Using local knowledge and GIS to facilitate marine spatial planning

EPOG

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Enhancing Pacific Ocean Governance (EPOG)

- Enhance access to useful spatial data
  - Collate and organise data holdings
  - Information portals – KiGeo (PacGeo - SPC)

- MSP Tools
  - Oceans project portal
  - Decision support information portal -Maps

- Enhanced capacity (training)
  - QGIS
  - KiGeo
Collaboration

- PIFS
- SPREP
- SPC (Coastal Fisheries & GSD)
- MACBIO
- iClim
- ANCORS/ACIAR project on coastal fisheries
- TNC, Worldfish & CSIRO CTI marine values project & local adaption
- CBD - Convention on Biological Diversity
- Governments of Kiribati, Solomon

Different Policy & Management needs across Regional, National and Community Scales

- The usual approach would be different implementations and approaches that would promote fragmentation and increase the cost of maintenance

- EPOG approach is to use a common set of tools, based on standards, to support each agency to achieve their policy objectives
Kiribati Activities

• Marine Spatial Planning Tools
  • Projects data base
  • Mapping

• Deployment of internet independent version of Pacgeo to MFMRD, Kiribati, in collaboration with SPC.

• Capacity building
  • Training in use of Kigeo (SPC, Macbio)
  • Training QGIS (Macbio, GIZ)
  • Provide training in using Marine spatial planning tools

• Community based Fishery Management (CBFM) ANCORS
  • Tarawa Lagoon Marine Spatial Planning Mapping (ANCORS)
  • Community Based Fisheries Management (CBFM – ANCORS)
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MSP Tools

http://msp.csiro.au/

Web based Drupal tool that can be deployed on a virtual machine with no internet.

- Kiribati

Information technology deployable products

- Production of a deployable virtual machine that contains:

  - Internet independent tools to meet needs, including:
    - MSP Tools
    - Marine Projects
    - Map Tool - Marine Information Platform displays information in a policy relevant context

http://msp.csiro.au
MSP Tools - Maps
Relevant data and information across the spectrum of the Pacific Ocean as a basis for promoting and monitoring the sustainable development

MSP Tools
Project Tools
Maintain a more comprehensive ongoing register of initiatives
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Assisting with Capacity Building (Macbio, GIZ, CSIRO)

• Training Using KiGeo

• An introduction to GIS, using QGIS.

• Meeting with Kiribati GIS uses group.
  • What is the GIS users Group?
  • What they want out of GIS?
  • Training Requirements
  • Data management
### Data management Discussion

Riibeta Abeta (GIZ)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Type of data</th>
<th>Level of confidence</th>
<th>Infrastructure</th>
<th>Maintenance capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal Fisheries</td>
<td>Existing (survey monitoring)</td>
<td>Y (limited to monitoring)</td>
<td>No server No IAK system Only desktop based stores system.</td>
<td>Limited resource. 2 skilled people only.</td>
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<tr>
<td></td>
<td>Sites/areas,</td>
<td></td>
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<td></td>
<td>Sewage outfall</td>
<td></td>
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<tr>
<td></td>
<td>VVC site locations,</td>
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<tr>
<td></td>
<td>Coral monitoring sites (non-point)</td>
<td></td>
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<td></td>
<td>Proposed MPA sites (only in reports)</td>
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<tr>
<td></td>
<td>FAs only point coordinates</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Water quality (Studies only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mineral</td>
<td>Satellite imagery</td>
<td>X</td>
<td>There's new server. Training opportunities. Nuke and IT based skills and GIS operators.</td>
<td>Only 3 basic skilled GIS users</td>
</tr>
<tr>
<td></td>
<td>Aerial photos</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Binomial data</td>
<td>Y</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Survey on beach showing shoreline</td>
<td>Y</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Maritime boundary</td>
<td>Y</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Sonar fisheries (24-45mm fishing buffer zones)</td>
<td>Y</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>PPA boundary/zone</td>
<td>Y</td>
<td></td>
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<tr>
<td></td>
<td>Bathymetry &amp; Modeling Taranii Makea</td>
<td>X</td>
<td></td>
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<tr>
<td></td>
<td>Most layers housed with GSO e.g.</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>fish</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Marine</td>
<td>Catch data position of fishing vessels</td>
<td>X</td>
<td>Server used, fisheries, it's hosted in Asia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Track of Vessels (시간)</td>
<td>X</td>
<td></td>
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</tbody>
</table>

### Kiribati - GIS User Group Training/capacity requirements

<table>
<thead>
<tr>
<th>Agencies</th>
<th>Needs</th>
</tr>
</thead>
</table>
| Coastal Fisheries | * Breeching maps  
| | * GIS equipment  
| | * Training manual  
| | * Spatial restrict system for MPAs  
| | * Spatial data analysis & reporting  
| | * Data management (storage/maintenance)  |
| Hosting | * Installation of GIS or server for multiple user  
| | * Training manual  
| | * Hard drive  |
| CBM | * Data sharing/storage on cloud  
| | * Demarcation of boundaries for marine resource management  |
| Mineral Division | * GPS equipment  
| | * Training manual  
| | * Rate of change of Coastline  
| | * Lidar/ULM elevation data critical for development areas  
| | * Bathymetry maps  |
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Use of local knowledge to describe assets & values

• Opportunistic section of work
• CBFM Project (ANCORS) Auelie Delisle and Brook Campbell have been working with 5 pilot villages.
• Produced hand drawn maps of important regions
• Piers saw these and thought we can value add to this.
Men’s Group
Old women’s Group

Tanimiaki Village, Buraritari Island

Men’s Group

Tanimiaki Village, Buraritari Island

Courtesy of Tarateiti (CBFM, Coastal Fisheries)
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Tarawa Lagoon

Tarawa Lagoon Management Plan in collaboration with ANCORS

• Discussion of policy goals and management plans for coastal fisheries in Tarawa
• Discuss, identify and map out important & significant resources of Tarawa Lagoon.
Work in a lovely environment
Many Thanks to all our collaborators

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- SPREP
- SPC (Coastal Fisheries & GSD)
- MACBIO
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