

# WI-FI BROADCAST SYSTEM

- A way of broadcasting local content to mobile devices and personal computers
- Digital library for schools, offline cache
- Content management system with mobile plug in
- MediaWiki, Moodle, Lesson planning template (from WikiEducator)
- Forum for focused discussions on topics of local interest, such as teacher trainings. Teachers can write their own blogs, and set up blogs for classes as educational activities
- 100% free and open source, easily installed
- Can be run on a small low-power device with solar power in locations where there is no grid power



On the left is an example of a low cost, low power fanless PC computer costing less than USD 800, which consumes only 10-15W of power. Ideally, two network adapters (NICs) should be used, one which can be connected to the Internet (optional) and one with the local network (LAN) with the wireless access point(s). Depending on local sunshine/insolation, one 130W solar panel may be sufficient to support this device 24 hours per day.

In the most simple case, the only other equipment needed is a wireless access point (outdoor type, 802.11b/g/n) with an 8 or 12dB omnidirectional antenna mounted in an elevated position in good line of sight for the intended hotspot area.

Below: example of a Wordpress content management system (CMS) installed on the local hotspot server. The example below is designed as a “community information service” but could be configured as a school server.

## e-Inclusion Public Information Service

Wi-Fi broadcast system



### Conservation

Posted on [November 13, 2010](#) by [admin](#)

The Marovo wiki is an example of empowering communities to manage and preserve indigenous knowledge about their environment.

#### Recent Posts

- [Conservation](#)
- [Health promotion](#)
- [Farmer networking](#)

#### Agriculture

## REQUIREMENTS

- PC computer, ideally with 2 network adapters NICs
- Wireless access point (which can be upgraded with a high gain omni directional antenna)
- Open source software:
  - Ubuntu 10 Linux, LAMP, DNSMasq, MediaWiki, Wordpress

## INSTALLATION

The Wi-Fi Broadcast System is a Wi-Fi 802.11 hotspot with a difference. Connected users find that no matter where they surf all they get is the internal site. It's fully self-contained and battery powered with no connection to the Internet involved. It basically makes a Wi-Fi radio station, ideal for providing information in areas with lots of Wi-Fi users.

It works by pretending to be a regular hotspot but when users connect their browsers are sent to an internal web server because the DNS server is configured to lie. No matter that site they try to lookup the name of, it always returns the laptop's address. Memeteam.net, Google.com or anything else becomes 10.0.0.1, the home of our web server. Then the laptops web server is setup to redirect any request to its own content.

The actual content will of course depend on the school, telecentre and/or community needs. In our example, we have added the open source Content Management System (CMS) Wordpress, which is easy to install and configure and features blog-style forums, a mobile browser plug in so that people connecting using mobile phones will see the content in a simple convenient format. Teachers and students/classes can keep their own blogs, for instance. We have also added the MediaWiki software, which can then be used by the school to participate in content creation – perhaps associated with a project such as indigenous knowledge management, environment and conservation, customs and culture or agriculture.

These instructions are meant to give a general outline of the process, not a step by step guide. A fair bit of familiarity with Linux is a good thing if you want to do this.

## THE WORDPRESS MOBILE EDITION

This feature will reformat the Wordpress pages when viewed in a mobile phone browser.

View of the "Carrington" theme displayed automatically when viewing with a mobile



# IDEAS FOR LOCAL AND PARTICIPATORY CONTENT DEVELOPMENT

Content can be developed in various formats, i.e.

- HTML – local websites of content
- Audio mp3 productions – for download as locally produced “podcasts” – can also be broadcast by radio
- Wiki based – participatory web content

Projects involving interest groups within the community can use the hotspot to provide information and a space for discussion, through the use of the blog with accompanying forums provided by Wordpress; for instance:

- Teacher training resources
- Farmers exchange; content and discussions about agriculture. Presentation of local farmers’ and agriculturalists views with discussions using the blog feature. Regular farmer’s update podcasts downloadable as mp3 files for mobile phones, with possibility of providing feedback via the Wordpress blog or direct to the Telecentre by SMS;
- Health promotion (behavior change communication). Project based development of broadcast audio on important health issues selected by the community. Typically, a local production team works with the local health workers and in consultation with health authorities, to produce quality assured health promotion content. Usually audio podcasts, produced with much participation (see the community radio section of this document)
- Indigenous knowledge management. A local wiki running on such a hotspot is a useful way to capture and archive IK content. For instance, a local language environmental encyclopedia. Custom stories, traditional knowledge, etc.



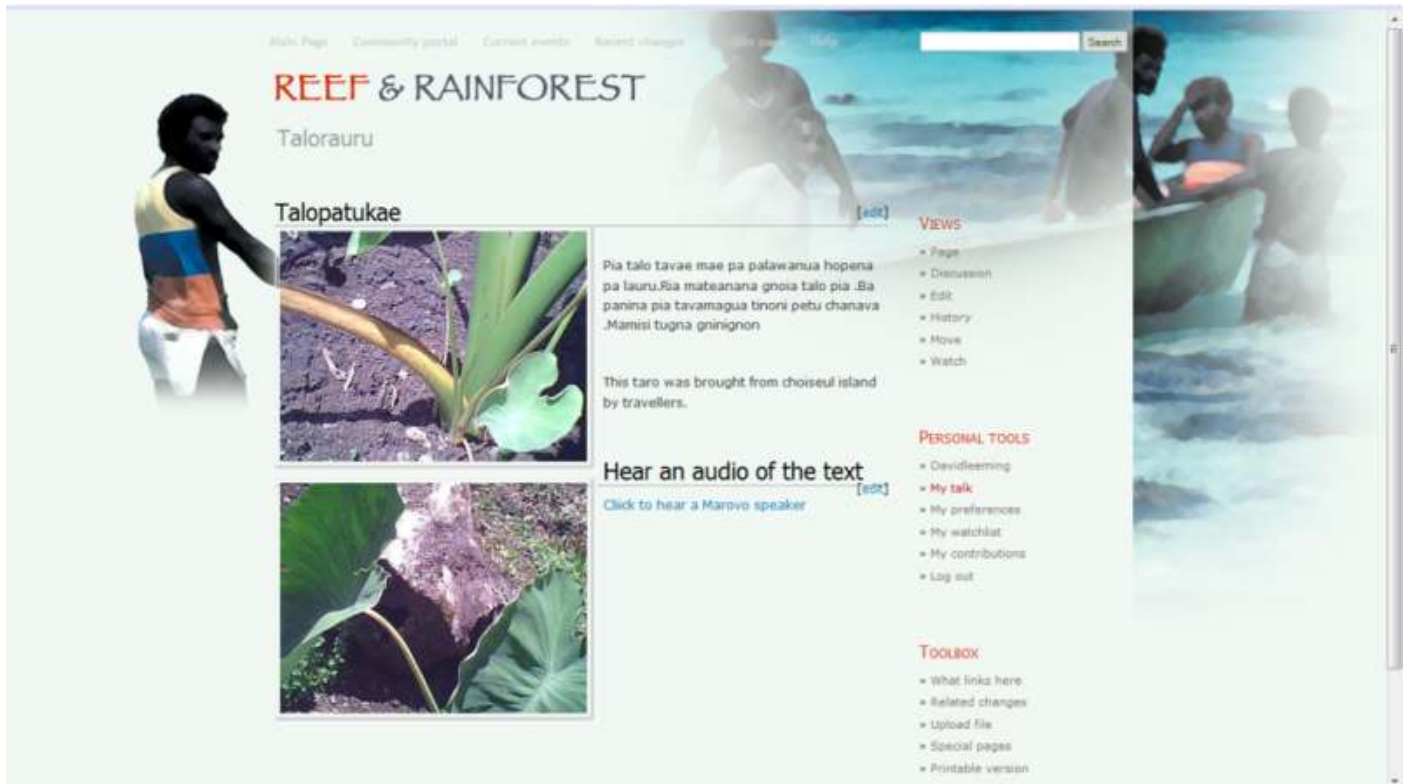
## Welcome to TaroPest

TaroPest is a single source for information on the pests and diseases of taro (*Colocasia esculenta*) in the South Pacific. This CD allows you to identify or find out facts about pests or diseases you may encounter on taro in the region. Click on one of the buttons below to progress further.

Example of HTML content. This is a farmer’s technical tool called TaroPest, which allows farmers to drill down to identify pests or diseases of a staple crop, the Taro plant.

What would you like to do?





Another example: a wiki platform has been developed by UNESCO, designed as an online OER (open educational resource) complement to the Reef and Rainforest encyclopedia, with the intention of enabling schools and communities in the Marovo area (and diaspora) to access and contribute online OER content in Marovo language through this wiki, with a particular emphasis on education. Lesson plans are being developed collaboratively using these pages on the WikiEducator to guide teachers and to align the plans with the curriculum. For instance, a special Lesson Plan Template tool has been developed and teachers are already using it to create high quality lesson plans. In this way, the process will be taken forward sustainably by the participating teachers following the initial training.

The wiki is installed locally at Patukae, accessible also by Chubikopi and Hnkole schools (and any others that will connect via the wide-area Wi-Fi coverage) and is also online at <http://ma.marovo.org> (the online version is quality assured by Marovo and Honiara based moderators).

WikiEducator pages for this project, including lesson planning template:

[http://wikieducator.org/Patukae College/OER Reef and Rainforest wiki in Marovo Language](http://wikieducator.org/Patukae%20College/OER%20Reef%20and%20Rainforest%20wiki%20in%20Marovo%20Language)