



## Characterising Water Resources for Community Capacity Development: Tenganan, Bali



**Final Report - 7<sup>th</sup> January 2007**

**Community:**

Tenganan, Bali, Indonesia

**Partner Organisation:**

Wisnu Foundation (Yayasan Wisnu)

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**December 2005 -**

**September 2006**

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## 1 Title

“Characterising Water Resources for Community Capacity Development: Tenganan, Bali”

“Karakterisasi Sumber Air untuk Peningkatan Kapasitas Masyarakat: Tenganan, Indonesia”

## 2 Summary

*Characterising Water Resources for Community Capacity Development, Tenganan, Bali* is a project undertaken by Engineers Without Borders Australia (EWB) spanning from December 2005 until August 2006. The aim of the project is to build the capacity of the community of Tenganan to decide on an appropriate intervention by EWB to assist them with obtaining sufficient potable water. The project involves three phases, fieldwork, analysis and implementation. The first phase, involved a project team spending 3 months in Tenganan from December 2005 to collect data on all aspects to water resources in the community. The 4 month analysis phase of the project lasted from March until July 2006 and involves an analysis of the data from the previous phase and the formation of recommendations to improve the water situation in the community. The final implementation phase in August 2006 involved returning all the data, analysis and recommendations to the community. Discussions with various key community members developed the community capacity to decide if they needed a project to develop their water source. The community decided that this was so.

This project forms a proposal to EWB to continue the development action in Tenganan by forming a new project team to design and implement a solution to the water supply issues in the village.

## 3 Fieldwork

During the fieldwork from December 2005 until February 2006 Jerome resided in the project region, met with the key stakeholders, clarified the project focus, collected data on the various physical and social aspects to the water resources, and outlined to the village leaders the project process into the future.

Jerome met with all key stakeholders in the village and the project was successfully introduced to them all. It was clear from interviews with village officials, local people and government personnel that the village was in need of aid with drinking water. The issue of drinking water was also linked with wider and more critical issues in Bali regarding water quality, pesticide use and garbage disposal. This put this project in a wider context as an awareness project about all these issues. All interviewees expressed their thanks to EWB for undertaking such a project and urged EWB to take action as soon as possible.

Upon arriving in Bali the project focus was unclear to the project team, the partner organisation and the community. This was successfully clarified within the first month.

Data on the various physical and social aspects to the water resources in the community were collected. Physically this included hydrological data, dams, water distribution networks, bores, wells, water quality tests, amongst others. Socially this included structures of management of water resources, structures of rights and obligations within the community, identification of links between sub-communities, identification of cooperation / conflict dynamics within the community, identification of key individuals and relationships to ensure a successful project implementation. All this data will be presented in a characterisation report that will be duplicated in English and Indonesian.

The status of project within community upon departure was one of excitement and resolve. At the time of departure the community was extremely excited about the possibility of a project that will improve their drinking water situation. As mentioned previously, action was urged as soon as possible. The community in Tenganan are undertaking several alterations to their structures of water management according to some demands made by the project team. These demands were made by the project team in order to improve the chances that a drinking water project in the community will be successful. These will be outlined to the recommendations project team.

**Fieldwork Phase Project Team [To request contact details contact [projects@ewb.org.au](mailto:projects@ewb.org.au)]**

Jerome Bowen - Project Leader
Pak Wayan Widia “Mangku” - Key Informant
Pak Nyoman Suwita “Dom Plong” - Guide and Translator
Daniel Couton – Australia-Based Project Team: Water Quality Analysis
Ben Hooper - Australian-Based Project Team: Water Quality Analysis

## 4 Analysis and Recommendations

During the analysis phase from March 2006 until July 2006 a full report on the characteristics of the Tenganan community water resources was produced. It included the collected data and analysis of the data, as well as preliminary recommendations / options for the project to improve the water situation. The work done in Jerome’s two honours dissertations contributed to this report.

**Analysis and Recommendations Phase Project Team [To request contact details contact [projects@ewb.org.au](mailto:projects@ewb.org.au)]**

Jerome Bowen - Project Leader
Keith Smettem - Supervisor: Engineering Honours
Greg Acciaioli - Supervisor: Anthropology Honours
Giselle Degebrot – Working group
Connell Maskrey – Working group
Max Harris – Working group
Tristan Derham – Working group
Halinka Lampaski – Working group

## 5 Implementation

The final implementation phase in August 2006 involved returning all the data, analysis and recommendations to the community. Discussions with various key community members developed the community capacity to decide if they needed a project to develop their water source. The community decided that this was so.

Based upon their knowledge of the water sources and the analysis discussed with them, the community was also able to outline the type of project that they wished to build. This will be a treatment process for water from their local river which will feed into the existing pipe and tank network that supplies the almost 4,000 people in the community. Upgrades will be made to the system to increase accountability of water distribution, and to supply some of the more remote communities.

A survey has been made of the two areas available for construction by the community. The community has also committed funds, all the unskilled labour for free, and all required wood, sand, gravel, stone and clay will be sourced free from their local environment. The community has also committed to strengthening the local organisation responsible for managing the existing pipe and tank network. In addition, in partnership with local NGO Yayasan Wisnu, the treatment process will be used as a educational tool so that the benefits of this project will spread beyond the immediate effects of the project funds and volunteer time.

**Implementation Phase Project Team** [To request contact details contact [projects@ewb.org.au](mailto:projects@ewb.org.au)]

Jerome Bowen - Project Leader
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Pak Nyoman Sadra – Mediator and translator

## 6 Future Work Resulting

This project has extended into the design and implementation phases of the water supply project with the community of Tenganan. A new project has been proposed, approved and the recruiting and design phases are underway. The project is called Tenganan Water Supply.

In the future, Jerome will, from the project reports and his honours thesis, create a knowledge resource for EWB about: responsible development; multi-disciplinary contributions to development; critiques of development; capacity development; and characterisation and negotiation as a necessary pre-condition for all responsible development projects.

Additionally a basic framework will be produced for the use of pre-project characterisation and negotiation as a feed for larger scale development projects in communities.

## 7 Related documents and resources

### Sumber Air di Desa Tenganan

The document outlining the water resources in Tenganan after the analysis and recommendations phase, as well as information about the analysis of data and recommendations for improvement to the water resources. This document was produced for the purposes of capacity development within the community. This document was translated into Indonesian from the document “Desa Tenganan Water Resources”.

### Desa Tenganan Water Resources

The document outlining the water resources in Tenganan after the analysis and recommendations phase, as well as information about the analysis of data and recommendations for improvement to the water resources. This document was produced for the purposes of capacity development within the community. This document was the original from which the Indonesian translation was taken for “Sumber Air di Desa Tenganan”.

### EWB Water Resources Work in Tenganan, Indonesia –September 2006

This document outlines the information important to EWB work in Tenganan, Indonesia in September 2006 at the conclusion of this project. The document is based predominantly on the document “Desa Tenganan Water Resources” but contains considerable additional information regarding the Tenganan community, additional information about the water resources, and field information about the project that the Tenganan community has chosen. In addition it details objectives that were set and achieved, contact details of relevant people in the community and the partner organisation, and lessons learnt from the development process.

**NOTE: This document is still undergoing revisions**

**Bowen, J. P. (2006) “A multidisciplinary look at capacity development and its application through the characterisation of water resources in Tenganan, Indonesia”, *Anthropology Dissertation*, The University of Western Australia.**

This document details and analyses the development situation in Tenganan, Indonesia in terms of the various stakeholders involved in EWB development work with Tenganan. It is an essential read for EWB members that wish to work on project activities requiring an understanding of the Tenganan community and the dynamics between stakeholders in this development project. This would include members working on capacity building, management, maintenance and source protection.

**Bowen, J. P. (2006) “A multidisciplinary look at capacity development and its application through the characterisation of water resources in Tenganan, Indonesia”, *Engineering Dissertation*, The University of Western Australia.**

This document details much of the engineering analysis used for the project *Characterising Water Resources for Community Capacity Development: Tenganan, Bali*, as well as analysing the dynamics between stakeholders in the project. This document will be useful to EWB members that wish to work on project activities regarding sustainability, management, maintenance source protection.