

**OCTs Regional Risk Reduction Initiative (R3I)
Provision of Services to Caribbean OCTs
Lot 1: GIS and Vulnerability Assessment**

Phase V

Vulnerability assessment and hazard mapping applications

Aruba; May 4-6, 2011

**Formal Launch of OCTs Regional Risk Reduction Initiative (R3I): Provision of Services to Caribbean OCTs ; Lot 1:
GIS and Vulnerability Assessment**



UN
DP



Phase V – Vulnerability assessment and hazard mapping applications

Phase V aim is to achieve effective analysis and elaboration of data collected in previous phases

It's organized into 4 sub-tasks:

A. Hazard database development

B. Disaster management application

C. Inputs for Early Warning System

D. Adaptation of tools and products for decision markers and public awareness



UN
DP



Phase V-A – Hazard database development

Target:

Customization of **geographical hazard information** into tools allowing:

- Consultation of all information collected and previously produced
- Direct access to all information
- Data exchange among the OCTs and external bodies
- Data maintenance and conservation



UN
DP



Phase V-A – Hazard database development

Activities:

- **Geo-DB design and development**
- **Customization of GIS User Interfaces for the risk mapping and web-publishing of risk maps**
- **Integration with external / existing systems**
- **Multi-hazard risk map production (coming from all the information collected during previous phases)**
- **Hazard atlases books production (100 copies for each country)**



UN
DP



Phase V-A – Hazard database development

System Architecture, 2 possibilities:

A. 3-tier based system:

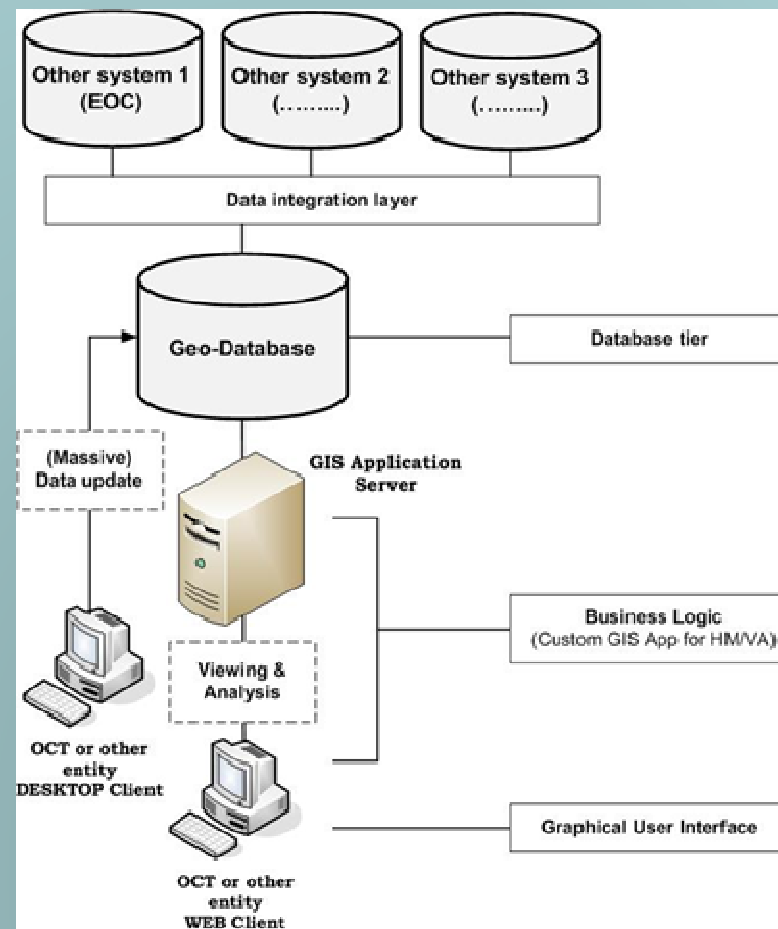
1. Geo-DB,
2. Custom HM/VA Desktop GIS Application,
3. Web-GIS Graphical User Interface (GUI)

B. Local with data sharing via OGS Standards (WMS-WFS)

Phase V-A – Hazard database development

A. 3-tier based system

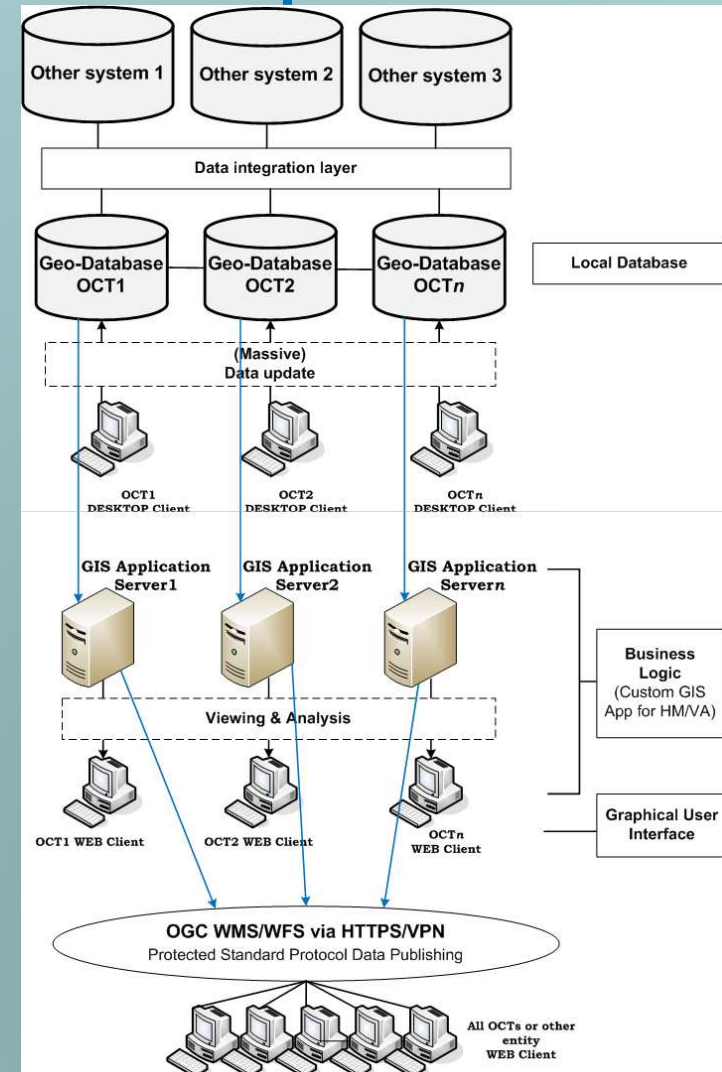
- A centralized **Geo-DB** collecting all the data produced and updated by each island.
- Data elaboration, services and maps would be published through standard OGC-W*S (public or protected via HTTPS/VPN)
- Metadata INSPIRE-based structure will be implemented



Phase V-A – Hazard database development

B. Local with data sharing via OGS Standards (WMS-WFS)

- Each OCT has its own local Database
- Data sharing through other OCTs only previous authorization by local Administrator
- Subset data and selected maps would be published on protected protocols (HTTPS or VPN) through standard OGC-W*S
- Metadata INSPIRE-based structure will be implemented





UN
DP



Phase V-A – Hazard database development

- **WMS: Web Map Service**
Delivers **pictures of the features** (PNG, JPEG, GIF)
- **WFS: Web Feature Service**
Delivers the **features themselves**



UN
DP



Phase V-A – Hazard database development

Deliverables:

- Database design technical reports with data dictionary
- Delivery of HM/VA GIS-based system and relevant basic functions
- Technical reports and user manuals
- Hazard risk maps and atlases



UN
DP



Phase V-b – Disaster management applications

Target

- Development of customization relevant to:
 - Vulnerability assessment
 - Contingency and logistic planning
 - Loss estimation
 - Social and environmental vulnerability assessment
 - Evacuation planning and management

- Training to Disaster Management Offices (DMO)



UN
DP



Phase V-b – Disaster management applications

To be really effective and efficient, each DMO, should be supported by following professional profiles:

- ***GIS Administrator/Analyst***, covering the role of (Spatial) DB Administrator, managing DB, cartography and relevant structure
- ***GIS Operator***, working as data-enter, geo-referencing and digitizing data



UN
DP



Phase V-b – Disaster management applications

In case where a DMO may not hire a full-time GIS officer, following options may be adopted:

- **Training a GIS Officer from other Government Agencies** in the territory who will undertake the GIS functions on request, as it is managed in Anguilla.
- **Training a DMO employee** providing him with a responsibility allowance for accepting this additional responsibility.
- **Establishment of a Central GIS centre** that services the needs of all state agencies in the territory.



UN
DP



Phase V-b – Disaster management applications

Deliverables:

- HM/VA GIS-based system and relevant advanced functions of disaster management
- Training material
- User manuals



UN
DP



Phase V-C – Input for Early Warning Systems

Target:

- **Integration of HM/VA GIS-based system with EWS**
- **Design and development of GIS-based EWS functions**
- **Data import / export** from and to the national warning systems.
- Definition of **public warning zoning** adapted to scenarios (production of detailed warning maps coherent with the scenarios developed under Phases I and II.)
- **Production of final maps** (together with EWS Consultants) for public awareness as emergency plans, evacuation routes, etc...
- **Capacity building** in Planners, Emergency & Disaster Managers



UN
DP



Phase V-C – Input for Early Warning Systems

Deliverables:

- HM/VA GIS system integrated with EWS application
- User manuals
- Technical reports



UN
DP



V-D – Adaptation of tools and products for decision makers and public awareness

Target:

- Adaptation of the Disaster Management Web-GIS with **public pages accessible to citizens**
- Design and development of **public awareness messages and materials:**
 - Campaigns of awareness will be promoted and published
 - Best practices and international guidelines will be applied



UN
DP



V-D – Adaptation of tools and products for decision makers and public awareness

The result of these activities will be the raising of public awareness in matter of:

- **Hazard and Vulnerability** of the country,
- **Knowledge of the adopted countermeasures** in order to mitigate effects and impacts of hurricanes, tsunamis, earthquakes, and other catastrophic events,
- **Emergency / evacuation plans** (recommended routes, position of shelters, rescue services, etc.) and relevant behavior.



UN
DP



V-D – Adaptation of tools and products for decision makers and public awareness

Deliverables:

- Applications technical reports and maps
- User manuals



Thank you! ;)

