Integrated Watershed & Coastal Areas Management In Caribbean SIDS

INDICATORS MECHANISM ASSESSMENT
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PRESENTATION OUTLINE

- Objectives & scope
- Information sources & approach

Indicators mechanism assessment:

- Themes & sub-themes
- Common national, regional, international frameworks
- Findings by themes: relevant frameworks, examples of indicators, major data and information sources
- Summary of major findings
- Recommendations

Capacity assessment:

ASSESSMENT OBJECTIVES

- Identify an indicator framework to monitor changes in the state of the watershed and coastal environments, to monitor the trends in socio-economic pressures and conditions in watershed communities and coastal towns, and to assess the efficacy of IWCAM in addressing these issues and mitigating harmful impacts;

- Assess relevant institutional infrastructure/administrative protocols and relevant human resource capacities and training needs related to indicator monitoring in PCs;

- Make recommendations to bring capacity up to a level where indicators can be utilized, manipulated and shared among the PCs.

SCOPE OF ASSESSMENT

- Conduct a review of national and regional indicators mechanisms for IWCAM and identify gaps and weaknesses

- Identify Process, Stress Reduction, and Environmental Status/Water Resources Indicators

- Conduct rapid assessment (Ground truthing) in 3 representative PCs, to confirm and validate the findings of desk exercise

- Assess relevant institutional infrastructure/administrative protocols related to indicator monitoring in PCs

- Assess relevant human resource capacities and training needs related to indicator monitoring in PCs

- Prepare draft template of indicators

- Make recommendations in order to bring capacity up to a level where indicators can be utilized by the PCs

- Present findings at regional workshop on "Indicators for Integrating Watershed and Coastal Area Management"

SOURCES OF INFORMATION

Desk study based on:

- Review of published and unpublished reports, preliminary IWCAM reports, project reports, and technical documents, country reports prepared under the BPoA, regional and international organizations (e.g. CARICOM, UN organizations) and multinational environmental conventions, internet searches;

- Questionnaires distributed at the national and regional levels;

- Groundtruthing in three representative countries:
  - Barbados (larger English-speaking SIDS)
  - Dominican Republic (non-English speaking SIDS);
  - St. Vincent and the Grenadines (OECS and the Bahamas-smaller islands).

GROUND TRUTHING

Exercises in 3 countries

Group 1 (OECS & Bahamas)	Group 2 (larger English-speaking)	Group 3 (non-English speaking)
Antigua & Barbuda Bahamas Dominica Grenada St. Kitts & Nevis St. Lucia St. Vincent & Grenadines	Barbados Jamaica Trinidad & Tobago	Cuba Dominican Republic Haiti

APPROACH

A comprehensive indicators mechanism assessment requires a broad approach that includes a number of different themes and frameworks, as a result of:

- Holistic nature of IWCAM- underlying concept of IWCAM is the management of watersheds and coastal areas as a single management unit, using an approach that integrates economic, social, cultural, governance, and environmental issues;

- Small land mass of SIDS – entire island considered the coastal zone;

- Economic activities and population concentration in 'coastal zone';

- Wide range of natural forces and processes operating in watersheds and coastal zones, and multitude of factors and variables that should be measured to assess and monitor the state of the systems involved;

- Island Systems Management Approach (Nichols & Chase 1998)- structured around a participatory, multi-sectoral strategy within an appropriate institutional and legal framework for integrated approach to natural resource use and management.

Assessment based on 12 themes and 28 sub-themes that were considered to be relevant to IWCAM and that reflect some of the main environment and sustainability concerns of SIDS

Indicators Mechanism Assessment

COMMON REGIONAL & INT'L FRAMEWORKS

- Multilateral Environmental Agreements & Programmes:
  e.g. *Cartagena Convention (LBS, SPAW, Oil Spill Protocols) UNCBD, UNCCD, CITES, Kyoto Protocol, GPA, FAO Code of Conduct*

- Sustainable Development frameworks:
  e.g. *Agenda 21, BPoA, Mauritius Strategy, ILAC, MDGs, UN Commission on Sustainable Development, WSSD Johannesburg Plan of Implementation*

- St. George's Declaration (OECS)

- CARICOM Single Market & Economy

NATIONAL FRAMEWORKS

- Sectoral/natural resources management & development plans (e.g. fisheries mgt plans, water resources mgt);

- Nat'l Environmental Strategy & Action Plan

- Nat'l Biodiversity Strategy & Action Plan (UNCBD)

- Nat'l Action Plan (UNCCD)

- Sustainable Development Strategy (UNCSD)

- State of Environment Assessment & Reporting (UNEP GEO)

MAJOR REGIONAL & INT'L FRAMEWORKS

	Ant & Bar	B'mas	B'dos	Cuba	Dom	Dom. Rep.	Gren	Haiti	Jam	St. K & N	St. Luc	St. Vin & Gren	T&T
BPOA	x	x	x	x	x	x	x	x	x	x	x	x	x
LBS						x							x
SPAW	x		x	x		X			X		X	X	X
Oil Spill	x		X	X	X	X	X		X		X	X	X
St. George's	x				X		X			x	x	x	
CBD	X	X	X	X	X	X	X	X	X	X	X	X	X
CCD	X	X	X	X	X	X	X	X	X	X	X	X	
Cites	x	X	X	X	X	X	X		X	X	X	X	X
Kyoto	x	X	X	X	X	X	x	x	X	x	X	X	X
UNCLOS	x	x	x	x	x	x	x	x	x	x	x	x	x

THEMES & SUB-THEMES

Theme	Sub-theme	Major frameworks
Atmosphere	Climate, air quality, energy	BPOA, St. George's, Kyoto Protocol; Montreal Protocol, ILAC, MDGs, UNCSD
Biodiversity	Habitats, species	BPOA, CBD, CITES, Ramsar, SPAW, St. George's, UNCSD
Coasts & seas	Fisheries, coastal ecosystems, water quality, sea level	BPOA, FAO Code of Conduct, GPA, CBD, LBS Protocol, St. George's, ILAC, UNCSD
Freshwater resources	Water quality, availability/use	BPOA, UNCSD, MDGs, ILAC, St. George's, CSME, CBD, CSD
Land & land cover	Forests, urbanization, agriculture, land degradation	CCD, CBD, UNFCCC, BPOA, St. George's, ILAC
Natural disasters	Occurrence; human, economic & environmental impacts	BPOA, UNCSD, CSME
Sanitation & human health	Access to sanitation & freshwater, related illnesses	MDGs, BPoA, CSME, St. George's, Mauritius Strategy, ILAC, MDG, UNCSD
Waste	Waste generation, waste management	LBS Protocol, GPA, St. George's, BPOA, ILAC, CSME, UNCSD
Tourism	Tourism intensity, environmental impacts	WTO, CAST, CTO, ACS
Socio-economics & Governance	Population, economic development, human development, institutional & policy setting	
Environment & Sust. Dev.		Agenda 21, BPOA, MDGs, UNCSD

BIODIVERSITY

Biodiversity indicators are relevant to a number of national, regional, and international frameworks:

Int'l: CBD (2010 biodiversity targets), CITES, MDG, UNCSD, BPOA

Regional: SPAW Protocol, ILAC, CSME, St. George's

National: NEAP, Nat'l Biodiversity Strategy & Action Plan

- Some of the PCS are developing NBSAP, most of which do not specifically mention the development and use of indicators.
Barbados and Grenada have proposed a number of key indicators for monitoring environmental changes and progress in achieving the objectives of their respective action plans.

- However, some information is available to develop biodiversity indicators (e.g. no. threatened species, number protected areas) in all the countries. A substantial amount of data is also available in descriptive formats (e.g. species presence/absence)

Example of indicators: Protected areas, threatened species, species diversity, ecosystem extent

Data & information: IABIN, IUCN, UNEP-WCMC

COASTS & SEAS - *Fisheries*

A number of fisheries indicators are in use at national and global levels. Relevant frameworks include:

Int'l: UNCLOS, FAO Code of Conduct , ICCAT, BPOA

Regional: OECS (*Fisheries Management and Development Strategy*), CARICOM Common Fisheries Policy

National: Fisheries management plans.
-*PCs routinely collect annual landings statistics (total & by major species) – submitted to FAO*

- Stock assessment conducted for some of the major fisheries (e.g. large pelagics, queen conch, lobster, shrimp) – produce a number of indicators

Examples of indicators: Total catch, size of fish, CPUE, trophic level, Max. Sustainable Yield, Yield per recruit

Data & information: CRFM, WECAFC, FAO, ICCAT, UBC Sea Around Us project

COASTS & SEAS - *Ecosystems*

A number of frameworks exist under which indicators related to coastal ecosystems are of interest:

Int'l: UNCLOS, CBD, GPA, UNCSD, MDG, BPOA

Regional: St. George's, SPAW, LBS, CSME

National: Coastal zone mgt plans

- Historically, studies on coastal ecosystems have been conducted on an ad hoc, project basis by government agencies, academic and research institutions – temporal & spatial gaps in data;

- PCs are increasingly implementing longer term monitoring programmes, especially for coral reefs, in various locations using indicators such as live coral cover, algal cover, and incidence of disease and coral bleaching. A number of int'l initiatives exist for studies & monitoring of coastal ecosystems.

Examples of indicators: % live coral cover, productivity, mangrove forest cover

Data & information: CARICOMP, CPACC, ReefCheck, GCRMN, 'Reefs at Risk', AGRRA, UNEP-WCMC, FAO

COASTS & SEAS – *Water quality*

Several indicators of coastal water quality exist, and are relevant to a number of frameworks:

Int'l: BPOA, GPA, CBD, UNCSD

Regional: LBS Protocol, CSME, ILAC

National: NEAPS?
-Coastal water quality indicators exist in all the countries;
- Water quality is sporadically measured in most of the countries, with few countries routinely monitoring coastal water quality;
- Regular monitoring at locations of particular importance, e.g. major tourist beaches.

Examples of indicators: Nutrients, faecal coliform, heavy metals, oils, suspended solids

Data & information: EMA, IMA, CEHI, UNEP CAR/RCU

FRESHWATER RESOURCES

Monitoring programmes for freshwater for human use are among the most comprehensive and best established in the PCs, because of its significance for human basic needs and human health. Major frameworks include:

Int'l: UNCSD, MDG, BPOA, CBD, CCD

Regional: ILAC, CSME, St. George's

National: NEAPS, NBSAPS, water resources sector mgt & development plans

- Several indicators are routinely used in all the countries to monitor freshwater quality in ground and/or surface water (bacteriological, chemical, and physical parameters) and quantity or availability. Freshwater resources (potable water) are commonly monitored using a number of indicators in all the PCs.

Examples of indicators: surface & groundwater levels, access to water supply, water quality (potable water), access

Data & information: CEHI, EMA, FAO Aquastat, UNDP, WHO, UNICEF

LAND & LAND COVER

Int'l: **CCD, CBD, UNCSD, BPOA, MDG,**

Regional: **ILAC, CSME, St. George's**

National: **NEAPS, NBSAP**

- PCs are increasingly adopting indicators pertaining to land use and vegetation cover, and are developing capacity for use of geo-referenced indicators.
- Most PCs have land cover/land use maps, although mostly outdated.
- Some recent initiatives to assist countries in land cover mapping (FAO, TNC/IITF/USGS)

Examples of indicators: % vegetation cover, deforestation rate, area degraded, municipalities with land use planning

Data & information: FAO, CCD, CARDI/PROCICARIBE Caribbean Land and Water Resources Network,

NATURAL DISASTERS

Int'l: UNCSD, BPOA,

Regional: CSME

National: Nat'l Emergency Preparedness & Response Agencies,

Examples of indicators: Human & economic losses, frequency & intensity of storms, population in disaster-prone areas

Data & information: CDERA, CRED global disasters database

SANITATION & HUMAN HEALTH

Int'l: BPOA, MDG, UNCSD,

Regional: ILAC,

National: NEAPS

Examples of indicators: Access to sanitation, access to freshwater, incidence of environmental-related illness,

Data & information: CEHI, PAHO/WHO, UNESCO, UNDP, CAREC

WASTE

Int'l: BPOA, GPA,

Regional: LBS Protocol, St. George's, ILAC?

National:

Examples of indicators: Waste production, waste treatment,

Data & information: CEHI,

ENVIRONMENT & SUSTAINABLE DEVELOPMENT

- St. George's Declaration of Principles for Environmental Sustainability in the Member States

- CARICOM

- Barbados Programme of Action for Sustainable Development of SIDS & Mauritius Strategy

- UN Statistics Division

- Latin American and Caribbean Initiative for Sustainable Development (ILAC)

- OAS Declaration of Santa Cruz de la Sierra and Action Plan

- Agenda 21

- Millennium Development Goals

- WSSD & Johannesburg Plan of Implementation

- UNEP: Global Environment Outlook, Environment Vulnerability Index

- UN Commission on Sustainable Development

- Environmental Performance Index

SUMMARY OF FINDINGS

INDICATOR MECHANISMS

- An array of frameworks exist, under which indicators are being developed, especially at global level, which cover themes that are relevant to IWCAM (e.g. MEAs);

- Under some of these frameworks the PCs are required to use indicators for reporting purposes and for assessing progress in implementation;

- A number of the PCs plan to or are in the process of developing indicators under these frameworks;

- Wide disparity in level of development of indicators mechanisms among PCs;

- In the PCs, IWCAM is still in its infancy, although a number of the PCs have ICZM initiatives, or individual management programmes and plans for coastal areas and watersheds, or natural resources;

- PCs do not have indicators mechanisms and monitoring programmes specifically linked to IWCAM, although in all the PCs a number of indicators exist that could be used for IWCAM;

RECOMMENDATIONS (cont'd)

- PCs are increasingly aware of the need for developing and implementing a system of environmental indicators;

- Few have a national system of environmental indicators (Barbados, OECS), although indicators are used at the sectoral levels;

- There is limited implementation of existing indicator mechanisms at national levels, except for themes such as freshwater resources, climate, fisheries.

- Existing indicator systems are not mainstreamed at the national level, and in general, there is limited linkage between environmental indicators and decision-making;

- Indicator mechanisms at national level are not linked to an integrated, ecosystem framework, but rather exist at the sectoral level; except for sustainable development indicators;

FINDINGS (cont'd)

DATA & INFORMATION

- A substantial amount of data and information is collected that could be used to develop indicators. What exists is data collection/statistics, rather than a standard suite of indicators linked to specific issues or objectives at the national level;

- Environmental observations, data and information are collected that could be used as a baseline to develop IWCAM indicators;

- Much of the data have been collected on a project basis;

- Data sets generally inconsistent and sporadic (except for a few indicators – potable water, climate, fisheries, socio-economics), with temporal and spatial gaps;

- While time series of data exist for a number of themes, there are discontinuities; geographic coverage is limited, and information is often outdated.

(more in capacity assessment section)

FINDINGS (CONT'D)

MONITORING

- In most situations, monitoring and evaluation systems are non-existent or of limited geographic scale and duration;

- There is limited monitoring at the national level using a standard, consistent set of indicators;

- The best established monitoring programmes in all the countries are for a few sectors e.g. water resources (although there are wide disparities among the countries in the number of variables monitored and in geographic coverage), climate, fisheries landings.

- Progress has been disparate, with the larger countries and/or those with the required resources being more advanced than the others.

(Refer to Table with survey responses)

RECOMMENDATIONS

- Countries should work towards developing nationally and regionally consistent and compatible frameworks of environmental indicators and statistics;

- Countries should work towards harmonization at the national and regional levels. This will enable the countries to effectively acquire comparable data and information on which to base assessments of environmental status and progress in addressing common issues. It will also allow for the sharing of tools, expertise and other resources, resulting in more cost effectiveness and efficiency;

- Through a process of consultation at the national level, each PC should identify a suite of basic, priority IWCAM indicators under each theme that address national needs and priorities. These indicators should be administratively practical and cost effective to populate, as well as 'SMART';

- In developing the suite of indicators, priority issues should be identified at the national (or even local) and regional levels, and goals and objectives should be clearly defined. The indicators need to be clearly related to the objectives that they are meant to measure and to be at the appropriate spatial scale;

RECOMMENDATIONS (cont'd)

- It is critical to include indicators that specifically monitor the pressures and the conditions of the natural resource environment or ecosystem in which the specific activities of the project or IWCAM programme take place, that is, an ecosystem-based approach should be used for developing the suite of indicators, using an integrated, multi-sectoral approach;

- To be efficient and useful the indicator framework should build on existing systems, target a few key specific and representative indicators that can be confidently used to deliver robust assessments of the impact generated by the project, as well as to be used in the post-project period for monitoring, evaluation and adaptive management;

- A minimum environmental monitoring system in support of the indicator framework should be developed. The appropriate institutional arrangements should be put in place and the cost of such a programme would have to be determined;

- All efforts on indicators should be linked to agreed national, regional and global objectives and targets. This would enable countries to report to several environmental frameworks using the same sets of indicators, thus reducing the burden of monitoring and reporting, and be more cost-effective;

RECOMMENDATIONS (cont'd)

- There are a number of ongoing or planned projects in the region (e.g. the GEF Caribbean LME project), which also include developing indicators. The IWCAM initiative to develop indicators should also be linked to these activities;

- Existing data could be used as a baseline. Each country would determine the appropriate baseline, depending on the theme and data availability;

- Standardized protocols for collecting data should be adopted, in order to maximize its utility for decision-making and to allow spatial and temporal comparisons, both within and between countries. Data standards and data quality control issues require more attention at the national and regional levels;

RECOMMENDATIONS (cont'd)

- Much of the data that are useful for developing IWCAM indicators are compiled by regional or international organizations, which often makes them easily available through online databases and also adds value through synthesis and analysis.

- PCs should identify key partners and explore the option of entering into arrangements with relevant regional and international organizations and programmes to collect, compile and analyze data for each indicator. They should also enter into dialogue with data providers/owners on access to required data.

Capacity Assessment

Outline

- Objectives
- Areas of Assessment:
  - Systemic, institutional, human resources, data collection and information management, technology, financial,
- Barriers
- Consequences
- Ground truthing
- Recommendations

Capacity Assessment

Main objectives :

- Assess existing capacities and identify weaknesses and gaps in capacities that serve as barriers to effective indicator development and application in the participating countries.

    - Assess national enabling environment

    - Assess institutional infrastructural and administrative protocols related to indicator monitoring in PCs.

    - Assessing human resource capacities and training needs related to indicator monitoring in participating countries.

- Providing recommendations for brining capacities up to a level where indicators mechanisms can be developed, utilized, manipulated, and shared among PCs.

Areas of Capacity Assessed

- Systemic

- Institutional

- Human resources

  – Capacities

  – Gaps & Barriers (key impeding factors to the compilation of environmental statistics)

  – Consequences

  – Recommendations

Systemic Capacity

- Enabling frameworks:
  - policy
  - legislation
  - financial mechanisms
  - Allocation of mandates and responsibilities

Systemic Barriers to Indictors Development

- Absence of a national policy and strategic framework for sustainable development planning
- Rare:
  - National polices for coordinated environmental data collection (source)
  - National development polices supported by explicitly identified environmental indicators (application)
- Exceptions: Barbados, Dominican Republic, Cuba, Jamaica.

Systemic Barriers to Indicators Development

- Sectoral polices and programmes traditionally developed in isolation of one another
- Promulgations of multiple laws dealing separately with aspects of the same natural resource system

Consequences

- A syndrome of ad hoc, uncoordinated, & fragmented:
  – data collection and monitoring
  – data processing and analysis
  – reporting
  – data, inforamtion & utilization

- Systemic barriers to awareness & the sharing of data and information on environmental statistics and indicators.

Institutional Capacity

- Factors that contribute to overall performance and functional capabilities.
  - Finical resources
  - Human resources
  - Equipment
  - Technology
  - Data and Information

Institutional Barriers to Indicators Development

- Insufficient financial resources,
- Fragmentation of IWCAM mandates
- Weak institutional arrangements for integrated resources management
- Absence of integrated development planning
- Absence of inter-agency planning

Institutional Barriers to Indicators Development

- inadequate capacity to effectively support the mandates and responsibilities for:
  - monitoring
  - reporting
  - adaptive response

- Duplication of effort and expenditure in the discharge of overlapping responsibilities

Consequences

- Compartmentalization of data management and barriers to access
- Uncoordinated data collection and monitoring
- Weak and transient commitment to environmental monitoring and data collection
- Monitoring & data collection driven by projects, research initiatives, and/or donor funded initiatives.

Consequences

- Difficulty accessing information and data.
- Insufficient, outdated, or non-functional equipment
- Lack of training
- Poor organization
- Dependency on outside consultants

Human Resources Capacity

- Recruitment and retention
- Training
- Professional development
- Motivation
- Morale
- Responsibility,
- Number of technical and professional experts
- Level of technical expertise and skills

Barriers

- Prescribed limits on the number of permanent appointments within government organizations
- uncompetitive remuneration,
- inadequate and/or un-sustained training
- Limited training and research programmes at the tertiary levels to meet the identified training needs in IWRM

Consequences

- Pervasive lack of capacity to undertake the monitoring of many important parameters
- Dependence on external, project-driven support for monitoring activities,
- Low monitoring frequency
- Poor sustainability of monitoring initiatives.
- Inconsistent data quality

Data Collection & Information Management

- National data/information management policy
- National data collection, management and coordinating mechanism(s),
- National data quality standards,
- Human, financial and technical resources
- Capacity to efficiently retrieve and exchange data and information

Barriers

- Limited human and financial resources
- General absence of policy-defined demand for environmental data and indicators Data availability and quality
- Limited coordination and collaboration among data collecting agencies in monitoring, data collection, and data management
- Fragmented and overlapping institutional mandates for environmental management

Barriers

- Non-standardized formats used for recording and storing parametric data
- Limited awareness of the existence of data sets
- Data loss due to improper archiving
- Fragmented data holdings
- Inadequate and infrequent compilation, processing of data

Consequences

- Difficulty in assessing the implementation of the commitments:
  - no systematic benchmarks or indicators for assessing the implementation of the CCD or the extent of land degradation in some of the countries.
- Difficulty accessing existing data and information
- Difficulty in assessing the implementation of convention & MEA commitments

Consequences

- Poorly funded *ad hoc* monitoring and data collection
- Large data gaps and a lack of baseline and time-series data
- Inconsistent and incompatible data sets,
- Limited inter-agency knowledge of, and access to, existing data

Technology

- Coordination
- Mainstreaming
- Current
- Uniformity
- Appropriate

Barriers

- Information management has not completed the transition from analogue to digital formats.

- Incompatibilities arising from the proliferation of diverse computer systems and software programmes, and decision-support applications

Barriers

- Data collection, handling and processing procedures not keeping pace with changes in technology for data management and decision support applications.

Barriers

- GIS not being fully incorporated into the workflow of the institutions:
  - limited maintenance of GIS
    - stagnant databases
    - non-functioning equipment and
    - limited GIS analyses undertaken
- Project-driven training not being fully incorporated into institutions' culture
  - may not lead to the uptake of technology

Consequences

- Inefficient data management and analysis
- Limited availability of comprehensive IWCAM data and information for monitoring and decision-making
- Limited ability to develop climate change models and scenarios to conduct impact assessment studies on, and adaptation planning for, effective natural resource management and IWCAM

Financial Resources

- Mechanisms and approaches
- Adequacy
- Sustainability

Barriers

- The lack of financial resources has been identified as one of the two most common impeding factors for the development of both environment statistics and environmental-economic accounting programmes (UNSD, 2007).

- A substantial proportion of the funding to support IWCAM initiatives in the Caribbean is provided by projects and donor funded initiatives (+/-)

Barriers

- Fragmented mandates & responsibilities preclude **targeted** budgetary allocation
- Funds may be sufficient to maintain IWCAM-related staff compliments, but not the costs of implementation.

Consequences

- Ineffective monitoring & data management
- Project funded contracts with private consultancies for data collection
  - Diversion of capacity and resources from programmatic approach to monitoring
  - Data collection is project specific & uncoordinated
  - Data holdings disabused among various agencies and institutions

GROUND TRUTHING: IWCAM-RELATED MONITORING			
THEMATIC AREA	BARBADOS	DOMINCAN REPUBLIC	St. VINCENT AND THE GRENADINES
POTENTIAL	High	High: significant base	Limited
IWCAM MANDATES	Distributed	Centralised (SEMARN)	Distributed
WATER	EPD/BWA	SEMARN/IHR/PHSA	CWSA
WASTE WATER	EPD	SEMARN	
SOILS	SCU/EPD	SEMARN	
FORESTS	SCU	SEMARN	Forestry Division
BIODIVERITY		SEMARN	Forestry Division
PROTECTED AREAS	CZMU/NCC	SEMARN	Forestry Division
COASTAL	CZMU/EPD	SEMARN	FD/PHD, Min. Environment
FISHERIES	Fisheries Division	SEMARN	Fisheries Division
MONITORING	Coral reefs, coastal and fresh water quality,	Water & public health	Water, forest resources, public health

GROUND TRUTHING: IWCAM INDACTORS MECHANSIM

THEMATIC AREA	BARBADOS	DOMINCAN REPUBLIC	St. VINCENT AND THE GRENADINES
INDICATORS MECHANSIM	- No coordinated collection - Elements in place	- Not fully implemented - National System of Information on the Environment & Natural Resources	None
INIDICATORS MANDATES	Distributed	Legally mandated to contribute data to system	Distributed
INDICATORS COMPENDIA	1999: Selection of Indicators for Sustainable Development for Barbados	2004: environment & socio-economic 2006: hydrological resources	2000: environmental and socio-economic
CAPACITY DEVELOPMENT	UNSD	ECLAC REDESA UNEP GEO LAC UNSD	UNSD

Recommendations

- data collection driven by information needs;
- common data exchange formats and protocols are developed and used;
- networking and information sharing is promoted and enhanced;
- a common land classification system is developed that allows comparisons among countries;
- soil and land use information holdings are sustainably maintained and regularly updated; and
- data holdings are supported and complimented by comprehensive metadata records.

Source : FAO Land Use Planning and Agricultural Zoning Project

Recommendations

Systemic:

- Mainstream IWCAM into national development policies.

- Develop and adopt appropriate IWCAM policy and legislation in support of IWCAM objectives at the national and regional levels.

- Review & revise the statistics legislations in PCs to allow for National Statistical Authorities to serve as central repositories for IWCAM-related statistics & generate reports at appropriate levels of in support of a research and analytical programmes and national and regional negotiations

Recommendations

Institutional:

- Provide funding at levels proportional to the IWCAM-related responsibilities and resource requirements of institutions
- Establish functional coordination mechanisms for monitoring & data collection at the regional and national levels.
- Develop collaborative solutions to capacity development and the sharing of technologies and expertise.
- Establish institutional mechanisms to facilitate and enhance participatory monitoring and mapping.

Recommendations

- Develop collaborative solutions to capacity development and the pooling of human resources.

- Rationalize IWCAM-related mandates & match with adequately funded training and skills-development programmes.

- Develop a regional approach to capacity development and the coordinated pooling of scarce human resources among national government agencies

Recommendations

Data & Information:

- National development strategies incorporate quantifiable environmental objectives and indicators.

- National statistics legislations to require government agencies to submit data to the National Statistical Authorities reporting for decision-making

- Coordinated data recovery and data mining initiatives.

- National and regional standards for environmental data.

- National and regional protocols for the exchange or sharing of environmental data and information.

- Establish national data catalogues.

- Establish regional data base for indicators and to track monitoring activities in the region

Recommendations

Technology:

- Establish centrally coordinated data networks.
- Establish and implement technology standards

Finance:

- Review and rationalize governmental IWCAM responsibilities in the areas of management, monitoring, data collection, data processing, reporting, and evaluation with a view to facilitating targeted budgetary allocations for the implementation of IWCAM activities.

BREAK OUT GROUPS

Refer to Handout 1 for guidance on break out group discussions

THANK YOU