

Regional Workshop: Pathways Towards Improved Water Education Curricula

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WATER EDUCATION IN TIMOR-LESTE



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Outlines

- ❑ Introduction
- ❑ Water Education Issues and Challenges
- ❑ Current Situation Related to Water Curriculum
- ❑ Approaches for Introduce Water Education into School
Curriculums
- ❑ Conclusions and Recommendation



Introduction

- ❑ Timor-Leste is a young country which located between Indonesia and Australia, with the total population is about 1,167,242 (*TL Census Data, 2015*).
- ❑ Water education is an important question and why we need water education?

for changing our mentalities and communities behaviors on water management, protection, conservation and water supply and utilization.

- ❑ Water education in Timor-Leste is still as a cross sectional with various subjects within the primary schools, senior high school and universities.

This is not outlined as a discipline, but as a chapter that exists within the various disciplines, such as natural science and geography, biology, geology and also environmental.



Motivation

352^K

352,000 people in Timor-Leste do not have clean water.

663^K

663,000 people in Timor-Leste do not have a decent toilet.

70

70 children under five die a year due to diarrhoeal diseases caused by poor water and sanitation in Timor-Leste.

High dependence on ground water
Uncontrolled deforestation
Emerging water quality problem
Lack of water supply management



Motivation

- . Throw garbage on the street and in the water
- . Build in risky / very steep areas
- . Streams, flood risk areas.
- . Cut trees as they are key to the environment.





Introduction

- ❑ The main objective of this paper is presenting:
 - ✓ The water education issues and challenges in Timor-Leste;
 - ✓ The approaches for introducing the water education into school curriculums.



Water Education Issues and Challenges

- ❑ Water subjects are still mixture with the other disciplines, as well as natural science and geography, biology and also geology and environmental;
 - ✓ *Within these disciplines, natural science and geography are taught in primary schools and biology and geology are in secondary high schools and universities;*
 - ✓ *So, water subjects are only outlined as a chapter that come up with the general concept about the water resources, such as definition and utilization, but it doesn't cover the detail descriptions about the water, even from upstream to downstream;*
- ❑ The other challenge is lack of communities' assessment or access on water education;
- ❑ Water theme doesn't yet integrate as a proper discipline within the school learning process, such as from the primary schools, secondary and senior high schools including universities.



Current Situation Related to Water Education

- ❑ In Timor-Leste have some water resources conservation and education programmes for communities and students,
 - ✓ Which were conducting by the Ministry of Public Works under the National Directorate of Water Resource Management; Ministry of agriculture, Ministry of environment
 - ✓ Including some local NGOs, such as Permaculture; Timor Geoscience and Development Society (TGDS) and the WASH Learning Network.
 - ✓ They have provided some seminars and workshops for the local authorities, students and communities regarding the water management, protection and conservation and also the additional information about water pollutions and environment.

Curriculum-Integration of water subject-Elementary School

Anexo II

Plano curricular do 3º ciclo do Ensino Básico

Área/Disciplina	Ano de escolaridade		
	7º	8º	9º
Área de desenvolvimento linguístico			
Tétum	3	3	3
Português	5	5	5
Inglês	3	3	3
Área de desenvolvimento científico			
Matemática	5	5	5
Ciências Físico-Naturais	5	5	5
História e Geografia	3	3	3
Área de desenvolvimento pessoal e social			
Educação Física	2	2	2
Educação Artística	2	2	2
Educação Cívica, Cidadania e Direitos Humanos	3	3	3
Educação Religiosa e Moral	2	2	2
Competências para a Vida e para o Trabalho	2	2	2
Total de tempos lectivos	35	35	35
Formações transdisciplinares: valorização do tétum e do português; educação para a cidadania; valorização de contextos culturais de Timor-Leste; integração de Timor-Leste no espaço asiático.			



Water is a precious gift for our life.

Curriculum-Integration of water subject-Senior High School-Biology

4.3 | Práticas agrícolas e biotecnologia

- 42 1 A importância ecológica e ambiental do setor agroflorestal
- 43 1.1 Produção agrícola: os casos do arroz e do milho
- 44 1.1.1 Cultura do arroz e milho
- 45 1.1.2 Biologia do arroz e do milho
- 48 1.2 Outros sistemas agroflorestais importantes em Timor-L
- 50 2 Agricultura, biotecnologia e produção integrada
- 50 2.1 Produção integrada
- 51 2.2 Melhoramento e biotecnologia
- 52 **IDEIAS-CHAVE**
- 53 **EXERCÍCIOS DE APLICAÇÃO**



Curriculum-Integration of water subject-Senior High School Geology

3º	<p>3. Os recursos de Timor-Leste: características, potencialidades e ameaças</p>	<p>1. Recursos naturais</p> <p>Recursos renováveis</p> <ul style="list-style-type: none"> - A água – exploração e contaminação das águas superficiais e subterrâneas - O solo – características, potencialidades e ameaças - As florestas – características, potencialidades e ameaças - O mar – características, potencialidades e ameaças
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Lecionação de conteúdos programáticos

Aplicação de instrumentos de avaliação escrita

Correção dos instrumentos de avaliação escrita

Autoavaliação

Total de tempos letivos previstos para o 3º período



Water Subject at University

- Different subjects on water education/engineering in the Program on Biology Department, Agriculture, Civil Engineering and Geology Department in University.

- Faculty of Education and Humanitarian (Biology Department)
 - ✓ Technical Water Quality laboratory
 - ✓ Microbiology
 - ✓ Biochemistry
 - ✓ Biotechnology
 - ✓ Marine Ecohydrology
 - ✓ Environment Education

- Faculty of Agriculture: Hydrographic Basin, Soil and Water Management, use and conservation of water and soil, Aquifers Introduction

- Faculty of Engineering, Sciences and Technology (Civil engineering: Mechanical Fluid, Drainage, Hydrology, Hydraulic). (Geology: Hydrogeology)



University Education: Seminars on Water Quality and water Pollution at Faculty of Engineering, Sciences and Technology



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Activities: Discuss, sharing,-UNTL, WaterAid, TGDS and Permaculture



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Community Education: to awareness raising on water conservation, work with community leaders, water should be part of existing hygiene promotion campaigns (Ministry Education and Ministry of Health -Indeed water campaign)



Hands Washing Campaign FOTO: MPTIG/Janu/Changgo-2017



Workshop on WASH Development and its impact on environment



Civil Society participation



Water Utilities for the garden

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Approaches for Introduce Water Education into School Curriculums

- ❑ It is necessarily to identify and well understand the potential resources that are existed, such primary, secondary and senior high schools including universities.
 - ✓ *Timor-Leste has these schools that are necessarily to introduce the water subjects as proper discipline within the education sector with the aims to teach and educate the students about the water resources and water management.*
 - ✓ *The role of the teacher is very significant in contributing to the formation of students with educational practices which help students in understanding the local and global realities and the promotion of habits and attitude regarding the water utilization.*
- ❑ Its very fundamental to well formulated the water curriculum into school's levels, from primary to universities with different water subjects.
- ❑ Partnership in decision making and plan design for water curriculum as an integrated approach for water education in Timor-Leste.

Water Education in Schools-need to establish guidelines for a teacher



Water Education Discussion on Water Dialogue in Dili

Establish and organize water education projects for school, University and community-Trainings modules, seminars, workshop and conference using technology for pedagogical



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Conclusions and Recommendation

Water education is the key for water management, protection and conservation; so “We need to learn how to value water.

The importance of water education is at all levels, such as professional, engineers, managers, technician and decision maker. Followed water education in schools, Community education

Timor-Leste is still has the problems about water education, such as water subjects are not yet introduced as proper discipline within the school curriculums;

Lack of communities' access on water education due to the limitations of resources provided, as well as water trainings, dialogues and workshops;

Lack of water management, protection and conservation as the big challenges for Timor-Leste.



Recommendation

- ✓ Better understanding and well formulated the water curriculum including good partnerships are very essential for water education development in Timor-Leste;
- ✓ Introducing the water subjects as proper discipline within the education sector is the key to teach and educate the students about the water resources and water management.
- ✓ The role of the teachers and trainers have significant contributions to the formation of students and communities in water educational.

Providing and establish tools: videos, games, database, entertainment for the children “ Preservation of natural values”

Water Education in Schools-need to establish guidelines for a teacher-learn case Malaysian and Indonesia



Thank You



Water Education in Timor Leste

- ❖ Multiple issues in water education which are cross cutting and often implicit
- ❖ Three levels of implementation should be considered-school, community and University.
- ❖ Each Level will use specific and targeted interventions.
- ❖ Importance of involving government, community groups, womens groups
- ❖ In addition, technical and vocational training to be covered and linked to the water quality center