



A QGIS Cookbook for the Pacific GIS Community

As part of its objective to enhance the sustainable management of marine and coastal biodiversity in Fiji, Kiribati, the Solomon Islands, Tonga, and Vanuatu, MACBIO supports an EEZ-wide spatial planning framework. In the region there is an increasing demand for open-source web-based spatial planning instruments for marine and coastal zones in the Pacific. While basic introductions and supporting documentation are available, there is a lack of a comprehensive solution, customized to the Pacific.

In line with this, the project includes:

Support and guide for the use of open source GIS, especially Quantum-GIS (Q-GIS):

Q-GIS is known as a useful open source software for potential application in marine and spatial planning in the Pacific, while to date it is not commonly applied in the region.

Support for different audiences:

There are different audiences. Users on different skill levels. And users with previous experience with commercial GIS software such as ArcGIS, who need the support to combine or migrate from commercial to open source software.

1. OBJECTIVE: SUSTAINABLE Q- GIS LEARNING TUTORIAL

There is a clear need for Q-GIS training material tailored to the Pacific. While there are some resources available, these are scattered, static and often outdated. In contrast, we propose an interactive, community driven approach.

Capacity building must be viewed over a long term, the important skills and attitudes and habits cannot be picked up in a workshop or during a short project. Thereby the main approach is to develop the wider GIS community by considering following points:

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| 1. Support open source software | 5. Portable version possible |
| 2. Pacific specific | 6. Crowdsourced by different agencies and users |
| 3. Linked to existing efforts in Pacific | 7. Moderated, quality assurance |
| 4. Comprehensive, but condensed | 8. Upgradeable and Open-ended |

1. **Support open source software: Help to migrate and combine commercial and open source software:**

Q-GIS is known as a useful open source software for potential application in marine and spatial planning in the Pacific, while to date it is not commonly applied in the region. Advantages of open source software:



- Free & open source
- Large and Vibrant community
- Powerful functionality
- Data viewing, editing, and analysis capabilities
- Constantly developing (recent Version 2.10 (Pisa))

Due to the high licensing costs, the use of ArcGIS is typically project based and dependent. In contrast, open source solutions such as Q-GIS support the sustainable long-term application of GIS for spatial planning in the Pacific.

2. **Linked to existing efforts in Pacific**

The GIS Community includes personal contact networks, monthly user group meetings, annual conference, and newsletter. The objective is to enhance the learning opportunities for local GIS user and manager. In terms of sustainability, capacity building efforts should be linked to already existing:

3. **Pacific specific: Identification**

An implementation of GIS in the developing world should address the personal motives, concerns, aspirations, abilities and context of potential and emergent GIS practitioners. Therefore it is essential to take the individual into account. Consideration should also be given to the different personal cultural values and histories of those receiving the assistance and of the participants applying it. Case studies and projects from the Pacific can increase the relevance to users.

4. **Comprehensive, but condensed**

Effort is needed to facilitate communication among different organizations that provide capacity building and development expertise. The lack of communication has led to overlap, repetition and the loss of gains made by both local and external organizations. Therefore one of the main attempts is to avoid overlapping and repetition of information. While there are some resources available, these are scattered, static and often outdated. In contrast, we propose an interactive, community driven approach.

5. **Portable version: Includes downloading files of software and data**

There is a strong tendency to desktop based GIS tools: Web-based tools are likely to not be applicable in most of the countries due to technical limitations, such as frequent power outs or internet access and speed limited to government ministries and departments.

6. **Crowdsourced to different users**

Capacity building should reach a variety of groups including policy makers, managers, technical staff, researchers, educators. At the same time the approach can become a platform and “market place” for projects, case studies and contributions by these users, highlighting, publishing and sharing their work.

7. **Moderated, quality assurance**

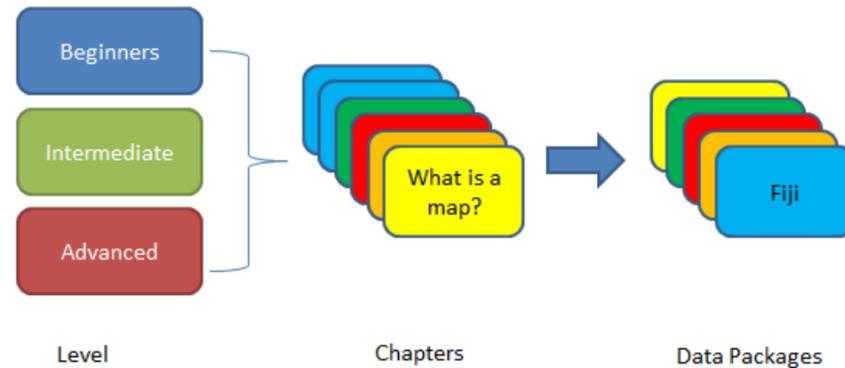
To make a community driven platform truly sustainable, it needs an administrator, who continuously provides and organizes content in the platform, and maintains it.

2. TRAINING DESIGN: 2 NARRATIVES

1. SKILL BASED TRAINING

Approach: Training in line with skills

Training is connected to the specific need of pacific islanders. The tutorial starts with the core elements of GIS. We introduce basics to enable users to continue by themselves with self-taught learning tools. The learning is also open ended, and can be extended to a professional level.



The tutorial begins with a basic level “Introduction” and continues with the “Intermediate” and the “Advanced” Level. Each level includes several chapters. Every chapter is connected to a **Geodatabase**, which contains Geodata in the format of shapefiles etc. The data is ready for immediate use in Q-GIS and matches the provided **exercise**.

The data is **country specific** (*Fiji, Kiribati, Salomon Islands, Tonga and Vanuatu*). People are more engaged to see data in an environment that is relevant to them. An exercise set in a local scenario can generate a higher interest.

2. SCENARIO DRIVEN TRAINING

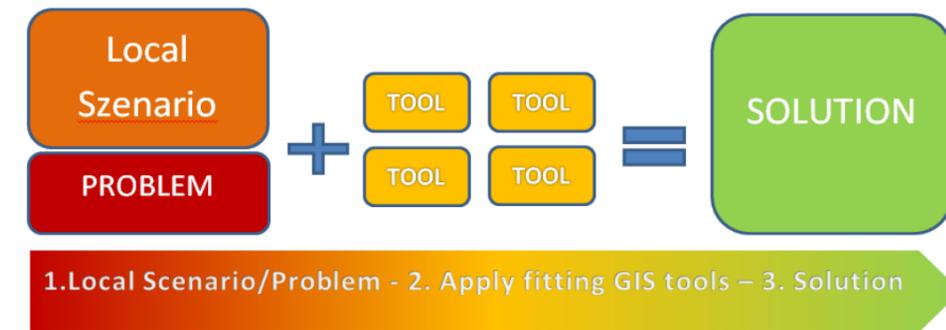
Approach: Training in line with themes/scenarios

Identification: People are likely more engaged and identify with realistic local scenarios and data, in an environment that is relevant to them. Such a narrative approach could attract attention and generate learning interest.

Users’ Background: There is a need to establish a comfortable learning environment for users, based on user’s background and specific interest in GIS.

Arc GIS and Q GIS dualism: There are two major audiences: Users with no former GIS experience, as well as former ArcGIS users who need the support to migrate from ArcGIS to QGIS or combine them. A parallel solution could be provided in ArcGIS as well as Q-GIS in order to highlight the similarities and differences of the two applications.

The structure of the training is based on a thematic line. In this case the student/user is interested in a local scenario which has a problem. The solution can be obtained by applying several appropriate GIS-Tools.



There are further possibilities to contribute to the platform, e.g. by creating a Q-GIS exercise based on users’ GIS case studies and work.

1. GIS related questions/themes in the Pacific
2. Related spatial datasets (for immediate use in Q-GIS)

→ The platform can serve as a market place for QGIS case studies and solution. Share your solution today!

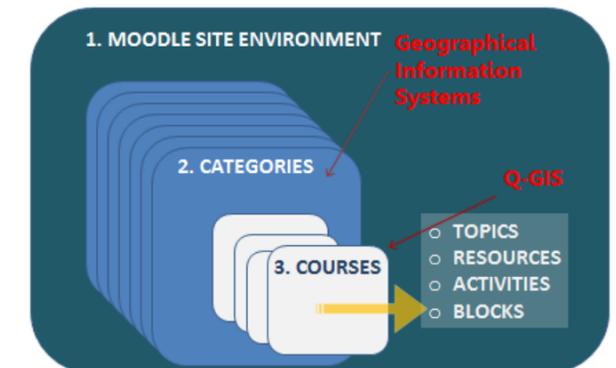
3. FORMAT: MOODLE - MODULAR OBJECT- ORIENTED DYNAMIC LEARNING ENVIRONMENT:

To moodle: “Process of enjoyable tinkering that can lead to growing knowledge, insight and creativity. Online learning management system, designed to improve interaction between teacher and student.”

- easy to use and get going
- learning through collaboration
- people can add and edit

4 BASIC Principles:

- **Store** (Database, files, webpage, portfolio, webpage, links)
- **Communicate** (Forum, chatroom, messaging, link to existing resources)
- **Collaborate** (WIKI, database)
- **Evaluate** (Quiz, survey)



Link: www.pacgeo.org/static/edu/

CONTACT:

If you want to use or support this approach and would like to contribute to the Q-BOOK Moodle, feel free to contact us:



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On behalf of:
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