Integrated Information Management System (IMS)
Partnerships in Environmental Management for the Seas of East Asia

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

- 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

- Oceanographic data
- Hydro-meteorological data
- Geological data
- 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

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

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)

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

8. Initial roll-out of web-based RB-IIMS (August 2019)
Web-based RB-IIMS User Manual
RB-IIMS Main Menu

ABRA RIVER BASIN

PHILIPPINE RIVER BASIN

Hover over a river basin
**RB-IIMS Units of Measure**

### Table of Measures

<table>
<thead>
<tr>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>LONGITUDE (decimal deg)</td>
</tr>
<tr>
<td>LATITUDE (decimal deg)</td>
</tr>
<tr>
<td>LENGTH OF COASTLINE (km)</td>
</tr>
<tr>
<td>PROVINCE AREA (sq km)</td>
</tr>
</tbody>
</table>

### Additional Information

- **Country**: Not specified
- **Province**: Not specified
- **Map Name**: None
- **Geographic Code**: Not specified
- **Description**: Not specified

* - required field
# RB-IIMS Units of Measure

## Water Quality Data

### Metals | METAL NO. 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
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<tbody>
<tr>
<td>SAMPLE DEPTH (m)</td>
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</tr>
<tr>
<td>SALINITY (ppt)</td>
<td></td>
</tr>
<tr>
<td>TEMPERATURE (Deg C)</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td></td>
</tr>
<tr>
<td>ARSENIC (ug/L)</td>
<td></td>
</tr>
<tr>
<td>COLUMN (ug/L)</td>
<td></td>
</tr>
<tr>
<td>CADMIUM (ug/L)</td>
<td></td>
</tr>
<tr>
<td>COPPER (ug/L)</td>
<td></td>
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<tr>
<td>IRON (ug/L)</td>
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</tr>
<tr>
<td>LEAD (ug/L)</td>
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</tr>
<tr>
<td>MERCURY (ug/L)</td>
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</tr>
<tr>
<td>NICKEL (ug/L)</td>
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</tr>
<tr>
<td>SILVER (ug/L)</td>
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</table>
The IIMS Query System
RB-IIMS Query System
RB-IIMS Query System

Sample Query Result

<table>
<thead>
<tr>
<th>PROVINCE</th>
<th>MUNICIPALITY_CITY</th>
<th>BARANGAY</th>
<th>DATAYEAR</th>
<th>TOT_POPULATION</th>
<th>MALE_POPULATION</th>
<th>FEMALE_POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulacan</td>
<td>Pinaldel</td>
<td>Barangay Uno</td>
<td>2010</td>
<td>250</td>
<td>10</td>
<td>240</td>
</tr>
</tbody>
</table>
Environmental profile & atlas

COASTAL HABITAT MAP

Source of Information
- Coastal 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 of Information

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

<table>
<thead>
<tr>
<th>Effective Date</th>
<th>Ordinance</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/18/99</td>
<td>Municipal Ordinance No. 04 Series of 1999: Regulating the gathering, shipment, sale and distribution of shellfish within the municipality of Morong, Province of Bataan.</td>
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<tr>
<td>02/22/99</td>
<td>Municipal Resolution No. 9 Series of 1999: Resolution penalizing unsanitary backyard piggery owners emitting bad odor inimical to the health of neighboring residents.</td>
</tr>
<tr>
<td>06/07/99</td>
<td>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.</td>
</tr>
<tr>
<td>03/06/00</td>
<td>Municipal Ordinance No. 10 Series of 2000: Basic Fishery Ordinance No. 10 of the Municipality of Morong.</td>
</tr>
<tr>
<td>1/06/00</td>
<td>Municipal Ordinance No 11, Series of 2000: Comprehensive Solid Waste Ordinance of the Municipality of Morong.</td>
</tr>
</tbody>
</table>
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