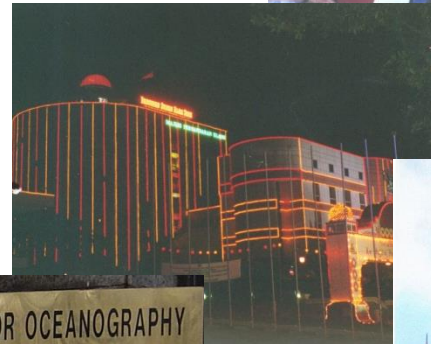
Demography

- @ census
- @ employment
- @ income
- @ poverty
- @ education
- @ waterborne diseases
- @ religion
- @ vital health statistics
- @ malnutrition



Governance data

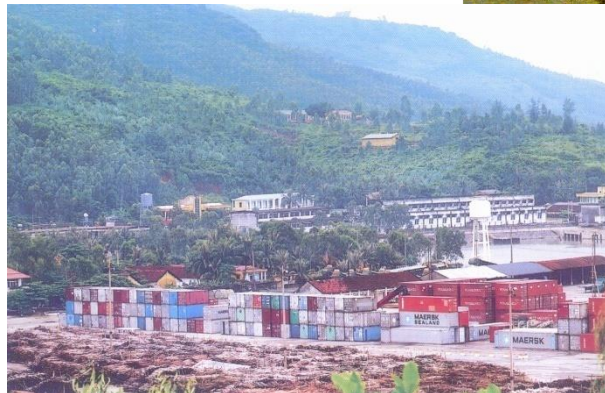
- @ government
- @ plans
- @ sectors



Pollution sources

⌚ land-based

⌚ sea-based



Environmental quality

- @ Bodies of water
 - @ Water quality
 - @ Sediment quality
 - @ Tissue analysis
- @ Groundwater quality
- @ Air quality



Water resources

- ⌚ Infrastructure
- ⌚ Water supply, use and sanitation



Physiographic data

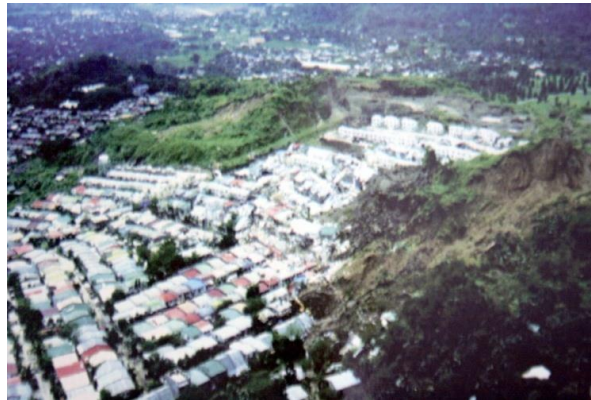
- ④ Oceanographic data
- ④ Hydro-meteorological
- ④ Geological data
- ④ Pedology/soils data



Natural and human-made hazards

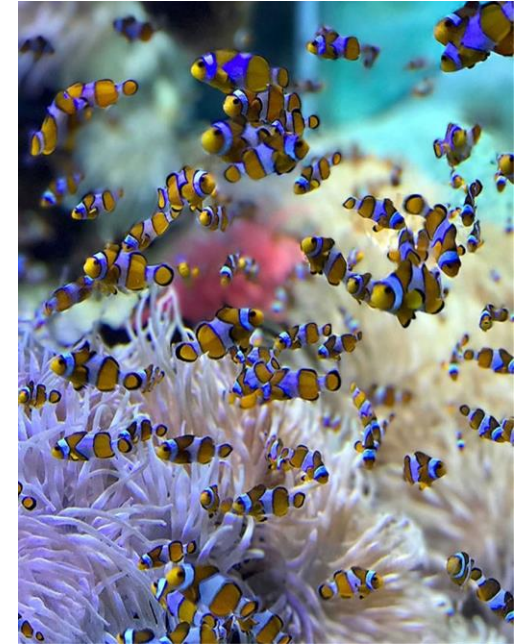
@ hazards

@ hazard prone areas



Natural and cultural heritage

- ⌚ Natural heritage
- ⌚ Cultural heritage



Applications of the IIMS in the EAS Region



WEB-BASED RIVER BASIN INTEGRATED INFORMATION MANAGEMENT SYSTEM (RB-IIMS)

Development of Web-based RB-IIMS

2017

1. MOA signed between DENR and PEMSEA (December 2017)

2018

2. Inception meeting (January 2018)

3. Approved system design (April 2018)

4. System development (April 2018 onwards)

5. Initial User Acceptance Testing (UAT) workshop (November 2018)

6. System development based on feedback from UAT (December 2018 – June 2019)

2019


7. Training of Trainers on web-based RB-IIMS (June 2019)

8. Initial roll-out of web-based RB-IIMS (August 2019)

RB-IIMS Webpage

RB-IIMS - River Basin Control Off

Not secure | rb-iims-test.dendr.gov.ph

 **RB-IIMS**

[HOME](#) [RIVER BASIN](#) [ABOUT RB-IIMS](#) [CONTACT US](#) [LOG IN TO RB-IIMS](#)

Log In to RB-IIMS

Update Your Data

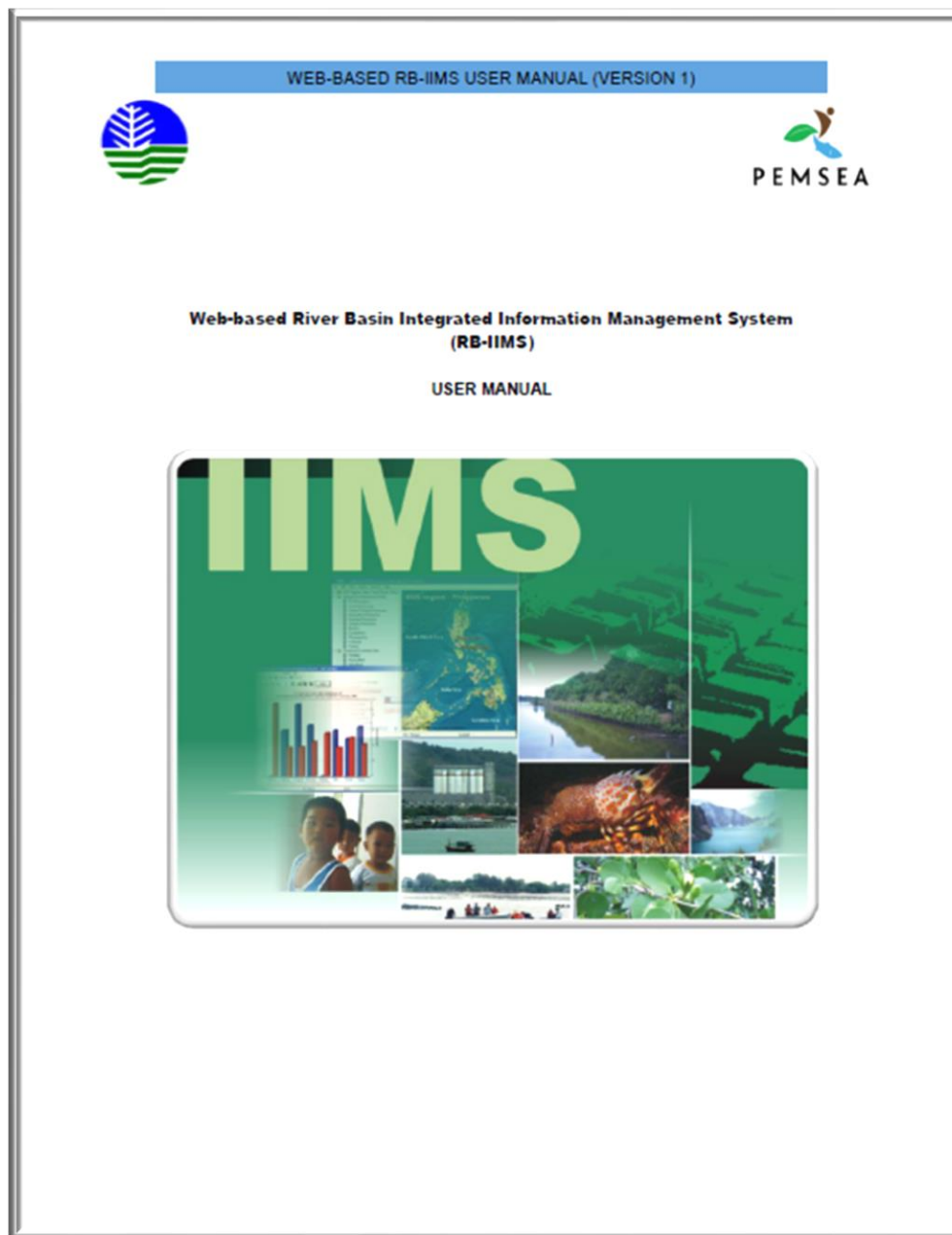
or contact RBCO to get access

[Log In](#)

RB-IIMS - River Basin ... Microsoft Office Com... RB-IIMS Rollout_27 Au... 1 Intro to Training Co... Snipping Tool

ENG 9:50 AM

Web-based RB-IIMS User Manual



RB-IIMS Main Menu

The screenshot displays the RB-IIMS web application interface. At the top, a browser window shows the URL `rb-iims-test.denr.gov.ph/Dashboard`. The application header includes the RB-IIMS logo, a navigation menu, and user information for `admin_iims@denr.gov.ph`. The main content area features a map of the Philippines, with a dropdown menu set to 'ABRA RIVER BASIN'. The map is titled 'PHILIPPINE RIVER BASIN' and shows various river basins across the country. A sidebar on the left lists navigation options: 'River Basin Info', 'IIMS Regions, Sites, Data Classes, Geospatial', 'Regions, Sites', 'Watershed/River Basin', 'Bodies of Water', 'Data Classes', 'Geospatial', 'Maps', 'Biological & Bioresource Data', 'Social & Economic Data', 'Demographic Data', 'Governance Data', 'Pollution Sources Data', 'Water Resources', 'Environment Quality', 'Physiographic Data', 'Natural and Human-Made Hazards', and 'Natural and Cultural Heritage'. The bottom of the screen shows a Windows taskbar with several open applications.

RB-IIMS Data Categories

RB-IIMS Data Categories

RB-IIMS

ABRA RIVER BASIN

SQL Builder

Predefined Queries

River Basin Info

- KB-IIMS
- IIMS Regions, Sites, Data Classes, Geospatial
 - Regions, Sites
 - Watershed/River Basin
 - Bodies of Water
 - Data Classes
 - Geospatial
 - Maps
- Biological & Bioresource Data
- Social & Economic Data
- Demographic Data
- Governance Data
- Pollution Sources Data
- Water Resources
- Environment Quality
- Physiographic Data
- Natural and Human-Made Hazards
- Natural and Cultural Heritage

PHILIPPINE RIVER BASIN

Hover over a river basin

RB-IIMS | RB-IIMS - G...

Microsoft Office Com...

RB-IIMS Rollout_27 Au...

1 Intro to Training Co...

Snipping Tool

RB-IIMS Units of Measure

RB-IIMS | Regions, Sites, Province x

Not secure | rb-iims-test.dentr.gov.ph/RegionSites/Sites#

MANILA BAY

daisy_test@pemsea.org
Daisy Padayao

SQL Builder Print

Regions, Sites, Provinces and Barangays

Province | Province No.: 6

*PROVINCE

COUNTRY

DETAILS

LONGITUDE (decimal deg)

LATITUDE (decimal deg)

LENGTH OF COASTLINE(km)

PROVINCE AREA(sq km)

MAP

NAME

GEOGRAPHIC CODE

DESCRIPTION

* - required field

Create

RB-IIMS Units of Measure

RB-IIMS | Water Quality Data

Not secure | rb-iims-test.denr.gov.ph/EnvironmentQuality/WaterQualityData#

MANILA BAY

daisy_test@pemsea.org
Daisy Padayao

SQL Builder

River Basin Info

Water Quality Data

Metals | METAL NO.: 1

Cancel

STATION ID

*OBSERVATION NO.

SAMPLE DEPTH (m)

SALINITY (ppt)

TEMPERATURE (Deg C)

pH

ARSENIC (ug/L)

COLUMN (ug/L)

CADMIUM (ug/L)

COPPER (ug/L)

IRON (ug/L)

LEAD (ug/L)

MERCURY (ug/L)

NICKEL (ug/L)

SILVER (ug/L)

The IIMS Query System

RB-IIMS Query System

RB-IIMS Query System interface showing the ABRA RIVER BASIN selected. The interface includes a sidebar with navigation options, a main map area, and a dropdown menu for the SQL Builder.

Navigation Sidebar:

- River Basin Info
 - KB-IIMS
 - IIMS Regions, Sites, Data Classes, Geospatial
 - Regions, Sites
 - Watershed/River Basin
 - Bodies of Water
 - Data Classes
 - Geospatial
 - Maps
 - Biological & Bioresource Data
 - Social & Economic Data
 - Demographic Data
 - Governance Data
 - Pollution Sources Data
 - Water Resources
 - Environment Quality
 - Physiographic Data
 - Natural and Human-Made Hazards
 - Natural and Cultural Heritage

Main Map Area:

SITE: ABRA RIVER BASIN

PHILIPPINE RIVER BASIN

SQL Builder Dropdown Menu:

- River Basin Profile
- Provinces, Municipalities and Barangay Covered
- List of Rivers in the Watershed
- List of Rivers
- Land/Water Use/Cover
- River Water Quality
- Criteria/Standard
- Water Quality with Criteria/Standard
- Forest Cover
- Forest Cover (Woody Plants)

System Information:

ABRA RIVER BASIN

admin_jims@denr.gov.ph
System Network Administrator

SQL Builder

Predefined Queries

Windows Taskbar: RB-IIMS Access.docx - DENR, RB-IIMS | RB-IIMS - G..., Microsoft Office Com..., RB-IIMS Rollout_27 Au..., 1 Intro to Training Co..., Snipping Tool

System Tray: ENG 9:56 AM

RB-IIMS Query System

RB-IIMS | SQL Query Builder

Not secure | rb-iims-test.denr.gov.ph/SQLBuilder

RB-IIMS

daisy_test@pemsea.org
Daisy Padayao

Query Builder | Query Results

Database

Find

- Fish Species Inventory
 - B.2 Coral Reef Survey
 - Reef Fish Survey
 - Reef Survey Inventory
- C. Social and Economic Data
 - D. Demographic Data
 - Census
 - Education
 - Employment
 - Employment by Education
 - Income
 - Malnutrition
 - Poverty
 - Religion
 - Vital Statistics
 - Waterborne Diseases
- E. Governance Data
 - E.1 Government
 - Basic Information

Provinces/Country

- ☐ *
- ☐ PROVINCE_NO int
- ☐ SITE_NO int
- ☒ PROVINCE varchar (80)
- ☐ COUNTRY varchar (40)
- ☐ DESCRIPTION varchar (MAX)
- ☐ LENGTHOFCOASTLINE decimal (12,2)
- ☐ PROVINCEAREA decimal (12,4)
- ☐ MAP_NO int
- ☐ LONGITUDE decimal (12,4)
- ☐ LATITUDE decimal (12,4)

Cities and Municipalities

- ☐ *
- ☐ CITY_MUN_NO int
- ☐ SITE_NO int
- ☐ PROVINCE_NO int
- ☒ MUNICIPALITY_CITY varchar (30)
- ☐ MUN_CITY_PERIMETER decimal (12,4)
- ☐ TRUE_AREA decimal (12,4)
- ☐ LENGTHOFCOASTLINE decimal (12,2)
- ☐ LOCATION varchar (15)
- ☐ DESCRIPTION varchar (MAX)
- ☐ LONGITUDE decimal (12,4)

Barangays

- ☐ *
- ☐ BARANGAY_NO int
- ☐ SITE_NO int
- ☐ CITY_MUN_NO int
- ☒ BARANGAY varchar (50)
- ☐ PERIMETER decimal (12,2)
- ☐ TRUE_AREA decimal (12,4)
- ☐ MAP_NO int
- ☐ DESCRIPTION varchar (MAX)
- ☐ LOCATION varchar (15)
- ☐ LONGITUDE decimal (12,4)
- ☐ LATITUDE decimal (12,4)

Census

- ☐ *
- ☐ CENSUS_NO int
- ☐ SITE_NO int
- ☐ BARANGAY_NO int
- ☒ DATAYEAR smallint
- ☒ TOT_POPULATION int
- ☒ MALE_POPULATION int
- ☒ FEMALE_POPULATION int
- ☐ MEDIAN_AGE smallint
- ☐ NUM_HOUSEHOLDS int
- ☐ POPULATION_GROWTH decimal (12,4)

Datasource properties

Visible	Expression	Column Name	Sort Type	Sort Order	Aggregate	Group...	Criteria	Or...
<input checked="" type="checkbox"/>	[Provinces/Country].PROVINCE					<input type="checkbox"/>		
<input checked="" type="checkbox"/>	[Cities and Municipalities].MUNICIPALITY_CITY					<input type="checkbox"/>		
<input checked="" type="checkbox"/>	Barangays.BARANGAY					<input type="checkbox"/>		

Select [Provinces/Country].PROVINCE,
[Cities and Municipalities].MUNICIPALITY_CITY,
Barangays.BARANGAY,
Census.DATAYEAR,
Census.TOT_POPULATION,
Census.MALE_POPULATION,
Census.FEMALE_POPULATION
From [Provinces/Country],
[Cities and Municipalities].

Sample Query Result

RB-IIMS | SQL Query Builder

Not secure | rb-iims-test.denr.gov.ph/SQLBuilder

RB-IIMS

daisy_test@pemsea.org
Daisy Padayao

Query Builder Query Results

Where All of the following succeed

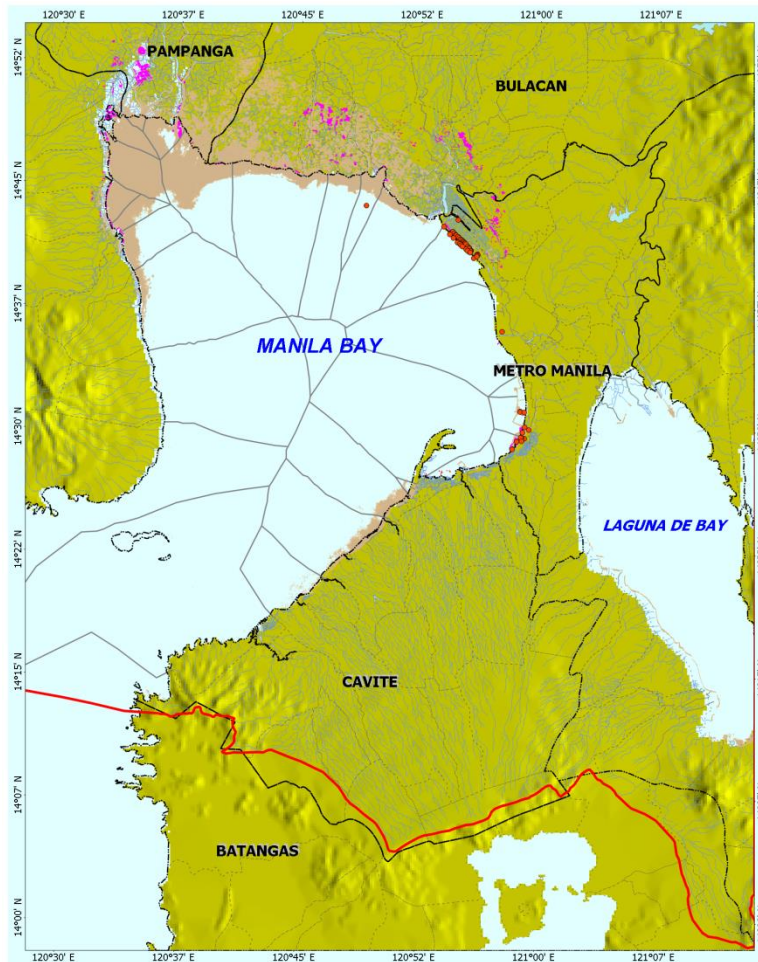
Result Grid Your SQL

Print

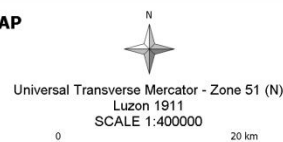
PROVINCE	MUNICIPALITY_CITY	BARANGAY	DATAYEAR	TOT_POPULATION	MALE_POPULATION	FEMALE_POPULATION
Bulacan	Plaridel	Barangay Uno	1900	250	10	240

Go to page: 1 Show rows: 10 1-10 of 9999999

Environmental profile & atlas

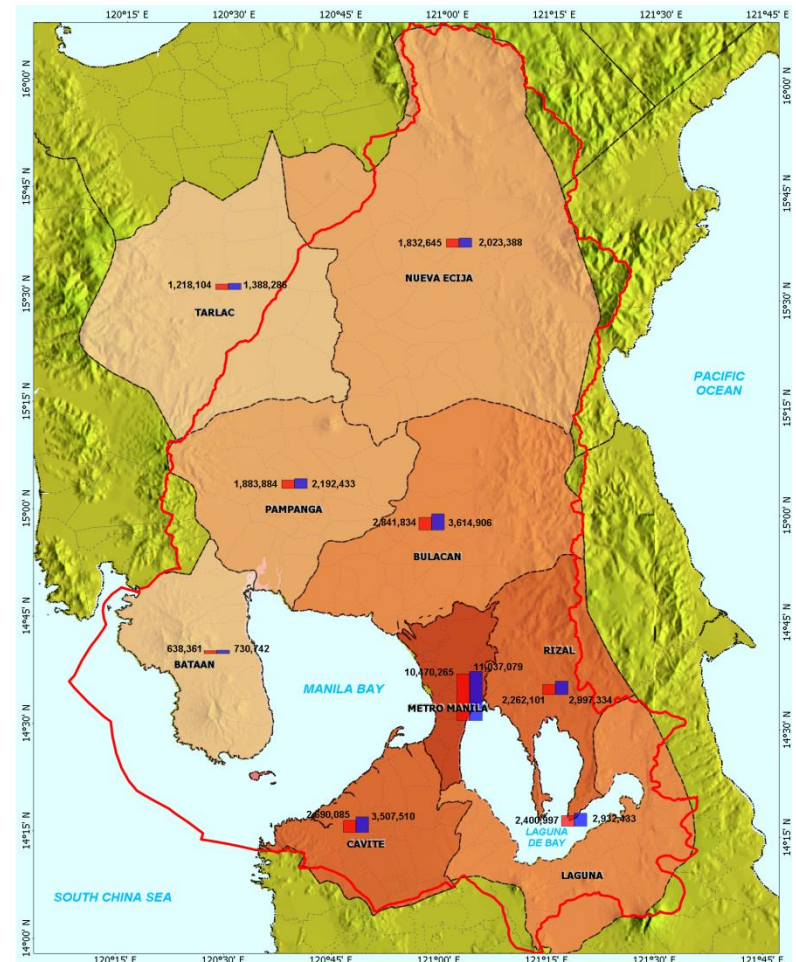


COASTAL HABITAT MAP

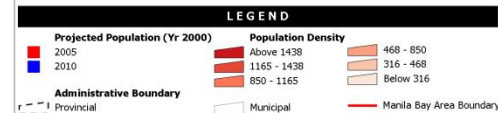


Source of Information
Caoastal Habitat - Protected Areas and Wildlife Bureau
Political Boundary - NAMRIA Topographic Map Scale 1:50000

Note: Political boundaries are not authoritative and used as reference only.



DEMOGRAPHIC MAP



Source: NAMRIA Topographic Map Scale 1:50000
National Statistics office (2000 Census of Population)

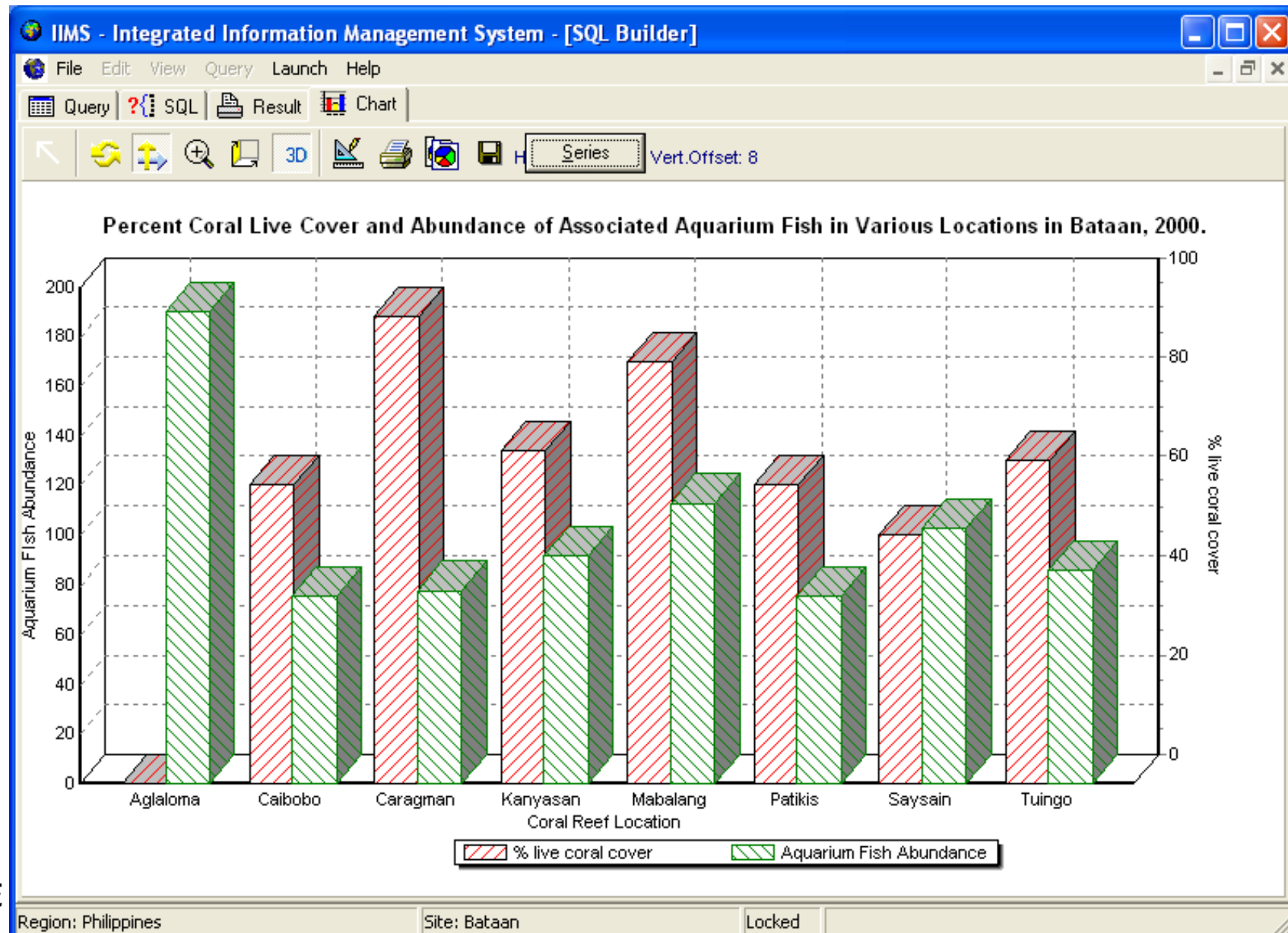
Note: Administrative boundary should not be used for settlement of existing boundary conflicts.

Institutional arrangements

Municipal Ordinances Related to Coastal Management, Municipality of Morong, Bataan

Effective Date	Ordinance
01/18/99	Municipal Ordinance No. 04 Series of 1999: Regulating the gathering, shipment, sale and distribution of shellfish within the municipality of Morong, Province of Bataan.
02/22/99	Municipal Resolution No. 9 Series of 1999: Resolution penalizing unsanitary backyard piggery owners emitting bad odor inimical to the health of neighboring residents.
06/07/99	Municipal Resolution No. 24 Series of 1999: Resolution enacting Municipal Ordinance No. 06, otherwise known as an ordinance on DENR Pawikan Conservation Project (PCP) within the Municipality of Morong, Province of Bataan.
03/06/00	Municipal Ordinance No. 10 Series of 2000: Basic Fishery Ordinance No. 10 of the Municipality of Morong.
1/06/00	Municipal Ordinance No 11, Series of 2000: Comprehensive Solid Waste Ordinance of the Municipality of Morong.

Habitat protection



Benefits from IIMS

IIMS is a DSS and provides variety of inputs and services to ICM and river basin management

- Access to large multi-sector database
- Standardized system of data collection, formatting and recording
- Predefined procedures for analyzing, packaging and presenting scientific data in a format that serves a number of data users
- Assess effectiveness of management interventions by recording and analyzing social, economic and ecological trends
- Enhance information access and usage by decision makers, planners and managers

Challenges

- Team with right expertise
- Data and data sharing
- Policies and protocols
- Sustainability
- Budget



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