



Xanana Gusmão, President CNRT/CN

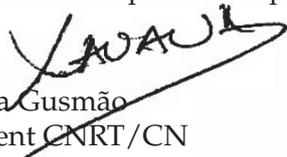
We East Timorese have liberated our homeland. Now, independence for East Timor means that we need to address many questions about development. We are building our nation and our future. We need to make wise decisions for the sake of future generations.

I am very pleased that the Conference on Sustainable Development was held in East Timor.

Building our future requires vision and planning – based on an understanding of our current situation and development prospects. This conference provided a valuable opportunity for us to consult with experts and to discuss and develop strategies to address sustainable development in East Timor.

Presentations at the conference by East Timorese and international experts provided information that we need as part of our planning process. The broad participatory base and large workshop component of the conference provided a valuable opportunity for us to discuss many issues, including protection of the environment, economic development and social justice. We need to develop strategies for the sustainable development of our economy while protecting and repairing the environment.

Our people have suffered enough. The future wellbeing of our people is of utmost concern to me. Planning for our future requires full consideration of how to improve the lives of the people of East Timor. The conference on sustainable development is an important step along the road to planning a sustainable future for East Timor.


Xanana Gusmão
President CNRT/CN

Sergio Vieira de Mello, Transitional Administrator

I supported the Conference on Sustainable Development in East Timor from its inception – in particular its important focus on the profound links between economic development and social and environmental well-being. I am delighted by the success of the Conference.

One of the key areas of global concern has been to put people at the centre of sustainable development and to recognise their entitlement to lead a healthy and productive life. The new nation of East Timor has a clear opportunity to show leadership by embracing the principles of sustainable development.

East Timor is developing itself politically, and socio-economically. The starting point for East Timor is social and political justice. Sustainable development in East Timor requires the empowerment of communities, the full participation and education of all sectors of society as well as integrated planning and environmental assessment.

This Conference provided important opportunities for raising awareness and knowledge about sustainable development and the environment in East Timor. It was a good opportunity to begin thinking about innovative solutions for East Timor.

It is particularly important that the people and the future government of East Timor devise an effective sustainable development strategy to secure the sustainable utilisation of East Timor's natural resources, and the repair of past environmental damage. The outcomes of this conference will help to ensure that environmental concerns are integrated into development planning in all sectors.

I give my full support to the Task Force on Sustainable Development that is being established as an outcome of this conference. This Task Force will be a key agent for strategic planning for sustainable development in East Timor.

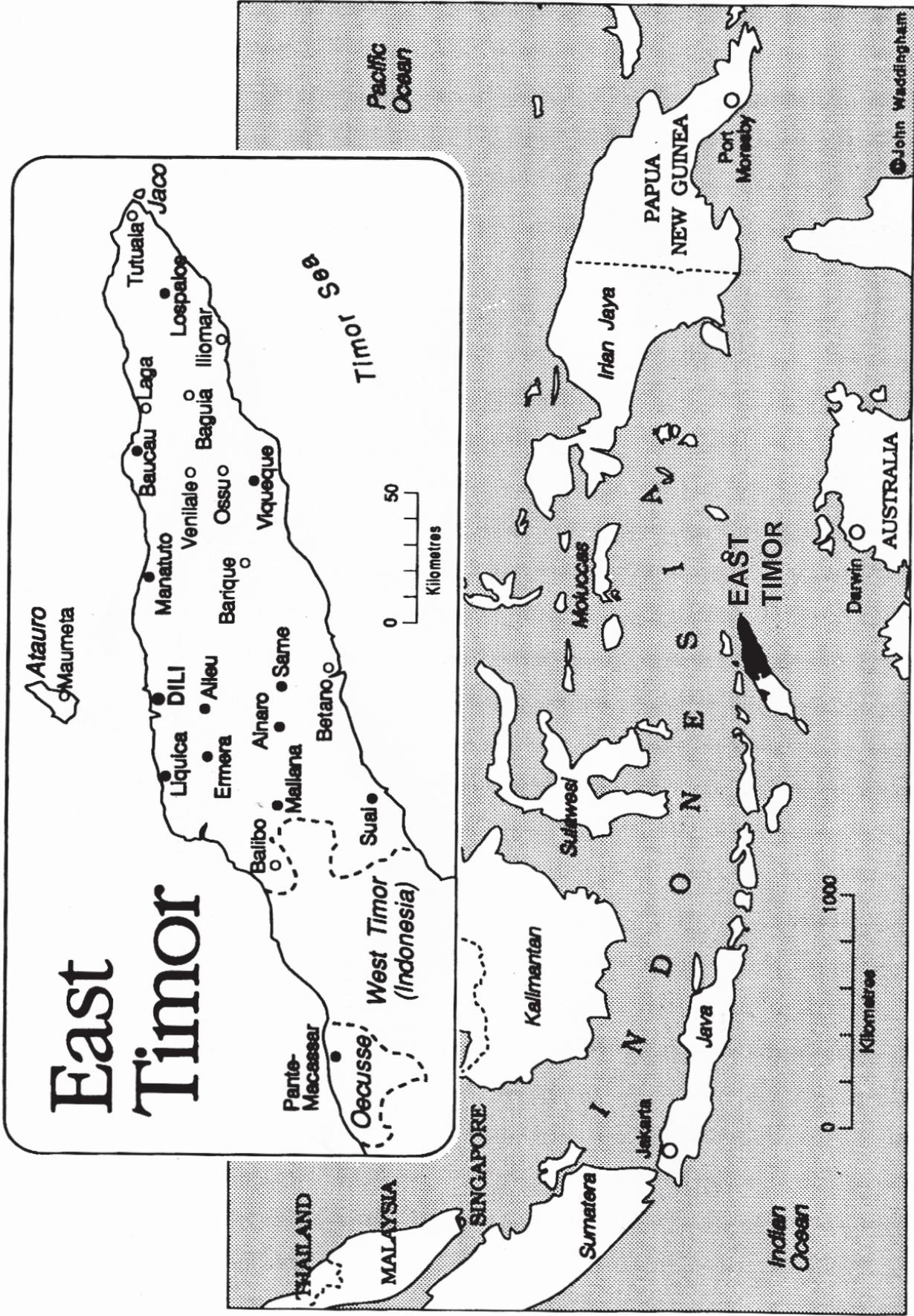
These conference proceedings will serve as an invaluable handbook for development planners in East Timor as they undertake the complex task of balancing conservation and development objectives to meet the needs and aspirations of the Timorese people.


Sergio Vieira de Mello
Transitional Administrator
Special Representative of the Secretary General

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East Timor is the world's newest nation. It was a Portuguese colony for more than 400 years and was brutally occupied by Indonesia between 1975 and 1999. During the long period of colonisation and occupation, East Timorese people were unable to participate in decisions about their future. The years of foreign rule were characterised by oppression, neglect, poverty and environmental exploitation and degradation. For many years, East Timor was closed to the outside world. This oppression engendered a passionate culture of resistance and desire for *ukun rasik* (self determination). The unswayable resistance and struggle by the East Timorese led to their liberation.

In 1999, the Indonesian occupation of East Timor ended. The Indonesian withdrawal was punctuated by a 'scorched earth' policy leaving a wake of ash and smoke. This destruction was carried out by Indonesian backed Militia's, and the Indonesian Army, as retribution for the overwhelming vote for independence by the East Timorese in a Referendum on the 30th of August 1999. In only three weeks in September 1999, more than 75% of East Timor's infrastructure was destroyed. Thousands of East Timorese were killed, and 200,000 East Timorese were forcibly removed from the country. Almost the entire remaining population were internally displaced.

East Timorese have now returned to rebuild their nation and their lives. In many respects, the new nation is starting from scratch. The building of the nation of East Timor provides many opportunities to avoid the mistakes that have been made by so many other countries around the world. East Timor has the opportunity to find innovative solutions to the many challenges it is facing.

The principles of sustainable development are a useful starting point for nation building. Sustainable development ensures the balanced integration of economic, social and environmental goals. The internationally recognised definition of sustainable development, produced by the World Commission on Environment and Development (1987) is "development that meets the needs of the present without comprising the ability of future generations to meet their own needs".

There are many ideas and many models that can be used in East Timor. It is hoped that this book of Proceedings from the Conference on Sustainable Development, held in Dili from January 25-31, 2001, will serve as a useful platform

for strategic planning for sustainable development in East Timor.

The Conference on Sustainable Development was inspired by the moment of "beginning" in East Timor. There was clearly the opportunity to do things differently. An opportunity to take hold of all of the ideas for sustainable development that have been developed. While there is no blueprint for sustainable development, people around the world have given much thought to how it can be achieved. It is clearly recognised that current development practices are unsustainable and that a new approach to development is needed.

The Rio Earth Summit in 1992 resulted in a major sustainable development strategy - Agenda 21. Agenda 21 set out to specify the issues and topics that need to be dealt with in any attempt to achieve sustainability. It addresses poverty, hunger, disease, illiteracy and environmental degradations as a set of interrelated issues.

Included among the 27 Principles of Agenda 21 are the need for: environmental protection • a global partnership for the conservation, protection and restoration of the integrity of the Earth's ecosystems • elimination of unsustainable patterns of production and consumption • access to information • effective environmental legislation • use of a precautionary approach • environmental impact assessment • recognition that women have a vital role in environmental management and development • mobilisation of the creativity, ideals and courage of youth • and respect for the importance of indigenous people's knowledge and traditional practices. Principle 25 of Agenda 21 is particularly relevant to East Timor. It states that "peace, development and environmental protection are interdependent and indivisible".

Agenda 21 is an action plan that calls on nations to adopt national strategies for sustainable development. Many countries around the world are presently working towards implementing National Sustainable Development Strategies.

The enthusiasm with which the East Timorese participants greeted the conference made it clear that there is a strong desire for sustainable development in East Timor. Over the long 7 days of the conference, a comprehensive range of sustainable development issues were addressed. The majority of participants were East Timorese.

Papers were presented by international guests and East Timorese experts. The conference began with an introduction to sustainable development. Plenaries and workshops held over the following



five days dealt with the major topics of “natural resources and conservation”, “economy”, “technology”, “social issues” and “institutions”. Each of these topics is included as a chapter in this book. The majority of presentations made at the conference are published in this book. Many of the published papers are summaries. Papers, including some full papers, and conference outcomes are also available on the conference website that can be found on the Timor Aid homepage at <www.timoraid.org>.

We would like to thank our East Timorese colleagues for their contributions to this conference and to this book. They prepared papers at short notice, and with already overwhelming workloads.

Conference recommendations are included in this book. Seven overarching recommendations are made by the conference. These include the key recommendations for sustainable development to be written into East Timor’s Constitution and for the drafting of a National Sustainable Development Strategy.

A three page summary of workshop results was endorsed by the conference. The summary document is included in this book. The full workshop outcomes are included in the relevant chapters.

All of the conference workshops identified education as a key to sustainable development in East Timor. The importance of education for sustainability was highlighted by Armindo Maia, the Rector of the University of Timor Lorosa’e’. He wrote that “there is no doubt that every conscious Timorese sees and feels the need to do something to improve the condition of the environment. There is no doubt that education, particularly formal education is seen as one of the major and powerful means to achieve that goal”.

Education was one of the fundamental roles of the conference – it served to educate and raise awareness about environment and sustainable development issues. The Conference also served to forge strong networks within East Timor and establish alliances with international sustainable development organisations.

On the concluding day, the Conference endorsed a key conference outcome - the establishment of a ‘Task Force on sustainable development’. The National University of Timor Lorosa'e (UNTI) rose to the occasion and accepted to house the Task Force at the University. The Task Force is being established by a Sustainability Unit, affiliated with UNTIL’s Research Centre. The Task Force will include stakeholders from all sectors including government, the university, civil society, the church, business, and the community. It will be able to carry forward the conference strategies and recommendations, and will be able to contribute to a national sustainable development strategy.

The organisers of the conference deliberately

sought out the involvement of people from the districts to endeavour to include representation from national to village level. Workshops were held in six districts before the conference. More than 25 rural representatives from eight districts attended the conference. On the closing day of the conference a district representative spoke about the issues of concern for the rural areas. Follow-up workshops were held in the districts to share conference results, and to help ensure that the Task Force has an initial relationship to the districts. The results of the Rural Outreach Program are included in this book.

The conference recommendations, papers and workshop outcomes published in this book provide an overview of sustainable development issues in East Timor one and a half years after the total destruction of infrastructure, and one a half years into the complex process of nation building. They provide a snapshot of the situation as it stands today, as well as a roadmap for the implementation of sustainable development in East Timor. It is hoped that you will find the breadth of topics covered stimulating and useful.

Sustainable Development and the Environment

Sustainable development emerged from a global recognition of environmental problems. The conference aimed to highlight the environment in the context of sustainable development. The livelihoods and quality of life of East Timorese people depend on a healthy and productive environment. For example, agriculture, fisheries, and tourism all depend on the environment, and all people and industries depend on a healthy water supply.

There has been little attention given to the environment in the post crisis period. However, environmental degradation is a major source of unsustainability. Environment issues need to be tackled as an integrated component of overall development.

An overview of East Timor’s environment was presented at the conference by Mario Nunes, the manager of the East Timor Transitional Authority’s Forestry Unit. In the introductory session, Dionisio Babo Soares presented a paper on East Timorese perceptions of culture and the environment. He explained the relationship between traditional culture and the environment, and concluded that: ‘culture, in Timorese perception, is also the means to take care of the “environment”, and the latter may not exist should culture not be respected. Both are interrelated and are the very means for human survival’. His paper also addresses environmental impacts prior to colonisation, and under the Portuguese and Indonesian regimes.

East Timor’s environment was degraded over the many centuries of Portuguese rule. The 24 years of Indonesian occupation impacted heavily on East

Timor's remaining natural resources. Consequently, East Timor has pervasive ecological problems.

Sandalwood – a symbol of pride for the East Timorese people – was one of the principal resources that brought the Portuguese to East Timor. It is a slow growing parasitic species. Wholesale exploitation of sandalwood by the Portuguese brought it close to extinction. The few remaining stands were harvested by the Indonesians, and today, very little sandalwood remains.

During the Indonesian occupation East Timorese people were removed from their sacred lands and forced to move to controllable and accessible transport routes. Transmigrants were also brought to East Timor from Indonesia. These practices put more stress on an already fragile environment.

East Timor's environment and natural resources

East Timor is not overly well endowed with natural resources. It has relatively unproductive soils and low rainfall. The Timor Gap's oil and gas reserves are among the few high value resources that can be exploited for economic purposes. The Timor Gap is thought to be one of the world's twenty richest oil deposits. Revenue could also be generated from sustainable certified export products, starting with organic coffee. Ecotourism also provides key economic opportunities for East Timor.

East Timor has dramatic topography, dominated by the central Ramelau mountain range. Unlike its neighbouring islands, East Timor's origin is not volcanic. East Timor is a continental fragment. It is thought to be a piece of the Australian geological plate that was uplifted by collision with the Indonesian plate. East Timor's soils are derived from limestone and metamorphosed marine clays. They are much less fertile than soils derived from volcanic rock. Low soil fertility is compounded by the fact that many tropical soils have inherently low fertility as a result of rapid decomposition of organic matter. Further, many parts of East Timor have very steep slopes with shallow soils that are very susceptible to erosion. In many areas, deforestation and grazing, coupled with seasonal heavy monsoonal rains have resulted in loss of topsoil. Ongoing erosion is the cause of sedimentation of waterways and reservoirs.

East Timor is extremely dry, as it is situated in a rain shadow. East Timor's watersheds are divided by the central mountain range. Due to the narrowness of the island, the run of rivers is short, and few rivers run all year. The north is particularly dry, and is characterised savannas that are burnt annually.

It is thought that East Timor was originally largely forested. Human impacts, including repeated burning and land clearing for cultivation, hunting and grazing have resulted in the loss of most of the original forests. Very little forest remains. The

vegetation now largely consists of secondary forest, savanna and grasslands. There is a great need for research to determine the ecology of East Timor's flora and fauna.

East Timor's fauna has the highest level of endemism in the Nusa Tenggara region. However, many species of animal in East Timor are threatened with extinction. In particular, species that rely on forests are endangered due to extensive deforestation. A number of marine animals are also threatened with extinction.

The coastal zone of East Timor is thought to be largely unspoilt. Mangrove ecosystems are in good condition, and many beaches are fringed by coral reefs. These reefs are important for their ecological functions. They also provide resources for a artisanal coastal fishing industry and will be key to the future ecotourism industry in East Timor.

In urban areas, pollution and waste pose environmental and concomitant health problems. There are currently no waste management systems in East Timor. For example, Dili currently does not have a sewerage system. There is no system for the collection and disposal of solid waste in Dili. Illegal waste dumping in Dili and its surrounds are resulting in the accumulation of large piles of rubble and refuse. Due to lack of waste management, ground water – the source of drinking water for many of the people living in Dili – is being polluted.

Further, development cannot be considered sustainable unless it takes into account the likely impacts of climate change. Climatic disruption from global warming is already causing major disasters affecting the health and living conditions of people all around the world.

A sustainable future for East Timor

Sustainable development in East Timor will depend on sound socio-economic policies and effective environmental planning and management. It needs to be remembered that people are at the centre of development and that community involvement in development planning is the key to sustainable development. A transparent, accountable and participatory government structure is required in East Timor to ensure that communities and civil society are able to participate in decision making.

The Conference on Sustainable Development has raised the profile of the environment in East Timor and has stressed the need for a sustainable approach to development. Sustainable development is fundamental to reducing poverty and will ensure an improved quality of life for East Timorese people today, and for future generations.

In the words of Mariano Sabino, speaker on sustainable development from the perspective of youth: "Hopefully East Timor will become a nation that is green and prosperous. This is the hope of all the children of the nation of East Timor".





ACKNOWLEDGEMENTS

Many people have provided invaluable support and contributions to the Conference on Sustainable Development. The Conference was initiated by Nobel Peace Prize Laureate, Dr. Jose Ramos Horta and Timor Aid. Very early on in the reconstruction of East Timor, when few resources were available, Timor Aid was able to rapidly build a functional organisational structure. This capacity assisted the progress of the conference, providing resources and logistical support. The participatory process of organising the conference was always encouraged by Timor Aid CEO, Juan Federer and President, Ceu Federer. It was due to the efforts of Timor Aid that the conference was able to become a reality.

The Conference, and hence this publication have been made possible by support from donors: USAID, HIVOS (Netherlands), Catholic Fund for Overseas Development (CAFOD), Trocaire (Ireland), Embassy of Finland, Canada Fund, UNICEF, UNDP, NZODA, and AusAID.

Further Support came from: Protimos Foundation, Ecological Architects Association (Australia), Regional Community Forestry Training Centre (RECOFTC – Thailand), Environment Australia, IUCN, Icelandic International Development Agency, Northern Territory University, Australian Volunteers International, BP Solar, Australian Computer Society, Natural Resources and Environment -Victoria, RMIT Department of Geospatial Science.

The conference was organised in a highly participatory way, with broad consultation and involvement of East Timorese. Many months went into establishing a democratic process to organise the conference. Members of a variety of East Timorese groups served as advisors, and as part of the organising committee.

Advisors to the conference were: Mario Nunes - East Timor Forestry Group (ETFOG), Joaquim Fonseca - Yaysan HAK, Aderito de Jesus - SAHE, Demetrio Amaral - Haburas, Angus Mackay and George Bouma - Environment Protection Unit, ETTA, Carlos Alberto Baros Forindo - Ema maTA Dalan ba Progresso (ETADEP).

The organising committee were: Maria Isabel Da Silva, Americo Da Silva, Ajerino Vieira, Annalisa Koeman (Assistant Coordinator), Carolyn (Carrie) Deutsch (Assistant Coordinator) and Russell Anderson (Conference Coordinator).

Others who worked on the Conference were: Marc Beuniche, Susie Russell, Sue Lennox Alfredo Isaac, Filomena da Silva Soares, Steve Malloch, Bret Earthheart, and Christian Ranheim.

Thanks to the many translators and interpreters, and in particular to Xylia Ingham, Kylie Tallo, Jeremy Stringer, James O'Brien, Richard Curtis, Oliver Green, Catharina Gunawan and Emma Baulch. Thanks also to the UNTAET Language and Training Unit.

And thanks to all the other people who have volunteered some of their time.

Thanks also go to the moderators and workshop facilitators who generously volunteered their time and expertise. In particular, thanks to Aurelio Guterres, Dionisio Babo Soares, and Helder Da Costa for their enthusiasm, support and commitment to sustainable development in East Timor.

Special thanks to the Pinto family, particularly Nona, Celestina and Abeto, and also to Alex and Ajax.

Particularly helpful in giving direction and support to the conference, were Jeremy Carew-Reid (International Centre for Environment Management) and Jenny Bryant (UNDP Sustainable Development Officer for the Pacific). Their experience, advice, and encouragement were invaluable. Arthur Hanson (International Institute for Sustainable Development) contributed greatly to the success of the conference. His expertise and assistance gave impetus to the conference outcomes.

This book has been designed and edited by Russell Anderson and Carolyn Deutsch. Many thanks to the translators and proofreaders and particularly Xylia Ingham, the chief translator of this book.



Sustainable Development in Timor Lorosa'e

The Conference adopted the internationally recognised definition that "**sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs**". Sustainable development addresses the linkages between environment, economy and social wellbeing.

Timor Lorosa'e is a rights-based country. This has special implications for sustainable development since human rights are the foundations on which sustainable economic, political and social development and environmental justice are built. The colonial and occupation periods resulted in extensive damage creating a great need for infrastructure and environmental restoration. Sustainable development, however, requires much more than repairing past damage. Sustainable livelihoods, enterprises and communities will be the effective expression of equity and justice for the Timorese people.

Sustainable development has not been fully factored into transition planning. A sustainable development strategy should be in place by the time of independence. This strategy should influence decisions within government, business and civil society. It is a major challenge, linked to governance, development planning and both domestic and foreign policy. There will be substantial immediate and longer-term benefits arising from a sustainable development strategy that can be implemented locally and nationally. For example, reforestation of watersheds will enhance economic wellbeing through restoration

of biodiversity and commensurate production of a more diverse range of products, while reducing the impacts of floods and drought. Health will be improved by sanitation and clean water supply. Greater revenue could come from sustainably certified export products starting with organically grown coffee.

These and other consequences of sustainable approaches to development will come about only if certain conditions are met. The Conference recognised that sustainable development depends upon:

- Commitment of both national and local leadership;
- Introduction of integrated planning and environmental assessment;
- Development of a cultural basis for sustainable development;
- Poverty reduction and sustainable economic opportunities;
- Environmental security and freedom from further military intervention;
- Full participation of business and civil society as well as government;
- Participation of women in decision making;
- Economic incentives for environmental improvement;
- Innovations in technology, institutions and decision processes;
- Realistic expectations and time-lines.

Progress will begin only when there is the courage to take action. Sustainable development action can start today, and should not be delayed and put off to some time in the future.



CONFERENCE OUTCOMES & RECOMMENDATIONS

Conference Recommendations

In addition to the many specific suggestions arising from the Conference papers and workshops, seven overarching recommendations are made. These represent important starting points to begin the journey towards sustainable development in Timor Lorosa'e.

- 1.** Include sustainable development within the Constitution being drafted for Timor Lorosa'e.
- 2.** Adopt a consistent set of sustainable development principles and guidelines for reviewing policies, programs and projects within Timor Lorosa'e. These may include:
 - Social equity, economic efficiency, and ecological integrity
 - The Precautionary Principle
 - User Pays Principle
 - Participatory decision-making
- 3.** Approach national development planning by drafting a sustainable development strategy for Timor Lorosa'e.
- 4.** Address acute unsustainability concerns without delay. Examples include:
 - Deforestation of watersheds
 - Rural and urban primary environmental care, with attention to water and sanitation and housing, and urban land law
 - Land tenure and rights for sustainable resource use
 - Uncontrolled fishing on the southern banks of the seas of Timor Lorosa'e
 - Recognise and conserve indigenous cultivars of useful plants
 - Limited progress on achieving sustainable livelihoods for both urban and rural youth
- 5.** Empower civil society groups and community organisations through participatory approaches to decision-making during and after the transition period.
- 6.** Prioritise participation in existing global and regional multilateral environmental and sustainable development agreements based on Timor Lorosa'e's needs and capacity.
 - A key priority is to define Timor Lorosa'e's ocean boundaries
- 7.** Invest substantially in sustainable development, including significant revenue derived from Timor Gap. Investment priorities include:
 - Reforestation
 - Sustainable agriculture and biodiversity conservation
 - Sustainable development education and research
 - Water supply, sanitation and waste management
 - Sustainable energy infrastructure
 - Environmental impact assessment of development

CONFERENCE OUTCOMES & RECOMMENDATIONS



Establishment of a Task Force on Sustainable Development

Aims

To establish a cross-sectoral Task Force on Sustainable Development that can contribute to a national sustainable development strategy.

Objectives

- Contribute to strategic planning and policy development for sustainable development;
- Ensure principles and practices of sustainable development are incorporated into national planning and projects in all sectors;
- Extend the knowledge base for sustainable development through research, capacity building and educational programs.

Role

An independent, cross-sectoral group to assist with strategic planning for sustainable development, and to monitor progress on implementation of sustainable development programs.

Secretariat/ coordination

University

Membership

Representative of stakeholders

8-16 people (ideally 10)

Majority East Timorese

East Timorese representatives

Government, University, NGOs, civil society, church, business sector, community

International representatives

Sustainable development experts, international development agencies

Funding

Seek Funding (define budget and sources)

Life span

1-2 years



CONFERENCE OUTCOMES & RECOMMENDATIONS

Workshop Outcomes

The 22 workshops on sustainable development issues first identified 4 priority issues and then listed strategies to address them. Full workshop outcomes, including all of the issues, priorities and strategies are included in the relevant chapters of this book.

The following document is a summary of the workshop outcomes and was endorsed on the final day of the conference.

Sustainable Economic Development

At all levels of society there are links between economy, environment and social well-being. The livelihoods of Timorese people depend on a healthy and productive environment. More than 400 years of colonisation by Portugal, and 25 years of occupation by Indonesia resulted in widespread environmental degradation and poverty. Sustainable development is fundamental to reducing poverty in Timor Lorosa'e.

Appropriate technology, alternative income generation, micro-credit access, eco-tourism, value adding and certification of coffee are all opportunities for sustainable economic development. Involvement of women at all levels of decision-making, and ensuring women have access to education and opportunities, is also vital to achieving sustainable economic development.

Through its purchasing policy, government can support sustainable local enterprises such as a recycling industry. The supply of water and infrastructure can be achieved through partnerships between government and business. These measures may help to stimulate markets for domestic products and services. Taxes, subsidies, energy pricing and electricity user fees, should also be designed to work for, rather than against sustainable development. Financial arrangements for investment, currency, foreign borrowing and budgets require appropriate sustainable development analysis. There is a need for transparency in national decisions about financial development.

Education at all levels of society

Education was identified as a key strategy to achieve sustainable development. An educated community is a national asset and education and its associated research programs should be a high priority for Government and NGO resources.

Education programs and materials need to be designed to address the priority issues identified in the conference workshops and listed below.

Curriculum on environmental and sustainable development needs to be written and taught in schools. More teachers are needed and all teachers need special training on sustainable development issues and how they can incorporate them into the general curriculum. Such programs will need to be diverse to meet the different needs and educational levels of East Timorese society.

Sustainable development education programs needs that were identified in workshops include: universities, schools, village communities, women, fishermen and farmers, seminars for building workers and foreign construction companies, tourist operators, language training, traditional law and cultural education, internet training, work skills, health, nutrition, maternal health and hygiene education, education about major projects such as mines and how they will affect the community, political education and the functioning of civil society, marketing skills, technical education, water catchment protection, reforestation and environmental health and leadership training.

Education programs need to be both formal and informal with practical examples used where possible such as demonstrating different farming techniques; construction methods, such as good latrine construction, maintenance and repair of appropriate technology, alternative energy and cooking fuel options, recycling and waste reduction and disposal and rainwater harvesting. Assistance in the form of micro-credit will be essential if farmers, fishermen etc are to purchase equipment.

Public education on sustainable development issues needs to be conducted using media such as posters, radio and TV. A free and independent media was also identified as vital to achieving sustainable development. Educational materials should also be available in libraries.

Capacity Building at all levels of society

After more than 400 years of colonisation and 24 years of occupation and repression, the people of Timor Lorosa'e are calling out to be active and informed participants in the process of sustainable development. This was a strong theme in many workshops. There is now an urgent need to empower people at a local level, through traditional structures and other organisations such as women's groups, youth groups, NGOs etc, so they can participate in decision-making on all the issues identified at the Conference on Sustainable Development.

There is also a need to hasten the process of "East Timorisation" where the people of Timor Lorosa'e take over the positions of responsibility including

Government, and UNTAET takes on an advisory role.

Young people, particularly students and former staff of government departments need to be called on to participate in a major training program that addresses the specific sustainable development issues listed in the education section. Extension officers should be available for all of Timor Lorosa'e and consideration must be given to maintain equity for the rural areas so they too receive their share of resources and training. Many issues are best dealt with at a local level (e.g. hygiene and waste disposal), and local communities should be given the necessary tools to develop their own appropriate solutions.

Transparent and Integrated Planning Process

Sustainable development requires transparent management of fiscal resources and holistic, cross-sectoral planning which recognises the many links between the environment and other issues. For example many health problems have environmental causes, such as the spread of diseases through poor quality water supply or improper disposal of waste and waste water.

Planning should draw on expertise in the community. It needs a transparent, integrated approach, which is regulated and includes environmental impact assessment (EIA).

Infrastructure planning needs to be cross-sectoral (e.g. waste disposal is coordinated with transport, and water supply capacity is considered when tourism planning is occurring.) Cooperation between departments will provide better outcomes for the community. Planning to meet energy requirements is needed. A Sustainable Energy Futures group could be established to assist with policy formulation in this area.

Planning should be supported by good data. In many areas the data are poor or non-existent and priority areas will need to be identified for data collection. Such data and all information on which planning decisions are made, should be available to the community. Decisions on zoning, resources and management must be transparent and accountable. Geographic information systems (GIS) should be used.

Planning should respond to the needs of the community with bottom-up meeting top-down planning:

Aldeia <> Suco <> Posto <> District <> Nation, allows for a 2-way flow of views.

Clear Policies - developed in consultation with the community

Several workshops identified the need for clear government policies to guide the future

development of Timor Lorosa'e. Policies and policy development should demonstrate equity in access to resources and services.

There was strong support for these policies to be developed in consultation with the people so they have ownership. Policy should reflect the need to find practical solutions and be drafted by a multi-disciplinary group. The final policy should incorporate the opinions and needs of local communities (e.g. the agriculture policy should reflect the needs of farmers.)

There should be ongoing communication and consultation with NGOs working with local communities.

Sustainable development policy areas suggested in workshops include Land Use and Land Zoning, Fisheries, Catchment Management, Forestry, Mining, Import/Export, Investment, Agriculture including Slash and Burn Agriculture, Import of Genetically Modified food products, Tourism, Energy and Waste Management.

Transparent System of Regulations, Enforcement and Penalties

Regulations are urgently needed in a number of areas, especially land tenure and foreign ownership.

Regulations should be drafted in consultation with customary leaders so that they recognise traditional land, individual land, and the different land zones such as forests, agriculture, industry, tourism. There also need to be regulations on citizenship, use rights of foreign investors, land tenure dispute resolution, import/export, environmental and social impact assessment for mines and major projects, company accountability, pollution prevention and waste disposal. Building regulations are also needed.

Regulations are needed to protect human rights, civil rights, the environment and labour rights.

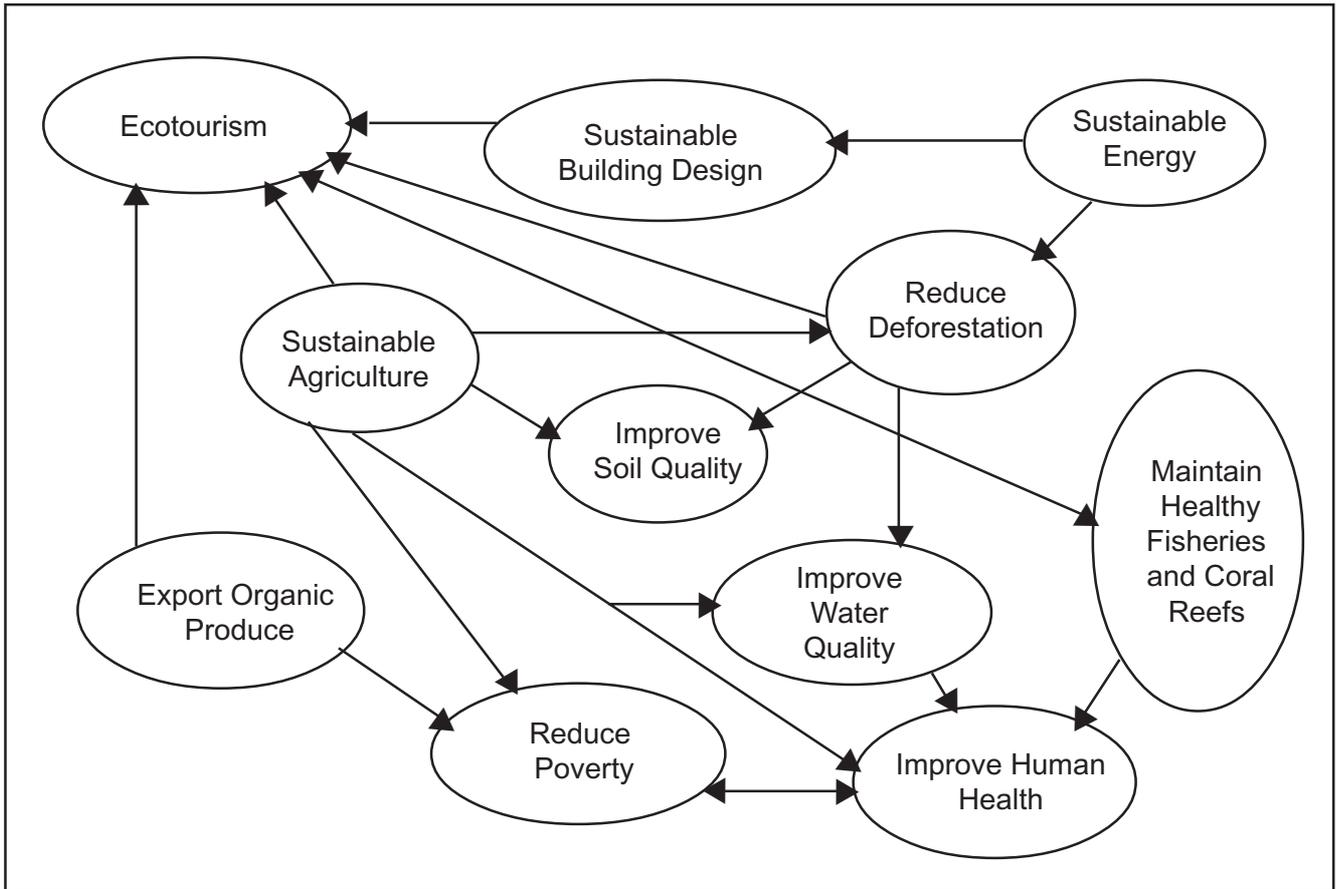
Regulations should have enforcement mechanisms, and human and material resources dedicated to their enforcement, with a system of penalties that reflect the severity of the offence.

Recognition of Traditional Structures and Knowledge

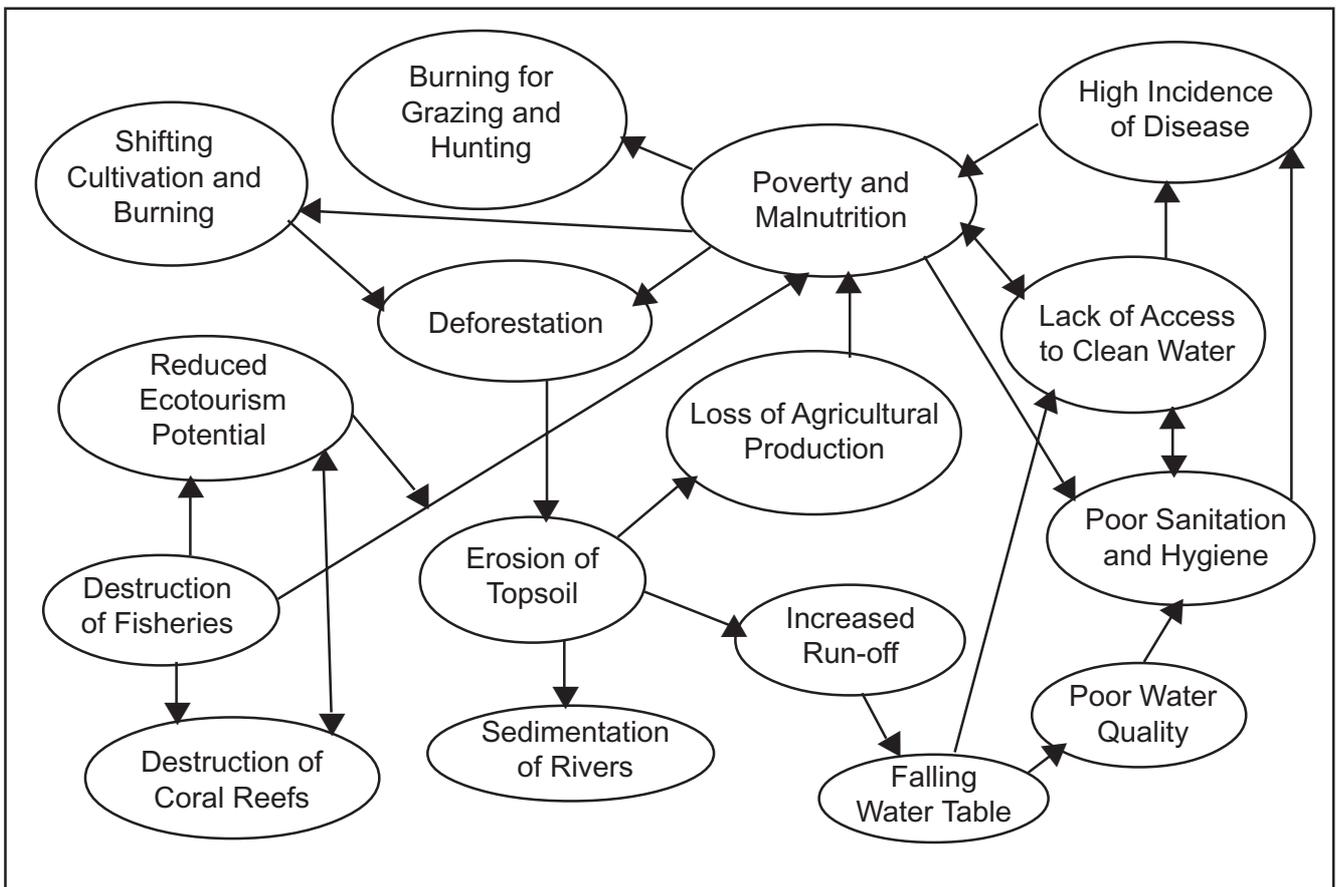
The rights of indigenous people and customary law should be recognised. Respect for traditional culture and valuing local products are also important. Traditional materials have many advantages over imported materials, and modern technologies can be used to complement traditional designs. Recognising traditional law can assist with preventing problems such as deforestation and pollution. Traditional people have valuable knowledge and experience due to their very close links with the land, air and water. Recovery of traditional knowledge and law should have high priority.



Links Between Sustainable Development Issues in East Timor



Unsustainability: Links Between Development Issues in East Timor





Introduction

Jose Lobato, Timor Aid

**Ladies and Gentlemen,
Before we begin this conference, I would like to thank you very much for your presence at this opening ceremony. As we all know, this conference begins today the 25th of January, and will finish on the 31st of January.**

The definition of sustainable development is development that can fulfil the needs of the present generation without compromising the ability of future generations to meet their own needs. I remember the expression that says that “the earth does not belong to us - we borrow it from our children”. It is something that we borrow and must give back in good condition.

Our natural riches must be handed on to our children and grandchildren. If we log rosewood, sandalwood and teak, we can make a lot of money. But if we sell all of our trees now, our children will not have any forest left – they will only have desert.

Today East Timor’s income is not high enough to run the country. In 2004 or 2005, when we start to receive revenue from the gas and oil in the Timor Gap, national income will be higher than the amount required for the national budget. We cannot however depend only on oil, as one day the oil reserves will be depleted. We need to find other ways to generate income. We have the potential to develop sustainable industries, for example coffee, fishing, tourism, agriculture and forestry.

This conference has brought together East Timorese and international experts to discuss and reflect upon development issues in East Timor. The challenge over the coming days is to find solutions for East Timor in line with the principles of sustainable development. The results from this conference can be used by the transitional government and by the future government to plan for a sustainable future.

Address to Conference on Sustainable Development

Mario Carrascalao

Vice-President of CNRTICN, on behalf of CNRTICN President Xanana Gusmao

On behalf of the Government and People of East Timor, I welcome you all to our country. I thank you for offering us your time and your talents, skills and knowledge. I believe that your deliberations over the next few days will provide us with valuable insights for how we as a young and shattered country can move forward into a sustainable future.

Sustainable development is a new concept for us in East Timor. It is novel because sustainable development has not been practiced in East Timor for hundreds of years.

We do not understand sustainable development because over centuries of colonial rule East Timor has been subjected to the non-sustainable exploitation of its natural resources. For example, our sandalwood was exploited firstly by the Chinese and then the Portuguese, so that by 1948 there was absolutely none left. Then for the last twenty-five years Indonesia has taken what it could from our environment. Yet not only have others exploited our natural resources with no thought to our future: our own

people slash and burn our depleted environment. Our one resource to be overlooked by the colonists is our mineral resources and these we must consider carefully.

As we launch this conference on sustainable development we have to look at the current situation. Our country has been devastated. The few remaining resources are in poor condition. In other words we have very little to sustain us.

We have some big challenges to face and overcome before we can even think seriously about truly sustainable development in East Timor.

We look to this conference to come up with some innovative solutions for repairing the damage done to our ecology and for restoring our natural resources. We need to hear how the East Timorese people can be intimately involved in all aspects of resource restoration.

We, the leadership, believe that it is important to preserve what little we have. You are the experts – show us how to preserve our forests and lands. Show us how to conserve our ecology while



at the same time providing sustainable livelihoods for the people who will be asked to be guardians of those resources.

How do we heal our reefs that have been ruined by senseless activity and dynamite? How do we engage the coastal communities in the regeneration of these marine resources?

Discuss also how we can base our development on the generation of sustainable energy – a cornerstone of sustainability.

Importantly, identify for us how we can build the financial support necessary – for it is clear that there can be no truly sustainable development without sustainable financing and funding for such programs.

I challenge you to explore and find with us ways in which our own culture can develop solutions for improved sustainability.

All discussion in East Timor needs to also include ways in which we can deal with our colonial legacy, which continues to affect and deprive us of our basic rights. These remnants of colonialism injure, maim and kill just as surely as any remnants of war. While hundreds of millions of dollars are spent removing the physical, rusting remnants of war – people like us continue to suffer from the continuing damage caused by the psychological remnants of colonialism, by the divisions left behind in our societies.

Your participants might be able to explore ways in which sustainable development can incorporate efforts to rid ourselves of our colonial legacy. How do we reconcile with each other as we reconcile with Mother Earth?

Our people do not have the luxury of discussing the pros and cons of sustainable development – they have enough to think of just trying to feed their families day to day. As one Pacific Islander said to a visiting scientist, “One man’s biodiversity is another man’s lunch.”

We cannot rely too much on external solutions. Because of all that has happened, Timor is unique and has exceptional needs. Our need is urgent because if programs for future sustainability are not put in place now, what little we have left is put at risk.

We think our situation may be closer to those of our Pacific Island neighbours. They have also suffered through colonialism and have managed to develop their small resources and create functioning democracies.

I hope this conference will show us how we can look at our Pacific neighbours and enlist their experience and support in our efforts.

You can also share with us the lessons that can be learnt from our South East Asian brothers and

sisters. We have much goodwill from Asia and we trust you will explore how to harness these positive expressions from our region.

Indeed, we will be guided by the ‘Program of Action’, which was agreed at the *United Nations Global Conference on the Sustainable Development of Small Developing Island States*, in Barbados in 1994. The Program was agreed to by over 160 countries and incorporates the major areas for international co-operation.

Perhaps our UN colleagues here in Dili can advise on how to use the Barbados Plan as a base for our future collaboration.

We challenge this conference to recognise these facts and help us design and implement a Sustainable Development Plan for our children and our children’s children. After all – “We don’t inherit this land from our parents – we borrow it from our children!”

We also need to explore how to mobilize the youth of East Timor to restore their birthright and finds ways to instil in our young people the desire to develop sustainably. Let’s discuss options for the kind of training our young people need.

This conference needs to investigate forms of science and technology proven to work. We cannot afford to be a laboratory – we need tried and tested technologies. We look for solutions that are appropriate for our culture that are able to fulfil our needs.

I would like to take this opportunity to thank all those that made this event possible by their financial support, principally, USAID, HIVOS, CAFOD, UNDP, TROCAIRE, the Embassy of Finland, Timor Aid, UNICEF, NZAid, AUSAid and the Canada Fund. UNDP along with the Norwegian Government have bought a team of consultants, three Norwegians and three East Timorese, to assess environmental needs here. We hope that UNDP, and all these agencies, will continue to work in close partnerships with the Government and other NGOs in the area of sustainable development in East Timor.

I would like to thank all of you who have travelled far from your homes to be here with us in East Timor to help us find ways to build our nation sustainably.

I hope that the outcomes of this conference will mean that the people of East Timor will also be able to thank you for working in partnership with us, to map out an exciting future of hope – a future of hope built on the restoration of our ecology and the sustainable and humane development of our resources and our people.

Good Luck and Best Wishes in these important deliberations.



Opening Statement

Mr Akira Takahashi

Special Advisor on Development to the Special Representative of the Secretary General, on behalf of Sergio Vieira de Mello, the Special Representative of the Secretary General

Thank you for the invitation to participate in today's opening of the Conference on Sustainable Development. I am very pleased to be here to speak on behalf of Mr. Sergio Vieira de Mello, the Special Representative of the Secretary General.

Mr. Vieira de Mello has been called to New York with Dr. Jose Ramos Horta to brief the Security Council on developments regarding the implementation of the transition to East Timor's independence. He sends his sincere apologies for not being able to attend today, but has asked me to say a few words on his behalf and on behalf of the East Timor Transitional Administration.

My comments relate to the importance of raising the profile of sustainable development in East Timor by linking the key issues of education and the environment. To make sustainable development a reality in East Timor, it must be encouraged within communities so that it remains a broadly supported point of view. Development thinking should not be solely the domain of academics, technical experts and policy makers. It must be open and accessible to the wider populace. The communities in East Timor's towns and rural districts must be the ones to drive sustainable development.

It is not sufficient, or acceptable to design policies and programs in isolation of the people of East Timor. No amount of work done on sustainable development behind closed doors or in conferences will substitute for developing and encouraging the support and commitment of the people of East Timor. Conferences like the present one are useful because they have a broad reach and their results can be widely disseminated.

We can help encourage community involvement by finding appropriate ways to get messages to the people and to equip them with the knowledge and the opportunities to make their views heard by policy makers and program developers. From the perspective of the Transitional Administration, this means we need

to concentrate efforts on awareness raising through public information and education.

We would like to see the issue of sustainable development disseminated widely through two key mediums. The first is through mass media and the second through the education system. Mr. Vieira de Mello has already spoken with Father Filomeno Jacob, the Cabinet Member for Social Affairs about finding a way to incorporate issues of the environment and sustainable development into East Timor's education curriculum. At the same time, we will use media such as Radio UNTAET to spread the broad message about the importance of sustainable development in East Timor.

By disseminating information widely to the public of East Timor and by teaching the children, we will be laying the foundations of a strong and sustainable support base for sustainable development in East Timor. It will be very important that the results of this conference receive the same treatment and are as widely disseminated as possible. The fundamental message I have been asked to convey today is that we must get the thinking on sustainable development from the level of expert discussion to the level of broad public acceptance.

This is the major challenge for all of us and, in the course of your deliberations over the coming days, I would like to ask you all to keep at the back of your minds, the importance of translating your discussions into public messages that can be disseminated throughout East Timor.

On behalf of the Special Representative of the Secretary General, I wish you well for the conference. We in the Transitional Administration look forward to receiving the final recommendations and outcomes. We view this conference as a useful complement to policy making in the Transitional Administration and as an important event in raising the profile of sustainable development in East Timor.

Introduction to the Conference

Aderito de Jesus
SAHE Institute

**Welcome ladies and gentlemen –
I would like to introduce the Conference on
Sustainable Development.**

Participation

I was first introduced to the conference a year ago and have given assistance to its direction. There have been many meetings over the last year and much discussion. Others that have been directly involved with the organising committee include representatives from Yayasan Hak, Haburas, East Timor Forestry Group, TaliTakum, ETADep, Timor Aid and the ETTA Environment Protection Unit. The conference has been organised through this collective process.

This participatory process assisted in devising ways that this conference can be sustainable - how it can result in long-term positive outcomes.

Thanks go to the many people who have contributed their ideas. There have been open meetings at the East Timor NGO Forum (FONGTIL), meetings with University Lecturers and particularly in the lead up to the conference, a flurry of meetings with the participants.

In particular, I would like to welcome our many international guests who have travelled from many parts of the world to contribute to sustainable development in East Timor. Dozens of other people would also have liked to attend the conference but could not attend for various reasons. They would have come from organizations such as the United Nations Environment Program, the Australian Conservation Foundation, the International Council for Local Environmental Initiatives, UNDP in the Pacific region, the University of the South Pacific and the International Union for Conservation of Nature from the Asian region.

Conference Outcomes

It is proposed that a Task Force on Sustainable Development is established to carry forward the ideas generated from the conference and to continue to use the important networks that have been established with our international guests.

Because the organisation of the conference has its roots in NGOs - in civil society - then the idea of an Environmental Resource Centre is another possibility.

Anticipated outcomes also include a framework for an educational exchange program and identification of priority pilot environmental projects.

In terms of education for sustainability and the environment there are obvious links that can be made with universities. The universities represented at this conference include; the University of the South Pacific, the Northern Territory University, the Australian National University, the University of Queensland and Murdoch University.

The obvious outcomes of the conference will be the results of the discussions that will be held over the next 6 days. From these discussions recommendations will be made and a conference proceedings book will be published. We hope that the outcomes of discussions can be used for identification of priority pilot environmental projects and can be used in assisting policy development.

To help these outcomes become a reality we have scheduled structured workshops each afternoon. The mornings are dedicated to plenary sessions. I look forward to the many presentations that will be made by both East Timorese and international experts. The importance of participation is emphasised by the comprehensive range of workshops. We hope that you will receive much from your time here.

We would like to invite you all to attend the final day of the conference. On the final day the workshop outcomes will be endorsed, and recommendations will be made. In the afternoon of the final day there will be a discussion about the establishment of a Task Force on Sustainable Development. Questions will be asked about the make up of the Task Force, about how will it function and what is its relationships will be to civil society, NGOs, the transitional administration and the future Government of East Timor.

The number of people that have registered, have come to the opening and have shown an interest in the conference is encouraging. It shows how much interest there is in sustainable development in East Timor. An interest of course from East Timorese but also importantly from Internationals. Sustainability is about strategies for the future and their implementation. We hope that our guests will also continue to assist us in the development of our future strategies. We can learn much from both successes and failures in other countries.

Many countries around the world have attempted to tackle the complexities of sustainable development. But in fact no country has achieved a truly sustainable system. Yet no country can create sustainability by itself. There are the many unsustainable issues that cross state borders. Those

of poverty and climate change and human rights abuses that create movements of people. Sustainability is not geographically specific. A few people consuming a lot can cause as much damage as a lot of people consuming a little and the effects of consumption cross into the borders of the developing and developed worlds.

We hope that a Task Force on Sustainable Development can establish a strong partnership with our guests. A partnership that can cross these state

borders and help build a viable sustainable future for East Timor.

Sustainable Development after all is about building a global alliance without which we will not overcome the inequity of poverty, the continuing climatic destruction, or even begin to imagine a peaceful world.

I wish this conference every success in the makings of this global alliance.

East Timor: Perceptions of Culture and Environment

- Summary of Full Paper¹ -

Dionisio Babo Soares

*Research Scholar, Anthropology, Research School of Pacific and Asian Studies,
the Australian National University, Canberra, Australia.*

Introduction

This paper discusses the Timorese perception of culture and environment

Discussions about “culture and environment” in East Timor are coloured by two strands of thought prevalent among the East Timorese. One is the view of those considered to be educated. The second is the view of traditional rural people, of the average people, of the holder of laws (*makaer fukun, lia nain*)². Let me anticipate my argument by saying that the view of the second group seems to dominate the discourse of Timorese perception about culture and environment.

I would like to begin by highlighting briefly the views of the two different groups on the above topic. Then, I will take a close look at what I term the “general perception” of Timorese society on culture and environment. The third part of this paper draws attention to the stages of environmental development in East Timor and finally, to the perception of the Timorese on environmental problems.

Culture: Local Perceptions

There are two different perceptions of the meaning of culture among the East Timorese.

1. One is the view held by what I would like to call literate Timorese. For this group, culture is a process (Ahmadi 1985; Daryanto, 1972 Geertz, 1973) that involves evolution, undertaking phases of change and experiencing innovations along with time, people’s modes of thinking and technological advancement.
2. The second view however is that culture is a package of rules of social order set by the ancestors; it is a tradition, inherited from the early ancestors. Here, culture is seen as neither a process

nor an evolving system. On the contrary, it is a given set of rules or norms that determine social behaviour. These rules/norms should be honoured, respected and upheld by every member of the society. Adherents of this view, who are referred to as “traditionalists”, believe that failure to honour culture and observe tradition will result in social instability; thus events like natural disasters, failure in harvesting, famine, spread of contagious disease and deaths will proceed naturally. Culture, so to speak, is a tradition inherited from the “source”, from the “origin” and from the “great ancestor”.

Male oriented thinking is dominant in this society. The lineage of an ethnic group is drawn from the male line and it is the male children that have access to family heritage. The male is given the task of protecting the women and the environment. A lineage can always be traced back to *Aman Boot, Katus Boot* [*mambae: tata-mai*] or the “eldest father” or the “great ancestor” of the clan who is **HE**. Such a view is considered to be the 'core' part of 'culture' and is followed by the society at large.

I do not want to draw you into an anthropological debate over the concept of culture, yet the two schools of thought above reflect the divergence of ideas between the two groups within Timorese society. The elders, the village people, the mountain people, the conservative and holders of traditional laws (*makaer fukun*) would refer cynically to the literate, the educated, the young generation, the city people as people who abide by no law or people who subscribe to no social order.

The question is: Which is the view shared most by the East Timorese?

To provide an appropriate answer to this question

¹ Summarised by organising committee

² *Makaer Fukun* (panel of authorities) and *lia-nain* (holder of words) refer to people with power or traditional authorities

we need more in depth anthropological research. However, the fact that 70% of the Timorese population live in rural areas and that most of today's city dwellers were initially rural inhabitants, suggest that the traditional perception of culture carries more weight.

Environment: Local Perception

With this in mind, let us move on to the term environment. There is no classificatory word in Tetum (the lingua franca in East Timor) that can be translated literally as environment.

1. To the literate East Timorese, environment is translated as *ambiente* (Portuguese) and is understood in Bahasa Indonesian as *lingkungan* (lit., living area, surroundings), the latter being interpreted as the "ecosystem". Any discussion of environment among this group has more to do with its meaning in an academic sense and not with a cosmological hypothesis.
2. However, to the other group, environment has been interpreted as the way people view their world. "Environment" is defined as an area that encompasses cosmos (heaven) and territorial jurisdiction (secular world). It includes "birth place, place of origin, place to live" (*moris fatin, hela fatin*) and the realm of "our" ancestors.

Whatever is associated with the environment has its place in, or is regulated by, the "words of the ancestors". These are the rules and guidance inherited through tradition that, in the perception of most East Timorese, constitutes social order and governs social life.

What do these perceptions have to do with sustainable development in our context?

Reconciling perceptions of culture and environment

a. Dualistic Character

As discussed, Timorese perceptions of culture and environment are influenced by the way they perceive the world - the environment - in which they live.

Opposite but parallel metaphors are characteristics of Timorese social thinking (see Therik, 1995; Fox, 1989). Couplet forms such as: "good/bad", "right/left", "male/female", "day/night" are general traits in the way the Timorese portray the world. Thus, for "good" to exist, there should be "bad". Likewise, "day" cannot exist without "night" and, by the same token, "men" cannot exist without "women" and vice versa. Thus environment, in Timorese thinking, might not exist without preconceived cultural devices inherited

from the ancestors and vice versa. All these metaphors provide a picture of the description of the environment and the place which the Timorese inhabit (Traube, 1977; McWilliam, 1989; Therik, 1995).

b. The Position of Environment: Traditional Perception

The "Environment" is depicted as standing between "good" and "bad" behaviours. The Environment can be preserved and allowed to nurture life when the forces of "good will" stand strong and are able to combat the "bad" (evil behaviours).

"Good" refers to resources, proper treatment and care of land and everything in it. It can also mean wealth - mines, land, plants or sandalwood - good harvests and the source of wellbeing. "Bad" is associated with objectionable land use, human error, waste of resources, land erosion and everything associated with, or resulting from lands' misuse such as poor harvests, floods, landslides and the degradation of the environment in general.

As mentioned before, a reference to the environment encompasses a territory consisting of plants, trees and animals that exist within the vicinity of the clan. Plants, trees, springs and land are the very means of a group's survival. People used to say, "my environment (lit., *hau nia quintal, hau nia tos*) is also my garden and its surroundings", as it is understood in Indonesian, *lingkungan*. A conversation with a traditional authority reveals the following words (pers comm. with a "liurai" in the village of Matahoi, Watolari, 2000):

"My environment has been here for generations, since the days of my great ancestors. They lived here; they were buried here. It was they who looked after our gardens, our trees, our flowers, our animals, our water and our life. I should not give this land to other people. Should I give up this land to other people, my ancestors will punish me."

Within each ethnic group there is a predetermined set of regulations on the use of natural resources. Although there is clear imbalance - some would call it discrimination - in wealth distribution between men and women, social tasks are structured on a balanced approach. Everyone has an equal duty to preserve the ecosystem. This "environment" is looked after collectively by the lineage because the collectiveness of the group is vital to the very survival of the environment. The negative impact of burning practices and ensuing conflicts that may arise due to fire accidents on each other's property serve as an example of why the Timorese see collective arrangements as indispensable³.

3 On the issue of land tenure system, there were two claims of ownership in East Timor. One is individual ownership and the other is collective right. The disappearance of collective rights came about as early as 1912 when individual claims of ownership came to the fore.



Thus, this allows the authority of the clan to manage and control the use of resources and, therefore, maintain conservation of the land, thanks to the clear division of land under the kinship system. Furthermore, the traditional political structure provides a mechanism that allows the environment to be preserved. In this structure, for example, a *liurai* (lit., king, traditional ruler) is assisted by several *datos*. One of these is given the power to look after the environment. As one Luirai put it (pers comm. 2000), "He is endowed with the power to look after the land, the trees, the plants, the spring, the drainage and the divisions of land".

c. Development of Environmental Problems

Different ethnic groups have different practices to combat environmental problems. This is due to differences in land use, climate and vegetation.

A lack of modern means of land clearing, planting and harvesting is a characteristic of the subsistence agriculture system in East Timor. However, poor management of this approach leads to poor production in the agriculture system and destruction of land and the vegetation in general.

Things became worse with the developments that took place throughout the colonial period. Subsistence ways of caring for the environment have, in the last 20 years, failed to cope with the mass destruction of the environment. On the one hand, the chemical effects of napalm bombings and forced resettlement practices by the Indonesian military (Aditjondro a & b, 1994), which have contributed greatly to the changes in the environment and social structure, are so huge in scale that they superseded the traditional capacity to handle them. On the other hand, slash and burn practices prevail as a result of the shortage of labour and efforts, or the need, to "save time and energy".

In general, there have been three different stages of environmental development in East Timor.

The *first* stage is the pre-European colonisation period. An account of environment development during this period is scarcely available and few reports can be obtained about it except some praising tales about Timor's beautiful forests, the scenic greenery of the island, the abundant sandalwood it produced and the mosaic diversity of its people's culture. Early Chinese and Portuguese accounts of East Timor highlight these first impressions on outsiders on arrival in this island (see Castro, 1943). The reality is that during that period each ethnic group controlled its own environment that lay within its social, economic and political jurisdiction.

The *second* phase is the European - most notably the Portuguese - colonisation period. This period saw the exploitation of native crops for commercial purposes by the Portuguese. The extinction of a number of native plants and crops and the introduction of foreign crops into the territory took

place during this period. The destruction and degradation of the environment resulted from this "replacement", and the period after it has not been documented.

Studies have yet to count the massive loss of life, destruction of vegetation and the suffering that the East Timorese had to endure as a result of Japanese and Australian governments' engagement in the territory during World War II.

The *third* stage of environmental development is the period of Indonesian occupation. This period saw a mass destruction of the environment throughout the territory, both as a result of deliberate action by the Indonesian government and the army, and the lack of understanding on the part of the East Timorese about how to preserve their environment. As to the former, economic development of the new order government compelled people to give up their lands. Similarly, forced resettlement of the population by the military detached people from their sacred lands. As to the latter, slash and burn practices prevailed; these traditional land clearing practices to "save time and energy" are still practiced widely today and in turn contribute heavily to land erosion and low quality harvest products (see Aditjondro a & Aditjondro b, 1994).

These three historical periods of development are only small parts of the problem that continues, and will continue, to challenge environmentalists and everyone working on environment issues in this new country.

The Importance of the Environment: Local Perceptions

In a subsistence society such as East Timor, has preserving the environment been a common practice? In general there are three basic perceptions for this argument. Firstly through everyday experience. For example, practices that lead to the destruction of land have traditionally been perceived as "harming" (*halo a'at*) or destroying the land. For example, the Mambai forbid slash and burn practices as these are perceived as destroying (*halo a'at*) the land and, perhaps, causing erosion and landslide. The Mambai favours manual land clearing instead. Nevertheless, one can still find in the foothills of Dili, as in other parts of East Timor today, that burning before planting maize is common.

Second is the belief that land is mother "earth's body" and "we", as her children, should look after our mother's body. Thus, the practice of cutting down trees is seen as violating the rules set forward in culture and tradition. "Mother earth" is believed to have sacrificed her body - the land - to produce food for her children (see Traube, 1977). Timorese exegeses highlight that the ancestors normally let "mother earth" rest after every harvest season. The



nomadic character of the East Timorese may provide hints for this rationale. For example, in the past, seasonal movement of people was common, especially after the harvesting period. The Timorese believe that any part of land that has just yielded crops is exhausted and should be left “resting” for a while, and the next planting season should take place in another field. This aims to preserve the land (*husik rai bokur*, lit., fattening the soil) so that it can produce more in the following year. The Timorese would say, “we must love our land and take care of it, otherwise it will not give us food”. Soil, rocks, trees and springs constitute mother earth’s skin and should be protected and sustained. “Mother earth” will show her anger, should part of her body be injured. She would normally manifest her anger in the form of “poor production of crops, earthquakes, poor fishing conditions and so on”.

Third, to “protect” the environment the Timorese would use a “forbidden sign” (*horok, lulik*) to prevent the land from misuse. This sign takes the form of leaves (*ai tahan maran*), a bunch of betel nuts tied together (*bua ho malus*) or a half coconut fruit (*nu’u sorin baluk*), which are normally displayed at the entrance of one’s property. Apart from showing claims of ownership, the display aims to prevent trespassing and stealing. *Horok* or *lulik* is also used as a means to prevent destruction or to avoid “bad” behaviour (vandalism) that may damage the environment - mother earth’s body.

Indeed, in his account of the life of Bishop Ximenes Belo, Arnold Kohen described how intimately the Timorese are tied to their land (1999:47) and how faithful they are to their religion. Land is a place where they live, where the people’s lineage is formed, where their gardens are established, where the graves of their ancestors are located and, most importantly, where their origins

can be found. Timorese political leaders, in their personal biographies, acknowledge the central position of “land” (translated here as place of birth, *moris fatin*) in their -and the Timorese- life (see Ramos-Horta, 1987; Bishop Belo in Kohen, 1999; Gusmão, 2000). Xanana Gusmão is known for one point he made years ago, “my bush is my university”. My own grandfather used to say “my *moris fatin*” is my school.

Conclusion

To sum up, when talking about culture and environment in East Timor, one should observe how these are perceived at the local level. One may take the most sophisticated theory to define the meaning of culture and apply the most sophisticated techniques to solve environmental problems. Yet, such sophisticated approaches may exert a new type of “degradation” on the environment of the locals, a degradation that devalues existing values and local culture.

In Timorese perception, environment is confined not only to the land or the area where one lives. It is a place where life is all about. It is a place where the life of the clan is invested, the place where the history of the existing lineage can be found, the site of ancestors’ graveyards, the place of a *clan’s* sacred altar and other cosmologically related affairs.

The Timorese interpretation of culture and environment parallels their view of the world. The two are therefore important components of life and they “support” each other in their actions. One determines the course of action of the other and *vice versa*. Finally, culture, in Timorese perception, is also the means to take care of the “environment”, and the latter may not exist should culture not be respected. Both are interrelated and are the very means for human survival.

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Sustainable Development in East Timor

Emilia Pires

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Thank you for this opportunity to speak on the very important issue of sustainable development in East Timor. I would like to start with some brief observations on how we can ensure this conference can make a practical and lasting impact on development planning and implementation in East Timor. Then I will comment on sustainable development and the role of the National Planning and Development Agency.

This conference is a very timely opportunity to draw together a range of development thinkers from within East Timor and outside. We are at a critical moment in which we must focus on working better together to ensure that directions being set now can be built upon in the future. It is vital that today's development work is not unpicked and re-invented, but rather that we can consolidate progress post-independence.

We must strengthen our working relations to overcome shared problems. This means talking with one another constructively and analytically, and sharing information on what has been done and what is planned. As partners in development, the government administration, civil society and international experts in East Timor should all listen and talk to each other. We must not make judgements based on assumptions, perceptions and hearsay.

In a country the size of East Timor, we have to ensure that we are all working together to address some of the considerable development hurdles before us. No one group has the ability to achieve optimal development results in isolation from the others. To do so would be counterproductive to our own endeavours, but more importantly, to the people of East Timor. To achieve a stronger partnership, we need to improve communication and coordination between us all. I hope this will be a significant outcome of this conference – an opportunity to talk to one another, share experiences and discuss future directions.

Another key focus should be to ensure that we develop practical and relevant recommendations on sustainable development for East Timor. Simply illuminating problems is no longer enough. We do not have the luxury of time to engage in highly academic or abstract discourse on development theory. In exercises such as this, linking our deliberations to achieving development results and solving problems on the ground should be uppermost. It is incumbent on us all to find the appropriate balance of developing sound planning principles and ensuring effective implementation.

I would like to ask the delegates of this conference to help the administration and the development process in East Timor, as development partners, to find practical, relevant and lasting solutions to our development problems. And there are plenty of problems for us to focus on – be they rapid urbanisation, deforestation, refugee returns, civic education, infrastructure rehabilitation or building an effective public administration. The key is to prioritize those that are critical to East Timor's sustainable development, and to target our efforts and limited financial resources on only the most important. We must be realistic about what can be done and then achieve these as efficiently as possible.

Sustainable Development

I will now turn briefly to the issue of sustainable development in the context of work being done by ETTA, and more specifically, the National Planning and Development Agency.

In a period of enormous pressure to get things done rapidly, and to make the most of the valuable resources currently available, it can be easy to lose sight of the bigger picture. However, we must make sustainability the fundamental principle governing development planning in East Timor.

When considering development programs, be they through the national budget, donor programs or NGO support, one critical question must be asked: Can the government, the people and the natural environment of East Timor sustain this over the medium to long term? Some would say this is an obvious question to ask. But it can be hard to answer in an environment where so much has been destroyed, where the needs are tremendous and where donors are providing generous, immediate, support for reconstruction and development.

In such an environment, short term results can cause long term, large scale problems in the future. For example, heavy re-investment to restore large-scale infrastructure like roads or power generators to a level that cannot be sustained will cripple future budgets for East Timor's independent government. Another example might be building or re-building an excessive number of schools when future governments will be unable to fund wages for teachers and equipment for classrooms. It would be a waste of money in the short-term and could lock the government into unsustainable recurrent costs in the longer term. To guard against this, closely examining the sustainability of all development interventions must be our highest priority.

In designing development programs, all government departments, donors, NGOs and others should always make a careful assessment of the future burdens any development spending could place on the government, the people and the natural environment. If any one of these cannot sustain the activity in the longer term, be it through degradation of natural resources, lack of recurrent government spending or low community support then I would question carefully whether it should be pursued.

While there have been efforts to ensure that programs in East Timor do reflect these fundamental sustainable development principles, there have also been certain inadequacies in the way that development is being planned and delivered, which impact on sustainability. Key among these are :

- Inadequate community consultation, which leads to a lack of East Timorese participation in some instances;
- The absence of good baseline data to support policy formulation and programme design and development;
- Too few East Timorese in key positions in government as well as in programme management and project implementation positions; and
- A lack of well-defined, integrated, national development priorities.

To improve the sustainability of development activities, these key problem points must be addressed as a matter of priority.

Role of the NPDA

Within the East Timor Transitional Administration, the National Planning and Development Agency has been established to oversee a program of activities to support good development planning and practice in East Timor. I would like to highlight a few examples of how the NPDA's workplan will seek to address some of the inadequacies I just mentioned and improve planning for sustainable development outcomes. These include the improvement of:

1. Community consultation and local planning;
2. Data collection and analysis;
3. East Timorese involvement; and
4. National Development Prioritisation.

1. Community Consultation

For development activities to be sustainable, it is fundamental that they reflect the views and concerns of the East Timorese people about the kind of future we want for our communities and our country. This is critical to bottom-up development planning, which will help ensure sustainability. Local communities must be actively involved in analyzing development needs and

determining the allocation of resources. This will help ensure greater, sustained, East Timorese participation.

Strengthening local capacity for development planning is a high priority for us. To support this approach we will need to reach agreement on a model for local governance. This will have to include a corresponding shift in responsibility from central decision making to the local level, as well as the devolution of appropriate financial support.

At the same time, by putting greater effort into public information campaigns about sustainable development planning and prioritization we will help to convey messages about sustainability to local communities. It is my hope that this will also promote a more realistic understanding about a future independent government's ability to deliver services in East Timor, at least in the medium term. This will contribute to the broader understanding of what is sustainable and what is not.

2. Data collection and analysis

Another prerequisite to improved sustainable development in East Timor is high quality data collection to support effective policy and programme design and implementation. Currently, major capital investment programmes are being designed and appraised without the benefit of sufficient consistent and reliable data. This information is critical at this moment in time when major decisions are being made or will shortly need to be made that will affect the future directions of the country.

I am thinking here of decisions such as re-setting wage structures which will have lasting impacts on the market economy, or on establishing constitutional structures, or on models for economic development. These decisions should not be made without giving East Timorese access to background data and some comparative analysis on what options are available. Equipped with this information, we can then make our own assessments on which options are more fundamentally suited to East Timor, and the character and nature of East Timorese society - for example whether East Timorese prefer a model of a protectionist economy, liberal free market or perhaps other models based on cooperative principles. Once decisions are taken then we ourselves need to work out how to transition our society to achieve the desired end result. This approach, based on empowering East Timorese, will help ensure sustainability.

Consequently, a priority for the NPDA has been to develop a work program to build the capacity of East Timorese staff to manage data collection for the whole of government. The NPDA will also be the government counterpart for the joint World Bank, ADB and UNDP funded Poverty



Assessment study which will conduct a household income survey early this year. This information will be critical to improving the overall quality of development planning and implementation in East Timor.

3. East Timorese Involvement

It is important also that East Timorese are more fully involved in the process of development. To ensure sustainability, East Timorese must own the process of development and not be reliant on others. While it is true that, in a number of areas, we can learn a great deal from our international friends and colleagues. Wherever possible this specialized assistance should be provided by international experts in the role of 'advisors', but with Timorese in the driver's seat. This is in all areas of development work, be it in government or in development program design and management in civil society. This needs to happen immediately so that East Timorese are in decision-making positions now, supported by advisors who can advise on potential courses of action and help mitigate the impact of mistakes that we all make in learning something new. This is at the heart of capacity building.

In the government sector, we are seeking to achieve greater East Timorese involvement through more rapid recruitment of East Timorese, particularly at senior management levels. In the NPDA, I intend to have East Timorese in all the senior management positions of the agency as soon as possible. In some units in my agency, such as the Environment Protection Unit, East Timorese staff are already playing a lead role in formulating policy and planning on important environmental issues that sit at the heart of sustainable development. You will be hearing from a staff member of the Environment Protection Unit in the course of this conference regarding their work on pollution and waste.

To further support East Timorese involvement in government, the NPDA is seeking to recruit East Timorese as government consultants who will work on an inventory of all programs and projects currently planned and being undertaken in East Timor. A key aspect of their work will be to present this data in a way that is easy to understand for all East Timorese, so that the broader populace has an understanding of the support that is coming to them. This will ensure they are better informed about, and more actively involved in, directing the use of this assistance.

Outside of government, we would like to see a similar increase in East Timorese involvement in the design and delivery of development programs. I would like to see East Timorese NGOs and community groups more fully integrated into development work. This approach may require more up front work from

our international NGOs and civil society counterparts, but so be it. It is critical that, as major international assistance draws down, the sustainability of all the work being done can be assumed through a trained and skilled Timorese development workforce. This is at the centre of ensuring that development in East Timor today is sustainable tomorrow.

4. Prioritisation

Finally, let me touch on work that is being done to ensure that national development priorities are at the heart of government programs.

The three major forms of public spending on development are through the national budget of East Timor, the Trust Fund for East Timor and bilateral development assistance from donor governments. All of which are primarily funded through donor assistance.

The national budget process for the coming financial year will soon commence. This second annual budget for East Timor will, for 2001-02, incorporate all three major sources of funding in the one process. This will better align development priorities for East Timor and should ensure greater cohesion between all public financing programs. The Cabinet will assess budget proposals in the lead up to the new financial year and a budget appropriation regulation will be submitted to the National Council for approval prior to a major donors conference to be held in Canberra in June. Through this process, ETDA will set out its key development priorities for the administration and for East Timor.

At the same time, the Cabinet has developed a list of unfunded development priorities, which will be used by the NPDA to seek donor financing for high priority activities that cannot be funded out of existing programs. This list will help ensure that, as much as possible, donor assistance is in full accordance with the development priorities of East Timor. The role of the NPDA will be to ensure that ETDA proposals to donors address all relevant environmental, financial and social sustainability factors.

This is just a brief overview of the activities in which the NPDA and ETDA will be working to improve the delivery of sustainable development outcomes in East Timor. I trust that my staff and I will have the opportunity to work with many of you to achieve this.

I would like to conclude by wishing you well in your discussions and deliberations over the coming days. I believe this conference has the potential to take the discourse on sustainable development in East Timor to a broader public arena. We should strive to ensure that the results of the conference are accessible to all the people of East Timor and that we use this chance to reinvigorate our efforts to ensure that all development practitioners can work together to develop a sustainable future for East Timor.



Sustainable Development – an Introduction for East Timor

Dr. Arthur J. Hanson

International Institute for Sustainable Development (IISD)

Sustainable development (SD) is essential for the prosperity and quality of life in East Timor. It will address not only today's needs but also those of future generations. The starting point is social justice and reconstruction, with an emphasis on primary environmental care for rural and urban communities, and on resource and environmental management strategies. Good governance will take sustainable development as a central objective, influencing policies and laws, transparency, accountability and participation. Business and communities are key actors since governments alone cannot fully design and implement SD successfully. Local to global SD strategies are needed, given the complex nature of international environmental, trade and other agreements. Innovative funding possibilities exist, combining international sources, user fees and economic instruments. Sustainable development can start with modest objectives that will lead to measurable improvements in the quality of life for people in East Timor.

The Way Forward

Sustainable development is not a luxury – not something that can be put off until better times in the future. Nor should sustainable development be a divisive approach, more costly to implement, or in conflict with key needs such as poverty reduction and reconstruction. It is an objective for the world's richest nations and the poorest. Sustainable development is central to the future well-being of East Timor, just as it is to other nations and regions of the world, because it links social, economic and environmental benefits. Sustainable development is as much a process as a set of defined outcomes. The World Commission on the Environment and Development (WCED) in 1987 noted that "the deepening and widening environmental crisis presents a threat to national security – and even survival – that may be greater than well-armed, ill disposed neighbors and unfriendly alliances." And that economic, development and environmental crises have become interlocked – all one.

The WCED produced the definition still most widely accepted: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." There are seven global imperatives for sustainable development that remain as relevant today as when they were introduced almost 15 years ago: reviving growth; changing the quality of growth; meeting essential needs for jobs, food, energy, water, and sanitation; ensuring a sustainable level of population; conserving and enhancing the resource base; reorienting technology and managing risk; and merging environment and economics in decision making.

The world's nations, at the 1992 Rio Earth Summit recognised the global nature of sustainable development. World leaders agreed

to a set of principles; a complex document, Agenda 21, that specified pathways for a more sustainable future on our planet; and framework conventions on climate change, biological diversity and other globally significant problems such as desertification, small islands and high seas fisheries. Since then governments, international organisations, businesses and civil society have embraced the ideals of sustainable development. And, to a very significant extent, momentum for change is building through a combination of technological, institutional and societal innovation.

We say that sustainable development is not "business as usual". For a place subjected to as much displacement and inequity as East Timor, that is hardly the starting point for an introduction to sustainable development. Here the starting point is social justice, with objectives of *meeting basic needs of life, building sustainable livelihoods, and constructing an economy that strengthens rather than further weakens the ecological base of East Timor's land, water and sea.* It is an ideal time to be considering how sustainable development can be introduced. It is an integrated and innovation-oriented way of seeking solutions that have a "triple bottom line", with outcomes that are good for people, environment and the economy.

The SD Triangle

Think of a triangle, with three points identified as *ecological health, social and cultural strength, and economic prosperity.* This is the sustainable development (SD) triangle. The lines of the triangle represent relationships among the three points—often very complex relationships. These relationships need to be recognised and understood, especially in decision-making for national policies, in business and communities.

The relationships are more far-reaching than we might initially imagine. For example, well-intentioned subsidies such as for agriculture may lead to harmful environmental effects such as pollution or destruction of biological diversity. Financial institutions that fail to establish reasonable environmental guidelines for their loans will contribute to both long-term ecological and economic failure, with social consequences. If planning does not recognize equity issues, the poorest people inevitably suffer the greatest environmental injustices through their lack of access to resources and the placement of polluting infrastructure. These are lessons learned throughout Asia.

For East Timor the three points on the triangle might translate into action as follows:

Ecological health: primary environmental care at the village and urban level; environment and security strategies including disaster prevention and response; sustainable natural resource management; ecological restoration and biodiversity conservation; pollution control and prevention.

Social and cultural strength: health and education for both women and men; maintenance of culture and traditional knowledge; sustainable communities; defined resource rights and access; social and environmental justice.

Economic prosperity: sustainable small and medium enterprises; sustainable rural and urban livelihoods; sustainable macropolicies (fiscal, trade, structural adjustments and loans, banking and investment, currency); microcredit; science and technology strategies.

Satisfactory outcomes will contribute to the four capitals associated with sustainability: *natural, human, social, and built*. What is important is to avoid trade-offs where, for example, we lose natural capital in order to construct ports or roads; or where people's health suffer as a consequence of industrial pollution.

Governance and SD

At this stage, the role of good governance cannot be overstated as a prerequisite for sustainable development. SD requires vision, an enabling framework of laws, incentives, and viable institutions, catalytic action, a capacity to measure progress, and a relationship with people that is honest, transparent, and inclusive in relation to decision-making. By its nature sustainable development is integrative, cutting across all units of government. Implementation also depends upon the participation of both business and communities.

The obvious question is who can take charge? The chief executive of the country is also the

person who should lead, and be accountable for a national sustainable development strategy. And all members of the cabinet should define their roles and responsibilities with respect to sustainable development. In Canada there is a Commissioner for Environment and Sustainable Development who periodically reviews the commitment and self-assessment of each government department's SD performance, and reports the result to Parliament. Accountability, and capacity to measure progress in achieving objectives are essential since *SD is an investment* to improve conditions now and for the future.

Sustainable development also extends to the local community level and to the actions of corporations and individuals. Here governance can focus on dialogue and participation, but also on the actual sharing of responsibility, for example through community-based natural resource management and environmental health projects. Individual businesses can set out their own sustainability strategies, and seek opportunities such as ecotourism that can assist conservation as well as produce local economic and social benefits. An important issue is the extent to which voluntary approaches can be used instead of command and control regulatory measures.

Local to Global Action

Sustainability will falter if implementation fails at the local and national level. Yet all nations participate in decisions about the international framework for environmental protection and sustainable development of the planet. Some would argue that there has been more talk than real action during the past decade. Yet people in far corners of China, Vietnam and even in the smallest countries such as the Maldives are exposed to the ramifications of globalization, the impacts of trade, climate change and biodiversity concerns. Multilateral environmental agreements, the various trade agreements and international accords for economic and social progress and security all need to be considered in relation to sustainable development. Some of these agreements may conflict with others and it is not always clear which will prevail. East Timor cannot afford to ignore this complex international web, and indeed, should benefit from some provisions. Ideally there should be a high level of consistency between international, national and local action, although this is certainly not the case at present in any country. National sustainable development strategies can help to bridge the gap.

Financing SD

Successful implementation of sustainable development is a consequence of smart thinking



as much as funding. It is common sense to be energy efficient and not to overexploit natural resources. For East Timor, faced with a massive reconstruction need and stimulation of economic opportunities, funding for all priorities will be a challenge.

The nature and content of the national budget is therefore an important statement of commitment to sustainable development. How limited funds are allocated in support of basic needs, environmental protection and other sustainability priorities is important. But it is also essential for a country to examine its system of incentives including both taxes and subsidies, for example, on natural resource products, pricing of water, and import credits, for example, on pollution control equipment. Self-supporting environmental management initiatives can be established, for example, through user fees. The approach of using economic instruments to shape behavior while paying for management needs is attractive, and can reduce expensive command and control enforcement.

The advent of specific sustainable development funds within the international community is quite recent but, hopefully, a source for funding elements of East Timor's needs. Such funds may come from bilateral development agencies of OECD countries, concessional loans and grants from organizations such as the World Bank, Asian Development Bank, and the Global Environmental Facility (GEF) and UNDP, private sector and foundation sources. Generally such funds can assist in the implementation of sustainable development through grassroots projects and technical infrastructure, but their value is often greatest in institutional development, policy formulation and capacity

building.

A big part of sustainable development is the sharing of responsibility for action since no government is capable of fully implementing sustainable development on its own. There are many ways of building funding for this cooperative effort. Microcredit, work for food, tax holidays and value-added natural resource products are examples. Financial self-reliance at the community and enterprise level will provide the best guarantee for sustainable livelihoods and sustainable enterprises.

The government of East Timor can influence sustainable development through its own purchasing practices. "Green guidelines" for purchasing will stimulate suppliers to take sustainability concerns seriously in their own practices.

Tomorrow and Five Years from Now

Sustainable development normally is implemented in a stepwise fashion. Start with what can be accomplished within limited means and capacity. Seek early successes and communicate well with those who will be affected. Back the development process with knowledge about what has worked elsewhere. These are some of the key points to think about in the short term. Over the next five years hopefully East Timor will have made a successful transition from crisis towards a pathway of sustainability. The benchmarks will include improvements in many aspects of the quality of life. And there will be a sense of pride and self-reliance within the country that will drive further achievements. The pathway for sustainability and rate of progress is different for each country. But we can share a collective vision and hope for a better future.

Multi-Stakeholder Integrated Sustainability Planning Towards Holistic Development

Ella S. Antonio

Area Manager for Asia Pacific of Earth Council

Agenda 21 the global program of action for sustainable development was the major output of the 1992 UN Conference on Environment and Development (UNCED). It calls for countries to formulate their respective National Strategies for Sustainable Development (NSSDs). In 1997, the UN General Assembly Special Session gave a timeframe for this. It stated that "by the year 2002, the formulation and elaboration of NSSDs, which reflect the contributions and responsibilities of all interested parties should be completed in all

countries, with assistance provided, as appropriate, through international cooperation". To date, countries with NSSDs in the Asia Pacific region number less than ten. About 25 countries in the region have National Environment Action Plans (NEAPs), a limited proxy of NSSDs.

MISP (Multi-stakeholder Integrated Sustainability Planning)

The sustainability of development depends as much on the participatory process by which

planning is carried out, as on development plans themselves. As such, the Earth Council¹ is developing and promoting a sustainable development process called “Multi-stakeholder Integrated Sustainability Planning (MISP)”. The Earth Council has prepared draft guidelines (see www.ecouncil.ac.cr) that attempt to describe a planning approach that meets Agenda 21’s requirements of integration and multi-stakeholder participation. Since countries vary widely, the draft guidelines provide enough flexibility for innovation and creativity.

By its very nature, sustainable development is a partnership between all members of society and their environment. The nature and process of sustainable development is too complex, interconnected, holistic and of eminent public interest to be left to any one main actor in society. Though governments have the delegated responsibility and are expected to take the lead, what is important is that the respective stakeholders from the different sectors of society (cultural, economic, social, ecological, spiritual, and political) actively participate in reaching basic consensus on the road to follow towards sustainability.

MISP is a process that is multi-stakeholder, multi-disciplinary, multi-level, coordinative, dynamic and iterative. The MISP process tries to reconcile the divergent interests of stakeholders in an interactive and cooperative manner.

MISP proposes a living and on-going process to pursue the common public interest by bringing together representatives designated by their respective constituencies in search of the common public interest and good. This should be carried out in a manner that empowers each group and level of society and integrates and builds upon the dynamics of particular interests into an integrated whole.

The MISP Process

The MISP process follows standard planning procedures. Its basic difference is in the manner by which it is undertaken. The steps are undertaken keeping in mind specific questions that must be responded to effectively. Following are the MISP steps:

1. Formulate the Vision:
What do we want to be?
2. Analyse the current situation:
Where are we now?
3. Set goals, objective and target:
Where do we want to go and when?

4. Craft development strategies:
How can we get there?
5. Formulate Investment Program, implementation mechanism, action agenda (including Legislative Agenda): *How do we ensure that we get there?*
6. Establish monitoring and evaluation mechanism: *How do we know we are getting there?*

MISP and NCSD

A multi-stakeholder body has been proven to be the best mechanism to spearhead and monitor a sustainability planning process and ensure its implementation and up-dating. Such a mechanism, generically called a National Council for Sustainable Development (NCSD), exists in various forms in about 70 countries worldwide. Their positive experiences and best practices have encouraged other countries to establish theirs. Usually, “NCSDs” are created when a country decides to formulate an NSSD in the most effective way.

Political Will and Other Requisites

Political will is the single most important and critical element in preparing and implementing an NSSD. Without this, MISP may not even take off or when it does, little may be accomplished. Political will must emanate from two levels: the official leadership and the people.

In addition, the MISP process would require most, if not all, of the following elements in order to become effective and produce the desired NSSD:

- Representation of all major stakeholders in the planning team. Stakeholders, however, must seek and pursue the common public good and interest despite their specific interests and constituencies;
- Planners must be responsible, committed and open-minded team players, i.e. they need to be willing to listen and consider the views and concerns of others;
- A dynamic leader, able to deal with and balance the concerns of stakeholders is critical;
- A secretariat able to provide effective and efficient support;
- A clear implementation plan for the planning work itself;
- The progress of planning must be closely monitored.

¹ Earth Council is an international NGO that promotes sustainability by helping countries develop their respective sustainability plans, programs, mechanisms and processes.





The Natural Resources of East Timor A physical, geographical and ecological review

Mario N. Nunes

Manger ETA Forestry Unit, President East Timor Forestry Group (ETFOG)

Geographical Condition

Location, Boundaries, and Range of Area

The island of East Timor extends from longitude 123°25' to 127°19'E, and from latitude 8°17' to 10°22'S. The total area of the land of East Timor is approximately 14,609 km², which includes the mainland area of 13,679 km², the region of Oecussi, 78 km², Atauro Island, 141 km², and Jaco Island, 11 km². East Timor's boundaries are as follows:

- In the north, the boundary of Wetar Strait with Ombai Strait.
- In the east, the boundary with the Maluku Strait.
- In the south, the boundary with the Timor Sea.
- In the west, the boundary with Nusa Tenggara Timor, the eastern region of Indonesia.

Topography

A mountain range runs from the east to the west of East Timor. The mountainous terrain results in many watersheds and streams, making transportation very difficult. The land is made up of limestone, coral, thick clayey soil, sand and a small amount of volcanic origin. In East Timor there are seven mountains with heights over 2000m as seen in the following table. The highest mountain with a height of 2,963 metres is the Tatamailau peak of the Ramelau Range in the Ainaro district.

Name of Mountain	District	Height Above Sea Level
1.Tatamailau	Ainaro	2,963 metres
2.Sabiria	Aileu	2,495 metres
3.Usululi	Baucau	2,620 metres
4.Harupai	Ermera	2,293 metres
5.Cablake	Manufahi	2,495 metres
6.Laklo	Manatuto	2,050 metres
7.Matebian	Baucau	2,373 metres

As a broad outline, the watersheds of East Timor can be divided into two areas; northern and southern. Of the many rivers in East Timor, the following rivers flow all year round; the Laklo river in the district of Manatuto, the Seical river in Baucau district, the Bulobo, Marobo, Malibaka

and Nunura rivers in Bobonaro district, Gleno river in Ermera district, Karau Ulun in Manufahi district, the rivers of Dilor, Uca, Uwetoko, Bebui and Irabere in Viqueque district, the Loes river in Liquica, and the Tono river in Oecussi.

Overall the climate in East Timor is classified as tropical. The minimum temperature range is 18-21°C while the maximum temperature range is 26-32°C. In the north (as far east as Baucau) the rainy season begins in November and is usually accompanied by a westerly monsoon; the months of May and October are months of change from dry to wet season. In the east and the south the situation is different - the rainy season is at its height in April. The dry season occurs during May, and the rainy season returns at the beginning of June until August. When it is winter in Australia (August to October), sometimes the temperature in East Timor can be as low as 18°C. This is also true of the opposite scenario. When it is summer in Australia, the temperature is high on the coast of East Timor, even in the rainy season.

Ecological Condition

The ecology of East Timor is influenced by its topography. It is dominated by an ocean and coastal ecosystem, an inland habitat, and biodiverse mountain regions.

Ocean and Coastal Ecosystem

East Timor's seas are the habitat of many species of fish, including fish that have high economic value such as tuna, skipjack, mackerel, and snapper. These species can be exploited sustainably to support the national economy. On the coasts, especially in the north and east, there are exposed coral reefs that are a source of food and shelter for many kinds of sea organisms, and are also a valuable natural tourist attraction.

There are mangroves on the northern coast of East Timor that are still intact, and provide habitat for several species of sea birds, bats, and fish. The egg laying areas of several species of turtle are found on several beaches such as Tutuala beach and on Jaco Island.



Inland Habitat

In the inland regions of East Timor, there are differences in the plant life between the north, the south and east, and the mountain regions. The northern areas are dominated by plant species such as *Eucalyptus alba*, *Tamarindus indicus*, and several species of tree that grow in dry land areas.

In the east and south the plant species are more varied, dominated by Canarium, Red Wood (*Pterocarpus indicus*), Charia (*Taona sureni*) and other types of commercial wood such as teak (*Tectona grandis*). There are also several species of orchid, and the undergrowth is full of variation.

The mountain areas and uplands are dominated by *Eucalyptus urophylla* and several species of ferns. There are several species that are found in all regions, including Sandalwood (*Santalum album*) and Casuarina (*Casuarina equisetifolia*).

The fauna of East Timor consists of several species of mammals such as; Deer (*Cervus timorensis*), cuscus, wild pigs, and monkeys;

reptiles such as crocodiles, snakes and lizards; birds such as lorikeets, cockatoos, land and sea eagles and pigeons.

Actual Condition

Because East Timor has been ruled by other people for so long, the management of natural resources in this country has not received serious attention. The result is that today there is widespread deforestation and there are several species of bird and animals that are threatened with extinction. This situation requires the attention of all the people of East Timor. Examples of threatened species are sandalwood, teak, and several species of bird including cockatoos, lorikeets and eagles.

Thus if we wish to develop a better future for East Timor, the biophysical environment and natural resources of East Timor must be given attention so as to avoid further destruction and to repair environmental damage.

Conservation of Biodiversity: Critical Issues in Small Developing States

Dr. Graham Baines
Environment Pacific

To be effective and lasting, biodiversity conservation needs to be an integral part of economic and social development. It is not easy to put this ideal into practice. East Timor's needs might best be served by a focused set of immediate actions, with a more comprehensive and detailed strategy for biodiversity conservation being developed from information and experience emerging from this first phase. Based on similarities with circumstances in Pacific island countries, critical issues are identified as a basis for discussion.

Biodiversity is made up of the many plants and animals which provide the basis for life. Some of these plants and animals are used directly by people for things such as food, medicine, clothing or housing. Others provide indirect benefits for people; for example, tiny soil animals and bacteria process soil to make it fertile; forest trees slow the fall of rain and guide water into the soil and to streams. **Conservation** is part of development. The word "conserve" means to use resources carefully.

East Timorese biodiversity has been severely degraded. It is not realistic to dream of restoring all that has been lost, though some rehabilitation may be possible. Conservation is not just about "protected areas". To be effective, biodiversity conservation should be an integral part of a programme of sustainable development, backed by a participatory process of planning. It is suggested that East Timor consider an initial

emphasis on 1) support interventions for rural communities' use and management of land and sea biodiversity, while 2) implementing an environmentally responsible framework for guiding and regulating urban and industrial development.

First actions identified should be those which will:

- address people's basic needs in the use of biodiversity,
- begin to slow the current trend in degradation of biodiversity and natural resources,
- establish a trend towards a sustainable use of land and sea resources,
- introduce measures to protect water sources and supplies,
- ensure that urban and industrial development is planned and executed according to "best practice" methods which avoid damage to land and sea resources;

- identify species and areas of special biodiversity importance;
- initiate surveys of the status of resources and biodiversity, and of people's rights and relationships to them, while
- building on the strengths of traditional resource management practice and knowledge.

The needs of "nature conservation" are not specifically identified in the above listing. Some of these needs will emerge from this first phase and be addressed through simple protection measures. Nature conservation would become an integral item of the medium and long-term strategies which should subsequently be developed.

Biodiversity in Pacific islands countries cannot be considered in isolation from cultural diversity. "The very basis of Pacific island cultures has long been the interrelationship between the individual, the clan or tribal group, and the environment."

East Timor must deal with a number of problems which are common to other small island states. From the experience of Pacific island countries, these critical issues are apparent:

1. *Meeting immediate subsistence and economic development needs without further degrading environment and biodiversity.*
2. *Restoring the potential of degraded land and sea*

areas to produce natural resources, maintain vital ecological processes and sustain genetic diversity.

3. *Maintaining the quality of land and sea environments so that they will continue, always, to provide the resources needed to ensure a satisfactory quality of life for all citizens.*
4. *Understanding and appreciating the value of genetic, species and ecosystem biodiversity.*
5. *Finding effective means of accommodating customary land and sea tenure systems in a framework for community and national development, and of using traditional knowledge and practice in a fresh approach to development which builds on the best of tradition, strengthened by modern interventions.*

The indications are that East Timor has a chance to establish and follow a path of sustainable development – though the difficulties will be considerable. Experience elsewhere suggests that threats to success will come from pressures for quick and unsustainable economic returns from natural resources, and from ignorance of the value and role of biodiversity in development. Through the sixties and seventies various Pacific island countries reached this decisive point in their history. Their success in management of their biodiversity has been less than they had hoped. There are, however, some successful examples of biodiversity conservation from which East Timor could benefit.

Development of Forestry Conservation

Jorge Rui Martins

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Background

Forests in developing countries are generally used as a source of firewood and of land for farming. Approximately 1.5 billion people in developing countries use wood for cooking and heating. Up to one billion cubic metres of firewood is used every year, providing about 80% of people's energy needs. The practice of slash and burn agriculture provides rural livelihoods, however, once cleared, land can be used for only one or two years. Such agricultural practices impact negatively on the environment, resulting in erosion, landslides, and floods, and cause a lack of water during the dry season.

The area of grazing land in the world is three trillion hectares, accounting for 23% of the land surface of the Earth. Desertification as a result of livestock grazing has occurred all around the

world, for example in the Sahel in Africa, the Sudan in North Africa, the Mediterranean, the Middle East, the Himalayas and in the Andes. Such activities result in devastating erosion, land degradation, and forest destruction. Some governments are acting to reduce the demand on forests. For example, in the republic of Korea, the government subsidises the use of alternative energy sources, providing 15% of household energy spending. In the Andes and the Sahel, government expenditure on alternative energy meets 25% of household needs.

East Timor's tropical forests ecosystems are unique. East Timor's forests have important functions, for example they are reservoirs of biodiversity, function to buffer water supply, and provide non-timber forest products. Research is

required to investigate the structure and function of forest ecosystems. We do not know what will happen to our forests in the future - we can only guess from what we have already experienced. Environmental degradation locally and globally is causing acidification of soil and waterways, thinning of the ozone layer, global warming, rising sea levels, species extinction, and concomitant degradation of natural ecosystem processes such as nutrient cycling.

The aim of forest resource exploration and exploitation is to raise people's socio-economic condition. However, the distribution of income is not yet equitable. Very few of the general population are able to enjoy prosperity, including those who live in the mountain and forest areas. People stay poor, because wood that is logged illegally by the community is smuggled out by irresponsible business people. This is one example of the social inequity between wealthy business people, and the local population.

Geography

The geographical location of East Timor is between latitude 8°17'-10°22'S and longitude 123°25'-127°19'E. The general source of livelihood of the majority of the population is farming and livestock breeding. The total land area of East Timor is 14,609km² and the forest area (based on Indonesian Land Use Planning), is 699,000ha. Ninety one percent of this forest area is subject to major human impacts, including burning and shifting agriculture. The area of productive forest is only 45,211ha, while the majority of land classified as forest is actually grassland, savanna, and regrowth forest.

For the wood industry to produce a minimum of 6000m³ of basic commodities, a standing volume of 21,500m³ is required. The volume of wood cut, however, needs to take into account harvesting levels appropriate to ensure sustainable yields. At the moment wood for East Timor's reconstruction needs is being imported.

The Problems with Forestry in East Timor

Problems

Current forestry problems in East Timor are as follows:

1. Government structure is unclear, and so there is no clear forestry policy.
2. The government budget has limited funds for implementation of forestry activities.
3. Forestry organisational structure is still limited, with inadequate recruitment of national staff due to administrative, financial, and other

constraints. A work force, however, has an important role in the implementation of forestry activities in all regions of the country.

4. Lack of strong governmental mechanisms for the implementation of existing government regulations.
5. Lack of accurate data on forestry potential for all forestry regions in East Timor.
6. High unemployment, which is increasing the pressure for people to exploit forest resources. In conjunction with this, due to the rise in fuel and oil prices, people are relying on burning wood to meet domestic energy needs.
7. The rate of illegal logging is high all over East Timor.
8. There are no surveys or forest inventories regarding forest potential to use to compile national forestry data.
9. There is no national regulatory system for issues of land tenure.
10. During this Transition Period, forestry has not been seen as one of the priorities in the allocation of development funds from the World Bank.

Opportunities and Strategies

Opportunities

The Division of Agricultural Affairs together with the Forestry Unit currently have responsibility for the development of forestry activities. The Forestry Unit has worked hard to develop a national forestry system that is integrated and efficient. Programs are being prepared that provide opportunities for the resolution of national forestry problems. Positive indications for forestry include:

1. The issuing of Transitional Government Regulation no. 2000/17, in regards to the prohibition of logging and the export of forest products.
2. The issuing of Transitional Government Regulation no. 2000/19, in regards to protection/conservation of natural areas.
3. Regulations regarding a conservation approach to forest management demonstrate national concern about the management and use of forest products.
4. There are local and international NGOs that have forestry programs.
5. There is financial support from the international community for the development of national forests.
6. There are professional groups in the forestry area that are ready to devote themselves to forest development.



Strategies

The exploitation of the forest resources must take into account ecological processes. Forest resources are part of functioning forest ecosystems.

Technical, economic, social, political and institutional issues must be taken into account in the exploitation and management of forests. The following discussion addresses these issues.

• **Technical:**

The exploitation of forest resources must be in line with the function and condition of the forests and must be in accordance with the results of full forest inventories. It is hoped that the silvicultural system being formulated will be fully tested in the field, and not based only on theory. Additionally, it is hoped that development of forest plantations will only occur in those forest areas that are not currently productive, such as in cleared areas and regrowth areas and also where tree planting is critical to reverse land degradation.

• **Economic:**

The exploitation and management of forest resources must be regulated so that it can be accounted for economically. It is hoped that economic exploitation will not only include

timber production, but also conservation management and non-timber forest products.

• **Social:**

The exploitation and management of forest resources must provide adequate social advantages, especially to communities living in/near forested areas. Socio-economic benefits can be gained through provision of employment and by the affirmation of the rights of communities to exploit certain forest resources. Forests can clearly play a role in raising the quality of life of those that live in and around forests. This in turn will raise the level of community participation in the management of forest resources.

• **Political:**

National forest policies must in essence aim to raise communities' quality of life. Good policies will result in balanced use of and access to resources, will end conflict, and will ensure that communities participate in decisions about resource use.

• **Institutional:**

There needs to be increased participation in forest management by government, cooperatives, and the private sector, as well as increased coordination of organisations actively involved in managing forest resources.



Sustainable Forest Management in a Changing World

- Summary of Full Paper -

Dr. Don Gilmour

International Union for Conservation of Nature, Lao, RECOFTC

Factors driving recent policy changes

Focus on sustainable development

The term “sustainable development” is often interpreted in different ways depending on the perceptions of different interest groups. As used in this paper, it refers to the definition given in *Caring for the Earth*:

“... improving the quality of human life while living within the carrying capacity of supporting ecosystems.”.

There is a clear intention in this definition of explicitly bringing together both the human well being and biophysical components which are often implicit in discussions of sustainable development.

Forest management authorities have responded to the global focus on sustainable development by embracing a significant shift in forest policy from one which emphasised sustainable harvesting of dominant products, primarily wood fibre, to one which emphasises stewardship of a complex, valuable natural resource system yielding a broad mix of goods and services.

Globalisation

The globalisation of the world economy (in particular the opening up of national economies to international market forces) has created changed economic circumstances that have necessitated changes to the institutional arrangements for resource management. Structural adjustment policies of the International Monetary Fund and the World Bank have been major influences driving these changes in developing countries and countries with economies in transition. However, the same imperative is affecting other countries through the related drive for economic rationalisation.

Most countries are going through policy reform processes and there are some common themes in the direction that these are taking. Governments are down-sizing (reducing the size of their bureaucracies) and decentralising forest management decision-making to lower levels and in many cases devolving responsibility (and sometimes authority) to various elements of civil society such as NGOs and local communities.

Rights of indigenous and local communities

There is a growing recognition world-wide of

the rights of indigenous peoples and local communities in regard to their involvement in decision-making about managing natural resources over which they exercise some claim. This is particularly the case in situations where indigenous (and other) communities are living in and around forests and using forest resources for subsistence purposes or for generating cash income. Past government actions that nationalised forests frequently disenfranchised these people and put them “outside” the law. The rights of indigenous (and other) local communities are being increasingly recognised in national policy debates.

Practical responses to policy changes to achieve sustainable forest management

One result of the changing policy focus outlined above is that management is becoming more sophisticated (and challenging) as managers try to balance multiple objectives and work with multiple stakeholders.

Collaborative management

Governments around the world have adopted various forms of participatory natural resource management during the past few decades in an attempt to engage with a wide range of stakeholders. In some countries the approaches have become wide spread and have been incorporated into national policy and translated into large-scale field programmes.

The phrase “collaborative management” is becoming increasingly popular as a generic description of a range of approaches involving some form of collaboration between government and other stakeholders, particularly those groups whose livelihoods are intimately linked with the resource. Fisher (1995) has suggested that collaborative approaches to resource management involve recognition of:

- the need to integrate conservation and development;
- the legitimacy of the rights of local people to secure their economic future; and
- the value of seeking the active involvement of local people in environmental care and management.

Collaborative management of forests refers to¹:

- the **arrangements** for management which are negotiated by multiple stakeholders and based on a set of rights and privileges (tenurial

arrangements²) that are recognised by the government and widely accepted by resource users; and,

- the process for sharing power among stakeholders to make decisions and exercise control over resource use.

So, collaborative management is something that is done by multiple stakeholders. This feature alone represents a major difference to more conventional forms of management where one party retains sole responsibility for decision-making and other stakeholders remain at the periphery.

Commonly, the approach to management is tied to tenure, which defines the bundle and allocation of rights and privileges to use the resource (Fisher, 1995). In general terms, various

tenure systems can be grouped into the four categories of state, private, communal, and open-access property. Of course, the recognition of tenure depends on who you are. The state may not recognise some private or communal rights that are accepted by local resource users, and conversely, local users may not respect some claims of ownership made by the state through its various government bodies. At various times, new claims emerge or old ones are questioned. When disputes about rights and privileges exist, management is problematic because there will be a lack of confidence in whether decisions made by either party will be agreed to or followed.

Collaborative management implies that government and resource users agree about tenure, thus providing a foundation of confidence.

¹ This definition excludes situations where local users are managing natural resources which are claimed under state-ownership, without having prior government approval. Such systems, referred to as “indigenous or traditional” management systems, are often effective and involve a lot of collaboration among users. However, the definition used here seeks to include only those collaborative arrangements that are legitimised and strengthened by government recognition. It should be stressed that identifying indigenous management systems and building upon their strengths are critical steps towards establishing management systems that do have government approval.

² The tenurial arrangements are not necessarily formal ones – they can be ad hoc or tacit.

Reference

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Biodiversity Conservation And The Forests of East Timor

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Background

According to the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, June 1992, there are currently two major environmental issues: global warming and biodiversity. In East Timor reconstruction requires the use of natural resources but unsustainable use and exploitation will mean the irretrievable loss of biodiversity at the genetic, species and ecosystem levels. To prevent this, natural resource use must be ecologically, economically and socially sustainable.

During the period of Indonesian occupation and administration the government established a biodiversity conservation policy for Indonesia that included East Timor, however, it was never implemented. Currently in East Timor the use of natural resources is vital for the livelihood of the population.

Issues

1. Under previous administrations there was no institutional system or agency involved with or responsible for biodiversity management.

2. Excessive exploitation of natural resources in the past.
3. There is as yet no assessment, identification or classification of natural resources within East Timor.
4. Funding and other resources are required to facilitate assessment etc.
5. The community is reliant on the use of natural resources and must be involved, consulted and educated on sustainable resource use.

Actions:

1. Undertake inventory of natural resources including assessment, identification and classification.
2. Development of regulations and law enforcement.
3. Government to develop policies regarding conservation, development and sustainable use of natural resources.
4. Community involvement, participation and education – bottom-up approach.
5. Maintains relationships with international and local agencies (NGOs, Governments, non-government agencies, civil society etc).

Asian Perspective on Community Involvement in Sustainable Forest Management

Dr. Somsak Sukwong, RECOFTC

Community involvement in sustainable forest management has been increasingly advocated and implemented in Asia in recent years, both because it is seen to be a practical way to manage forests and because it is important for human rights and community development. This paper explores experiences from different approaches to community-based forest management in several countries in the region. Several key lessons are identified: (1) the importance of a genuine community role in decision-making, (2) the importance of secure rights of access to forests by communities and (3) the need for institutional/bureaucratic change as a precondition in order to create space for community management.

Over the last twenty or so years there have been many experiments in community involvement in sustainable forest management in the Asian Region. There are two main reasons why community management has been advocated:

- ***It is a practical way to manage forests.*** Community participation has been clearly shown to be an effective means of achieving effective management. If we see forest management as regulated access to and use of forests, then the people who live near and use forests on a day to day basis are obviously key actors. For many years forest departments have attempted to regulate use and access by coercion, with little success. Collective action by communities (often in collaboration with other stakeholders) is the alternative.
- ***It is important for human rights and community development.*** People living in and around forests often rely heavily on forest products. Providing access to these resources is important from an equity point of view and can also provide opportunities for community level economic development.

There is no single “Asian perspective” on community involvement in sustainable forest management. Many different approaches have been taken in various countries, depending on different social, economic, political and environmental conditions:

- In Nepal, there is a large scale national program in which local community level forest user groups receive permanent use rights subject to a management plan negotiated with and approved by the Forest Department. This is a genuine national program. So far over 700,000ha of forest have been handed over to about 9,700 Forest User Groups involving over a million households. This is in a country with a population of 20 million. Results have been very good both in terms of forest condition and rural development outcomes.
- ❖ In various states of India there is a Joint

Forest Management Program through which community groups receive access to forest products and some economic benefits in return for protection and reforestation activities.

- ❖ In Thailand many community-based forest protection and management schemes exist. These are generally locally-initiated and occur in the absence of any supportive legislation, but with the support of civil society and sympathetic forestry officials.

- ❖ In Vietnam and some other socialist and post-socialist economies, forest land is being transferred to local people for management purposes. This generally occurs on an individual rather than a community basis and there are some difficulties involved in this.

While these cases are indeed diverse, and while no single model for community forest management has emerged, or is likely to emerge, there are some general lessons to be gained from the diverse experiences.

- ❖ The term participation is used in many ways, ranging from manipulation and enforcement, through mere use of local people as a workforce and “convincing them” of the value of forests, to allowing them a genuine role in decision-making (defined as setting management objectives). Successful community forest management requires a real degree of community input into decision-making.

- ❖ The likelihood of effective community management is increased when communities have secure access to forest products. This does not have to be in the form of absolute “ownership”, but can be in the form of guaranteed use rights or negotiated agreements between government and communities.

- ❖ Implementation of large scale community management requires a paradigm shift by forestry officials, away from techno-centric and policy roles towards facilitating roles. Consequently institutional (bureaucratic) change is a major, if not the major, challenge in implementing community-based management.

Fresh Water Resources and Intergrated Watershed Management

Alvaro Abrantes, Water and Sanitation Unit, ETTA

Water is the most important factor for the life of human beings and for all other living things. Therefore water should be conserved and kept sustainable in terms of existence, quantity and quality.

The urban centers and rural areas of East Timor are suffering equally from both water shortages and problems with water quality. The main reasons for shortages are destruction of infrastructure during post referendum violence in 1999, and poorly laid and maintained water systems. During the crisis in 1999 everything was damaged, including intakes, reservoirs and water treatment facilities¹.

There are also many problems related to watershed management in East Timor. These problems include deforestation and forest fires in catchment areas that result in increased sedimentation in river basins. Such problems can be solved by conventional models of a practical and simple nature. The problems of increasing erosion and sedimentation generally arise from rainfall and basin characteristics, and are especially influenced by the change of land use by human intervention.

The main problem of fresh water resources

Water represents the most important component for the life of human beings and other creatures. Water also plays a key role in successful national development and therefore should be responded to with awareness by both the government and the community. We must be aware that water tends to become more and more scarce.

If water resources such as springs, ground water, rivers, and reservoirs (including treatment plants) are not conserved and kept sustainable, the result will be decreased development outcomes.

There are the problems of biological, chemical and physical pollution of water. For example water quality is extremely low in the Viqueque and Manatuto districts. In a study undertaken in the Viqueque district, only 22% of water samples met district physical, chemical and bacteriological standards, and in the Manatuto district only 25% of water samples met the same standards². Such water quality problems place a heavy burden on the community, on the operation and maintenance of water systems and on the water sources themselves.

Therefore fresh water resources should be maintained in a sustainable condition in terms of both quality and quantity.

Watershed management is an integral part of water quality management - it represents one of the human efforts to prevent deterioration of water quality and allow sustainable utilisation of water resources of a standard quality.

At the present time, the quantity and quality of

water resources in East Timor are decreasing. During the dry season, spring and river discharge is decreasing while community activity, e.g. grass fire and tree (forest) felling is increasing. Decreasing water quality also results from pollution from domestic and industrial wastes³.

In coastal areas of East Timor communities can also have the additional problem of salt- water intrusion into wells.

The main problems with water quantity and quality management

- Imbalance between the demand for water and the capacity of water supply.
- Decrease in water quality and quantity during the dry season which is caused by disposal of domestic and industrial waste.
- The increase in soil erosion and sedimentation caused by poor condition of vegetation in the catchment area, which eventually results in sedimentation and lower storage capacity of reservoirs.

The decrease in water quality and quantity, and increased sedimentation of reservoirs will result in negative impacts on the National Water and Sanitation Strategy, because it will increase operational costs for the water treatment plants.

Objectives

Water quality has become one of the dominant problems in the management of water resources, so that the principal objective of water managers is to protect the quality of water resources.

Protection of water quality must be based on a master plan, which must among other things,

¹ East Timor Strategic Framework for Rehabilitation, Development and Management of the Water & Sanitation (ADB).

² Table 4c. Number and percentage of Clean Water Samples Meeting the physical, chemical and bacteriological requirements by district, East Timor Province PKL.

³ Water Resources Management for Sustainable Use. Regional Conference Denpasar-Bali, Indonesia 19 – 24 July 1998.

include water quality standards and continuous monitoring.

The monitoring and reporting must be reliable, because it will be used for the preparation of measures to improve water quality.

If water quality is improved, limited water quantity can be utilised to fulfill various needs and water saving efforts can also be accomplished.

The scope of the Master Plan should include the following basic requirements:

1. Consistent with government policies, programs, laws, and regulations;
2. All sector programs must include watershed management, water quality and quantity management, flood control management and river environment management;
3. Water demand forecasts by domestic,

agriculture, industry, and river management sectors, and other sectors that have water requirements;

4. Water resources development programs;
5. Comprehensive programs for realising equal access to water for all inhabitants living in the basin;
6. Environment assessment, requirements and methodologies.

Conclusion

Water is vital for life. Water resources should be conserved and kept in a sustainable condition both from a quality and quantity point of view.

One way is to carry out water resources quality and quantity management in accordance with a master plan, which has been set up to control and reverse the degradation of water resources.

East Timor and Climate Change: Security and Sustainable Development

- Summary of full paper¹ -

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Introduction: Sustainable Development in Changing Climatic Conditions

It is a reality of the 21st Century that planning for sustainable development must take into account the changes to the Earth's climate and ecosystems that are the result of non-sustainable emissions of greenhouse gases into the atmosphere. The projections are stark. Carbon dioxide is the most prevalent and problematic of the greenhouse gases. It has now reached a concentration in the earth's atmosphere that is approximately 66% higher than at any time during the existence of humans on the planet. Much smaller increases in CO₂ in the past historical record have resulted in significant disturbances to the planet's climate systems.

The international and scientific consensus is that climate change is a reality, which is already making an impact is supported by observable and predicted trends.

Accordingly, almost every nation has ratified the UN Framework Convention on Climate Change (UNFCCC) and accepted that:

- climate change is a reality and its effects are already noticeable and profound, and
- climate change is a serious threat to food and

water security, and therefore to human health and security, and

- it is therefore a hazard to economic growth and sustainable livelihoods.

Despite this international consensus, the negotiation of the Protocol to the Convention, which will commit industrialised nations to an average 6% reduction on 1990 levels of greenhouse gas (GHG) emissions, broke down in November, 2000. Negotiations will resume in mid 2001, in an attempt to resolve the disputed details of the Kyoto Protocol.

This delay in the negotiations gives East Timor the chance to contribute to the debate on the controversial issues of the Protocol, an opportunity that should be seized. For East Timor not only faces serious problems from climate change, but the nation has much to gain from a strategy that simultaneously promotes sustainable development and assists the island to adapt to the impacts of climate change.

Funding for sustainable development is an integral part of the Convention on Climate Change and its Protocol. One financial provision of the Protocol, the Clean Development Mechanism (CDM), is dedicated to promoting

¹ Summarised by organising committee

sustainable growth and reducing greenhouse emissions in developing nations. A second provision, the 'Adaptation and Mitigation Fund' is for nations that are especially vulnerable to the impact of climate change. East Timor will benefit from both sources of funding.

The Vulnerability of East Timor to Climate Change

Coastal Impacts, Rising Sea Level, Reduction in Fish Habitats:

East Timor shares the vulnerability of all island nations to sea level rise that accompanies the melting of the ice cover of Antarctica and the Arctic Polar ice cap. That melting is underway.

One early effect for East Timor will therefore be a shifting coastline and a partial loss of the tidal ecosystems that are essential for fish breeding habitats, most notably mangroves and seagrasses (Fox, Applegate and Wasson, 2000).

This will be compounded by disintegration of coral ecosystems. Climate change is a major factor in the stress and rapid decline of coral ecosystems throughout the globe.

The coral ecosystems of the Arafura and Timor Seas and the Sunda Shelf are no exception, and since the El Nino episode of 1997/98 have experienced some of the worst bleaching and decline of all tropical coral reefs (Wilkinson et al 2000).

Mangroves, seagrasses and corals are important for another reason, they have the ability to 'sink' or reduce the concentration of carbon in the atmosphere. (Ayukai (ed.) 1998) When stressed or destroyed, however, they emit that carbon back into the atmosphere.

Climate Variability, Crops and Vegetation:

A longer term impact of concern is the effect that climate variations will have on agriculture.

As climate variability is a feature of climate change, the global impact on food security is of such concern that it is a major motivating factor in the international acceptance of the need to reduce emissions and slow the pace of Climate Change.

Where the national or regional climate relies on a monsoon, the risk is greatest. East Timor is one nation affected by monsoonal patterns.

It is feared that in a time span of less than fifty years, the inability of flora and fauna and crops to cope with climate variability will be a major problem, and as a consequence, there will be a significant loss of forests and crops.

Increase in El Nino Frequency:

In common with Southeast Asia and the Pacific, East Timor and its closest neighbours are affected by the droughts that accompany El Nino events. It is now thought that the frequency and severity of El Nino events may be increased by climate change (CSIRO 1999).

Unfortunately for all the nations affected by El Nino events, this may mean that the failure of some tree and crop species to adapt to climate change may occur earlier than predicted. As with the impact on the coastal ecosystems, the predicted changes to the crops, tree species and biodiversity of East Timor is a grim one.

Together, these projections present a bleak outlook for food and water security, health and sustainable livelihoods of the East Timorese population, unless strategies for sustainable development are found which also assist the nation to adapt to increased climate variations.

East Timor's Contribution to Greenhouse Gas Emissions:

East Timor's contribution to global GHG emissions has almost certainly been negligible.

However, this is about to change, as East Timor rightfully takes control of fossil fuel sources in the area of the Timor gap and the Arafura that falls within the nations Exclusive Economic Zone.

Production and export of petroleum and liquid gas will increase East Timor's national GHG emissions. However, it also presents an opportunity to promote sustainable development which also reduces carbon emissions, at least where the export of liquid gas is concerned.

The Kyoto Protocol and its Mechanisms for funding Sustainable Development

The Climate Change Convention has two objectives: one is to reduce GHG emissions into the atmosphere, the other is the promotion of Sustainable Development (Art. 2 UNFCCC, Preamble to the Kyoto Protocol).

It was at the behest of the G77 bloc of developing nations that assistance with sustainable economic growth became embedded in the Convention and its Protocol, as the price for cooperation with GHG emission reduction. The Clean Development Mechanism (Art. 12 of the Kyoto Protocol) is the means by which the UN Framework Convention on Climate Change and its Protocol achieve the dual objectives of reducing GHG emissions and promoting sustainable development.



The Clean Development Mechanism (CDM) in Summary:

The CDM is an investment by a private or public enterprise from an Annex 1 nation, in a project in the host developing nation that provides the service of GHG emission reduction. The host nation, company or community maintains full or part ownership of the project and the profits from it, while the investor receives credits for the GHG reductions.

CDM investment: Advantages for Developing Nations

- As foreign direct investment, CDM funding does not increase national debt, a fact that makes it very acceptable form of investment for developing nations.
- Approval for the CDM project is at the discretion of the host nation, which is expected to be able to direct investment into national priority areas.
- The CDM project must meet the criterion of sustainability and it is expected to provide collateral socio-economic or ecological benefits.

The Adaptation Fund and East Timor:

The Kyoto Protocol envisages a tax on its 'flexibility mechanisms', including the CDM, Emissions Trading and the Joint Implementation Mechanism. The purpose of this tax is to establish the "Adaptation Fund" which will be used to assist developing nations '*particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation*'. East Timor is clearly in the category of being particularly vulnerable to adverse affects.

Sustainable Development Strategies for Climate Change Adaptation

The options for sustainable development briefly outlined here are based on concepts which have been applied in tropical developing island nations facing similar risks and with some similarities in ecosystems. But there will be options unique to the nation, and the CDM encourages each nation to work out its priorities.

Liquid Gas Resources

As discussed above, liquid gas is a source of CO₂ emissions, but it is a form of energy which emits much less than either coal or petroleum. Therefore, replacing either coal or petroleum with liquid gas counts as an emission reduction. Assuming that the Timor gap yields liquid gas as well as petroleum, then East Timor will be benefiting both its own economy and security and that of the globe by promoting the export of the liquid gas.

There is a growing demand for liquid gas in the Asia Pacific region, driven by climate concerns

and by economic efficiency, so this strategy is certain to yield positive results.

Sustainable Energy from Tides

East Timor may wish to pursue non-fossil fuel energy sources, through either CDM investment in a sustainable energy project or by the Adaptation Fund. Tidal energy has long been an attractive option for nations with substantial tidal variations; new technology makes this an even more attractive, low cost and emission free energy option for islands.

Mangrove Reforestation: CDM Investment with outstanding Socio-economic and Ecological Collateral Benefits

Over 50% of the world's mangrove forests have been destroyed, (WRI 2000), and with them a fish breeding habitat, a filter of soil carbon and a protector of other habitats, notably sea grasses and coral reefs [Ayukai (ed.), 1998]. Without the filter of mangroves, sediment from the coasts contribute to fish habitat destruction, to the impoverishment of coastal communities, the poorest and most vulnerable of socio-economic groups. Mangroves are essential to reversing fish habitat loss, and to restoring the coastal fishing industries. Mangroves are now regarded as a 'keystone species' for tropical coastal ecosystems. [Fox, Applegate and Wasson (ed) 2000].

Of special significance to an island nation like East Timor is the ability of mangroves to store coastal sediment. There is now evidence that mangroves may also have a role in slowing and assisting coasts to adapt to sea level rise.

Carbon Sequestration in Mangrove Ecosystems, Seagrasses and Corals

The carbon stock per unit area of the mangrove ecosystem is enormous, as the entire mangrove ecosystem acts as a carbon sink. Permanent mangrove reforestation probably qualifies among the highest yield form of sink sequestration.

Socio-economic Collateral Benefits from Mangrove Regeneration

The ecological benefits discussed above will result in the restoration of the livelihood of coastal fishing communities. This can occur immediately with the employment of villages in the establishment phase of the mangrove reforestation project. It will also contribute to the long term survival of the fishing industry.

Reforestation

The area available for reforestation and sustainable production forestry may be limited



in East Timor but is worth investigating as an option. Reforestation and rehabilitation of degraded forests has the effect of sequestering carbon from the atmosphere.

Rehabilitation of Degraded Forests: Ecological and Economic Benefits

There are differences between the ecological and socio-economic benefits from the rehabilitation of severely degraded forest for selective, low impact logging and the establishment of industrial plantations on afforested areas. In general, the former provides more ecological collateral benefits including:

- Improvement in water quality as a consequence of regrowth. This is one reason why China is directing CDM investment into rehabilitation and reforestation around river catchments.
- Soil stabilisation and improved nutrient quality of soil biomass.
- Qualified restoration of biodiversity. Since ecosystems are dynamic, it is unlikely that the recovery of a forest will result in identical flora composition, but it is likely to support an increase in both flora and fauna biodiversity.

Plantations, Soil Conservation and Full Carbon Accounting

Single species plantations produce less ecological side benefits, but have many socio-economic benefits, in the form of employment and timber products for domestic and global markets.

With single species plantations, loss of soil can reduce the carbon sequestered by the growing trees. As tropical soils are generally low in nutrients, repeated growth cycles followed by heavy impact harvesting have had negative impacts on soil quality, in addition to exacerbating the problem of soil run-off. Where burning has been used to clear land for plantations, soil run-off increases tenfold and the water retention capacity of the soil is reduced (Schweithelm, 1999).

As a consequence of these problems, it is probable that assessing the certified emission reductions (CER) of plantation sink projects will require the use of 'full carbon accounting', which offsets emissions from soils disturbed during harvesting as against the sequestration and storage of the trees.

This will encourage the use of soil conservation techniques at sensitive stages of the project cycle, including mulching litter and placing it over the

soil to maintain organic carbon and other nutrients and re-planting the stock in the mulch. The result is reduced run-off, little need for fertilizer and a net reduction in soil emissions to complement the atmospheric emissions reductions (Bruenig 1996).

In summary, the contribution of CDM project investment to the long term sustainability of forest ecosystems and to forest products for both the domestic market and for exports has both ecological and socio-economic benefits for East Timor, benefits that will be maximised if what is exported has value added in the nation. However, controversy has surrounded CDM investment in sustainable forestry, because of the 'reversibility' of forest projects (they can become sources of emissions unless sustainable forestry is carefully practised) Uncertainty over the capacity of some species to adapt adds to the debate. Mangrove ecosystem rehabilitation is much less controversial, as mangroves will usually be planted as the basis for other commercial activities such as the restoration of fishing grounds and mariculture.

Conclusion

East Timor is in a unique position to base its economy on sustainable economic growth that enables the island nation to adapt to and minimise the impact of climate change. As a nation whose food, water and human security is very vulnerable to the risks of sea level rise and extreme climate variability, East Timor should be able to attract significant funding from the provisions in the Protocol to the Climate Change Convention for greenhouse gas emission reducing sustainable development.

The existence of petroleum and liquid gas in the Timor gap may well make East Timor a net emitter of carbon, but it also gives future governments of Timor a unique opportunity to put pressure on the Energy companies to maximise the use of liquid gas, as fossil fuel with the lowest emissions per energy unit.

It also places the nation in an excellent position to negotiate Clean Development Projects in other sectors including mangrove and fish habitat rehabilitation, reforestation, plantations, climate variation resistant crops and new tidal energy technologies. The essential theme of all sustainable development is that it must take into account, and minimise the impact of climate change.

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Environmental Pollution and Waste Management in East Timor

Carlos Conceicao

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Pollution and waste management are key issues for the sustainable development of East Timor. This presentation describes: the regulatory and institutional framework for pollution and waste management in East Timor; the principal sources of environmental pollution (present and future); environmental issues associated with waste management; and measures currently being taken by the Environment Protection Unit (EPU). Current sources of pollution include tourism, agro-processing, fuel and oil handling, agricultural inputs, waste disposal sites and domestic sewage. The Indonesian Environmental Management Act (1997) is the primary piece of legislation governing environmental pollution in East Timor. Secondary regulations cover effluent discharge, marine pollution, air pollution, and the management of hazardous wastes. There are no regulations currently applied in relation to solid waste management. The EPU carries out investigations of pollution events in response to public complaints and applies pollution prevention principles in the environmental review of new investments. The EPU is in the process of establishing pollution control procedures including a system of environmental permits for industrial facilities. Groundwater quality monitoring is planned for selected districts as well as a survey of contaminated sites, subject to availability of funds.

Introduction

Pollution and waste result from the activities of people who are unsure of or don't understand the impacts of their actions on the environment. This is an environmental issue that needs to be taken seriously by government and by all responsible agencies. Dealing with the effects of environmental pollution in East Timor is not just the responsibility of the EPU as a policy maker, but is the responsibility of all the agencies involved such as; Water and Sanitation, Division of Health Services, Infrastructure, NGOs and also of the general community.

Background

Pollution and waste can affect ground water and the atmosphere and can also impact on the aesthetics of the environment. Pollution and waste directly and indirectly affect the health of the community.

Explanation

Pollution results from toxic substances from industrial activities and domestic waste that cause changes in the chemical content of the environment (water, land and atmosphere).

Objectives:

- To avoid environmental pollution;
- To raise community awareness;
- To achieve sustainable development;
- To protect East Timor from activities outside the country that degrade and pollute the environment.

Discussion

Current pollution sources

Waste

- Household food scraps.
- Paper, plastic, cardboard, and used bottles that are thrown haphazardly in the streets of city and village centres
- Domestic waste water.

Construction

- Metal shavings, used tins and asbestos.

Agriculture

- Excessive use of non-organic fertilisers by farmers.
- Pesticides.

Motor Vehicles

- Smoke from motor vehicles and other machinery.
- Used oil.

Tourism

- Liquid and solid waste.
- Problems with local residents.

Future pollution sources

- Industry and factories.
- Infrastructure.
- Mining (coal, marble, gold, etc).
- Oil and gas.
- Tourism.

The role of the EPU

The role of the EPU as a regulatory body for environmental management involves:

- Development of regulations and policies that relate to environmental impacts including pollution.
- The implementation of environmental regulations.
- Development of community education programs and community services to prevent and control environmental pollution.
- Monitoring of the effectiveness of environmental regulations.

Regulations

In terms of environmental legislation in East Timor, the government (EPU) is working to implement a number of regulations. However, we would like to apologise because most of the regulations that will be presented have been adopted from Indonesian law, while only one regulation is a product of the Transitional Government (UNTAET). The regulations are:

1. Indonesian Government Regulation No 20, 1990 regarding water pollution.
2. Indonesian Government Regulation No 23, 1997 chapter 6 paragraphs 1 and 2 which state the following: every person has a responsibility to preserve the function of the environment as well as preventing pollution and environmental degradation, every person whose activities may affect the environment is responsible to provide accurate information about environmental management.

3. Indonesian Government Regulation No 27, 1999 regarding environmental impact assessment.
4. Indonesian Government Regulation No 41, 1999 regarding the control of air pollution.
5. Indonesian Government Regulation No 85, 1999 regarding the management of dangerous or toxic waste.
6. UNTAET Regulation No 19, 2000 regarding protected areas.

The implementation of these regulations is very difficult, because they are Indonesian regulations. Our new nation requires new regulations that are appropriate to our situation.

Conclusion

Pollution and waste management needs to be implemented in East Timor. There needs to be intensive public education regarding environmental regulations. Pollution and waste have a negative effect on the health of the community.

Suggestions:

- Regulations concerning pollution and waste in East Timor should to be published;
- Ongoing community education regarding the legal framework for pollution and waste management is required;
- There needs to be coordination between departments and NGOs involved with pollution and waste management, for example; between Water and Sanitation, Civpol, the Investment Institute and Legal Affairs.



Assessing Environmental Needs and Priorities in East Timor

UNDP/Norway – Odd Terje Sandlund, Team Leader

Jan Bryceson, Demetrio de Carvalho, Narve Rio, Joana da Silva, Maria da Silva

This presentation will discuss the purpose, immediate objectives and outputs, as well as some of the preliminary findings of the project “Assessing Environmental Needs and Priorities in East Timor”.

Purpose

To generate awareness and debate on environmental issues and priorities, as a basis for the identification and development of priority proposals for presentation to CNRT, UNTAET and the donor community.

Immediate Objectives

- Identify and engage key stakeholders in discussions on environmental issues and priorities in East Timor.
- Raise the awareness of environmental threats and needs.
- Gather background information on natural systems, and the social ecology of the East Timorese community.
- Identify and develop realistic and implementable priority proposals for further funding.

Outputs

- Report on environmental issues and priorities
- Prioritised and implementable project proposals designed to address the emerging priorities

Information obtained through

1. Meetings and interviews with:

- Farmers, fishermen, townsfolk, and other individual citizens
- Suco chiefs and other local authorities
- Sub-district and district administrators
- UNTAET/ETTA staff at national, district and sub-district levels
- National Associations (OMT etc.)
- Timorese NGOs

2. Our own observations

- Travelling by land in the districts of Dili, Manatuto, Baucau, Lautem, Aileu, Liquica, Bobonaro, Ermera, Suai, Oecussi and,
- Helicopter survey over the whole of East Timor.

3. Secondary sources

- Published reports and books
- Unpublished data

Issues identified

- Deforestation/catchment area management
- Coastal zone management
- Environmental legislation and institutions
- Public awareness and education
- Pollution and solid waste in urban areas
- Environmental and biodiversity assessment

Deforestation/Catchment Area Management Relates to:

- Drinking water quality and availability
- Irrigation water availability
- Soil erosion/land degradation
- Agricultural Production
- Disaster Prevention (landslides etc)
- Forest production (timber, non-timber forest products)
- Road construction and maintenance
- Biodiversity conservation
- Microclimate

Coastal Zone Management

Values:

- Fisheries and other resources
- Biodiversity conservation
- Recreational and tourism values

Threats:

- Unplanned land use and occupation
- Unregulated tourism
- Spillage from oil exploration
- Wastes and pollution from urban sewage and industry

Environmental Legislation

Should include:

- Environmental law
- EIA legislation
- Integration of environmental concerns into all other legislation
- Incorporation of traditional laws and customs (e.g. *tara bandu*)
- Openness and transparency

Public Awareness and Education

- School curricula at all levels
- Information through media
- Local community involvement
- Agricultural and forestry extension services
- Participatory awareness campaigns

NATURAL RESOURCES AND CONSERVATION WORKSHOPS

Forests and Biodiversity Workshop

Issues identified; Bad management •Firewood, over-cutting •Shifting cultivation •Illegal logging •Top-down planning •No law enforcement •Unclear land tenure, forest/resource •Trade in protected wildlife •Confusions: custom / government law •Overgrazing •Uncontrolled burning •No clear boundaries •No community education •No guidelines for implementation •Poverty/economic pressure → overuse of forest products •Use of timber for local construction •Conflict between traditional and current management practices • Exploitation of forest using local people •Loss/modification of habitat •No land-use policy ∞Lack of integrated + multi-disciplinary approach •Lack of awareness of community ownership and/or management •Lack of data/access to data •Lack of capacity/resources/priority •Lack of donor cooperation •Lack of government structure

PRIORITY ISSUES	STRATEGIES
Bad management of forests	<ul style="list-style-type: none"> • Employ experienced foresters • Coordination and cooperation between forestry, water catchment and land use departments • Develop strategic framework and guiding principles using action/learning process
No clear boundaries or ownership	<ul style="list-style-type: none"> • Constitution needs to clarify forest ownership • National forests policy and national land use policy
Lack of awareness of community ownership/ management of resources	<ul style="list-style-type: none"> • Resource a national forest inventory • Develop alternatives to wood for cooking • Educate community as to which wood is OK to use i.e. dead wood.
No guidelines for implementing laws	<ul style="list-style-type: none"> • Develop a system of law enforcement and penalties • Provide resources to implement • Cooperate with the Church in community education on importance of forest protection.

Water Resources Workshop

Issues identified; Deforestation •Forest burning •Uneven distribution of water resources •Poor water quality and poor health •Lack of testing laboratory •Protecting water catchment areas around the city – poor water quality in Dili •7 areas lacking water •Climate change •Need training for management of water resources •Control import and use of chemicals •Need legislation and fines for polluters (traditional and government) • Falling water table •Lack of information about water quantity and quality •Salination of coastal groundwater •Over extraction of water from ground water – by pumps.

PRIORITY ISSUES	STRATEGIES
Deforestation and deliberate burning of forests → bare earth, erosion, landslide and reduced water availability	<ul style="list-style-type: none"> • Education programs involving local people • More sustainable farming practices and land use
Poor water quality and poor human health (water borne diseases)	<p>Community Participation in:</p> <ul style="list-style-type: none"> • Short term – treatment of water (eg boiling) and alternative sources eg rainwater harvesting • Medium term – fence livestock and poultry out of water supply catchment, install sanitation and hygiene education • Long term – village level through to whole catchment protection (erosion control and reforestation)
Protecting water catchments in urban areas	<ul style="list-style-type: none"> • Reforestation • Set up common land forestry to head off private land struggles • Need a strong forestry department
Lack of effective legislation to protect water resources	<ul style="list-style-type: none"> • Laws to prevent water pollution by mining and industry • Strengthen traditional law in preventing deforestation and pollution • Need a strong well resourced Forestry Unit

Sustainable Development Plans Workshop

Issues Identified; Participation at both the national and local level • Human rights • Political system • Communities have control over their land • Land rights • The importance of local culture • Public consultation • Public education.

PRIORITY ISSUES	STRATEGIES
Capacity Building	<ul style="list-style-type: none"> • University cooperation • Approach communities
Financial Resources	<ul style="list-style-type: none"> • Implementation of taxing • Industry and Development • Foreign Borrowing
Representation and Participation	<ul style="list-style-type: none"> • Top-down meeting grassroots • Political legitimisation from society • Empowerment of society to participate
Legislation and Political System	<ul style="list-style-type: none"> • Community participation (Bottom-up) • Access to all information/ transparency • Civic empowerment

Pollution and Waste Workshop

Issues Identified; Plastic • Imported waste • Communication with districts • Information and Education • Enforcement of regulations • Illegal dumping • Economic incentives • Waste removal infrastructure • Exhaust fumes, air pollution • Waste oil • Factory waste • Petrochemicals • Waste management and control • Capacity building • Inorganic waste (Agriculture) • Enforcement • Research and monitoring • Toxic and hazardous waste.

PRIORITY ISSUES	CHANGES NEEDED	STRATEGIES
Waste Management & Control	<ul style="list-style-type: none"> • Implementation of simple technologies • Staffing (work teams) • Dissemination of information • Evaluation (current situation, effectiveness of implementation) 	<ul style="list-style-type: none"> • Develop priority programs • Bring together multi-disciplinary group to determine practical solutions • Formal & informal education of community, businesses • Data collection and analysis
Regulations & Enforcement, Community Awareness	<ul style="list-style-type: none"> • Legal sanctions (& penalties that reflect severity of offence) • “Socialisation” (i.e. community involvement & education) before application of regulations • Community awareness raising • Develop new regulations that recognise the specific needs and culture of East Timor. 	<ul style="list-style-type: none"> • Establish district environment committees • Organise weekly cleanings through Chiefs de Aldeia • Distribute information on illegal dumping (effects, regulations) • Publicity campaign (radio, posters) • Provide adequate waste disposal facilities (government)
Plastics	<ul style="list-style-type: none"> • Develop East Timorese regulations • More recycling 	<ul style="list-style-type: none"> • Encourage recycling by private sector • Reduce use of plastic water bottles • Information & education campaign • Encourage use of traditional materials (easily decomposable or reusable) • Utilise new technologies to reduce/ recycle plastics





Linkages Between Macro-economy and Environment: Implications for Environmental Policy in East Timor

George Bouma

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Introduction

Within the last 9 years since the Rio Earth Summit there has been enough research carried out to prove that we know macro-economics and the environment are closely linked. These linkages have implications for how government should establish and maintain environmental assets and quality. The process of policy making is integral to ensure adequate attention is paid to environmental maintenance. This paper argues that for East Timor, it is important that these policy decisions should be established sooner rather than later. It also highlights some of the policy issues which face a low revenue economy such as East Timor.

The Relationship of Economy and Environment

To most economists and environmentalists there is a clear recognition that linkages occur between macro-economy and environment (Ouattara, 1997). It is now widely accepted that the concept of environment as a partner to growth and development is a valid one. The old paradigm, which saw environment (and environmentalists) as a constraint to development, is no longer valid. So, how do these linkages occur?

Traditional macro-economic models do not include ecological systems and as such, for many years have remained outside the framework for

macro-economic decision making. For example, environmental resources, such as land, forests and minerals are inputs into economic growth. Also, outputs from economic activity, such as, greenhouse gases, solid and liquid wastes are dispersed back to the environment (Anderson, 1990). This relationship between the macro-economy, policy making and the environment is shown in Figure 1.

The model below represents a capital accumulation or investment model of growth. The left hand loop represents ways in which accumulation and use of material assets combines to produce economic growth. Basically, the accumulation and investment of labour and capital in productive processes results in economic output. Consumption of this output is often used as a measurement of economic growth.

The right hand side of the model shows the need for policy to minimise the impacts on environmental assets. Environmental assets are positive inputs into growth and from economic growth, residuals (pollution) are transmitted back into the environment. The transferral of residuals is a positive for economic growth, but the impact on the environment can be negative. The ability to protect environmental assets comes from environmental maintenance and investment.

This maintenance and investment may be in the form of:

- command and control regulations;
- environmental impact assessment; or
- revenue and expenditure instruments determined through the national budget.

If insufficient environmental maintenance and investment is provided, the economic system may encourage a reduction in the level of environmental assets (Anderson, 1990).

Therefore, parallels exist between required maintenance of material assets and maintenance of

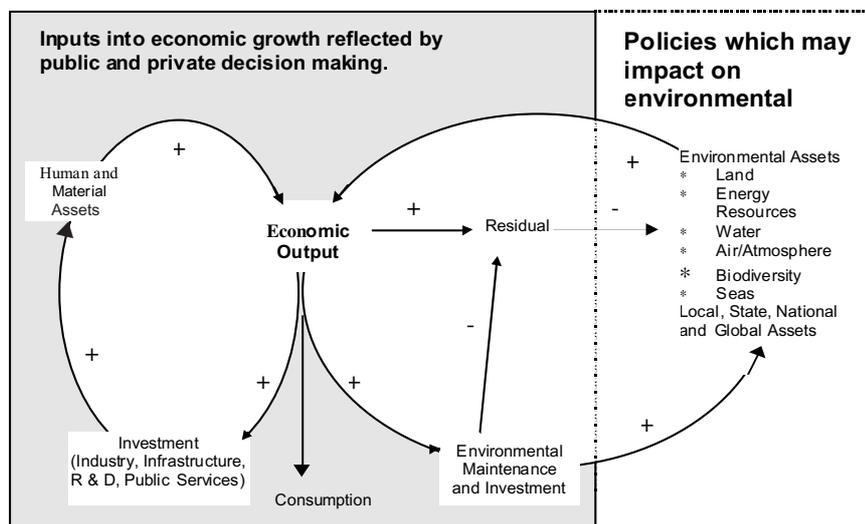


Figure 1. Linkages between economic growth and the environment. (Anderson, 1991)



environmental assets. Protection of environmental assets, as an input into growth, is required for continued economic returns and economic sustainability over a long term period (Anderson, 1990).

This has implications for government policy making which must send messages to economic actors (i.e. private sector) to ensure that depletion of environmental quality does not occur. In a subsistence economy such as East Timor this has added difficulties given the high reliance of community on areas of land that may be marginal and subject to significant environmental problems. However, in the realm of developmental economics, if environmental maintenance provided to various sectors is inadequate, then not only will macro-economic problems occur, but also social and environmental impacts. This in turn will have a greater impact on financing than already exists in East Timor. As a result, it is important that both the public and private sector pay attention to the maintenance of environmental quality in East Timor.

Implications for Environmental Policy in East Timor

Having identified linkages between the economy and environment it is now possible to examine the implications for developing environmental policy in East Timor.

1. Financing – fiscal policy to date has been developed by the UN controlled administration. National expenditure estimates are in the order of US\$43million for the consolidated fund of East Timor. The majority of expenditure is appropriately within the education, health and welfare sectors. However, a significant portion of the budget is directed towards law and order expenses. According to Fox (2000), the figure is nearing 17% of the 2000-2001 budget. The relatively small consolidated fund has structural implications for East Timor which is apparent in the relatively low expenditures (US\$0.7million) directed towards the natural resource sectors such as agriculture. Given the physical environmental characteristics of East Timor and the current environmental impacts of subsistence farming, government policy needs to reflect a development of the sector towards sustainable practices with financing from the consolidated fund and the donor community.

Furthermore, future development of East Timor's economy should seek to develop markets which avoid the occurrence of externalities as has occurred in other developing countries. The extreme examples of the pollution havens, which occur in Mexico and the Philippines, provide

opportunities for exploitation by multi-national companies seeking to maximise profit. Ultimately, severe environmental degradation occurs which in turn causes social impacts and the financing of any clean-up activities becomes the responsibility of national governments that do not have sufficient revenue to undertake these activities. This illustrates the need for a framework of command and control regulations administered by the government.

2. Command and Control Regulations – still form the basis of most countries' method for ensuring environmental quality is maintained. These regulations are developed and implemented to provide guidance for economic development and set standards to which economic actors must adhere. For example:

- ❖ Environmental impact assessment provides a decision making process for government to determine the suitability of project development. Through the process of establishing legally binding conditions on development it helps to internalise the cost of appropriate environmental performance to the developer and not the community.
- ❖ The regulation of natural resource markets is another example which will ensure rent seeking behaviour of the private sector is minimised. The Comoro River bed in Dili provides a case in point here where a lack of regulations and control resulted in uncoordinated extraction of gravel, which is clearly a public resource and therefore, subject to government control. If natural resource markets are under priced and inappropriately regulated, economic actors will over-exploit the resource which will lead to environmentally unsustainable practices.
- ❖ The regulation of government activity such as infrastructure activities is also an important aspect. The system of governance should ensure independence in the regulatory approach. That is, service providers should not regulate their own activity.

3. Environmental Policies – established by the administration of government provide a lower level of environmental guidance. These policies are more often than not developed to assist government in the implementation of its programmes and activities. These policies may take the form of technical guidelines and or expressions of the way in which a government intends to manage specific issues. For example, technical guidelines that deal with approaches for fuel and oil handling, groundwater resource protection, or solid and liquid waste management. Alternatively, policies can form a statement of intent such as a national policy on biodiversity,



rivers, forests and coastal management. Generally, these policies need some form of financial commitment by government.

4. Environmental Knowledge – within government and community is a critical aspect for the development of East Timor. For many years there has been a lack of opportunity to research and better understand the environmental quality of East Timor. It is important that research opportunities be identified and this information is shared with the administration to assist in formulating sustainable development policies. Furthermore, the lack of awareness and education within the community is a critical issue in human development. As East Timor's economy develops, it is fundamental that social development and increased awareness of environmental matters is provided.

Conclusions

The following conclusions can be drawn from this analysis:

- Financing will remain an issue for

undertaking environmental programmes and projects in East Timor. However, as critical reconstruction needs diminish, opportunities to target priorities that improve and maintain environmental quality should be identified. Through this process appropriate financing arrangements can be explored.

- The need to establish a framework of environmental regulations and policies, specifically for East Timor, designed to ensure foreign private capital includes the cost for maintaining environmental quality.

- The administrative structure of the Government of East Timor should provide for independence in managing environmental and natural resource assets to ensure the country's long term development potential is not jeopardised by unsustainable activities.

In these aspects I urge the leaders of East Timor to send a clear message to ensure the United Nations and the international staff work with their East Timorese colleagues to fulfill the important

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Linkages between Globalisation, Trade, Investment and the Environment

- Summary of full paper¹ -

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Introduction

In a new political setting, the need to reconstruct East Timor's economy has forced East Timorese policy makers to rethink the role of trade and investment in the economy, society and the environment. Inaugurated with the publication of the Brundtland Report in 1987 (World Commission, 1987), the principle of sustainable development has quickly become an important feature of East Timor's economy.

The emphasis on sustainability presents today's trade policy makers with a formidable challenge: how to develop appropriate market incentives, institutional structures and regulatory systems that are not only compatible with ecologically sustainable development, but that contribute towards it. To address this task,

producers, suppliers, processors, marketing bodies, and governments need to answer questions such as:

- How is deepening international economic and environmental integration influencing East Timor's domestic policy objectives?
- What are the pathways by which international trade and environmental agreements shape and constrain how producers and traders use natural resources?

Questions such as these are leading to calls for small nations, including East Timor to actively contribute in mutually supportive ways to the common goals of sustainable development and improvement in the quality of life.

¹ Summarised by the organising committee

Why Linkages between Trade and the Environment Matter

During the past decade there has been a resurgence of interest in the links between trade and Foreign Direct Investment (FDI) on the one hand, and environmental standards on the other hand.

Some examples of international spillovers associated with global environmental problems are global warming and ozone depletion. Greenhouse gases contribute to climate change, and CFCs deplete the ozone layer, regardless of which country they are emitted from. Hence there is a concern that if one set of countries seeks to tax or otherwise induce less of these emissions by their firms, the environmental benefits from these measures will be offset in so far as the activities responsible relocate to countries with lower standards (Anderson, 1996). The management of such issues requires international cooperation. This can be accomplished by common taxes and charges systems, and by coordination of internal transfers and national measures in countries which lack the ability to pay.

East Timor's Resources Endowments

The standard theory of changing comparative advantages in a growing world economy has been developed without consideration of environmental concerns, but according to Anderson (1996) it can be readily modified to incorporate at least some environmental concerns.

Leamer's endowment triangle (Leamer 1987) helps explain the paths of development of a country as it alters its comparative advantage from labour-intensive to capital-intensive settings. The empirically-supported theory suggests that countries tend to gradually alter their comparative advantage from land and other natural resource-intensive industries to those that are more capital and skill-intensive activities (particularly manufacturing and services).

Trade, Globalisation and Investment Policies for East Timor²

The pervasive effects of the process of globalisation are being felt in poorer economies. Greater openness of/and interdependence between national economies provides wonderful opportunities and challenges for poorer economies. Globalisation is raising the rewards to economies choosing good economic governance, but is also raising the cost to economies with poor economic governance.

Since East Timor's political and bureaucratic bases were largely destroyed in 1999, this new state has a golden opportunity to choose the optimal strategy for development. Openness to trade and foreign investment will provide a key to raising living standards in an underdeveloped economy such as East Timor's.

Kasper (2000) asserts that the unconditional external disciplines of free trade and free capital flows will supplement the internal constitutional control of political power in the small government to be established. Furthermore, Kasper emphasises that economic openness is a means of cultivating habits and rules of economic and political conduct that are essential to peaceful cooperation and reconciliation.

The mission for trade policy for East Timor is to establish a broad policy and institutional framework for rebuilding trade and industry, business and entrepreneurship for sustainable socio-economic development in East Timor (UNTAET 2000).

An important question is: what trade policy issues are likely to be most important for East Timor? The essentials of trade policy for development in East Timor include the following:

- capacity building for bureaucrats to enable them to appreciate the virtues of an open trading system;
- trade facilitation, which includes efficiency and transparency of customs administration; and
- active pursuit of regional and multilateral avenues for expanding market access for East Timorese exporters.

Drawing on a recent economic development strategy³ and experiences from other post-conflict situations, the overarching principles for a medium and long term development strategy for East Timor include:

- development of a market based economy with selective intervention by the state that is export oriented and outward looking;
- assigning paramount importance to human resource development;
- laying the foundations for good governance based on democracy, accountability;
- transparency and human rights.

It is encouraging to note that East Timor is already committed to pursuing an open and liberal trading policy and regional cooperation from the outset aimed at integrating East Timor's economy into regional and international markets.

² Drawing in part from Da Costa (2000)

³ A detailed statement of objectives and strategies of East Timor's economic development, Final Report of the East Timor's Strategic Development Conference held in Melbourne, 5-8 April 1999.



Foreign Investment Policies

Consistent with a strategy of openness, East Timor is adopting liberal investment policies.

An appropriate policy question asked at the outset is whether foreign investment should be encouraged in all sectors as a means of stimulating economic growth and development, or should restrictions be placed on some area?. Clearly, the economy of East Timor will not shift onto a growth path unless it can overcome the chronic shortage of capital and attract investment. Larcombe (1999) suggests that government involvement in priority infrastructure programs, using aid funds, multilateral concessional loans or carefully constructed partnerships with the private sector may stimulate investment. Key sectors according to Duncan (1999), include power, communications and transport, while Hill (2000) suggests that the principal FDI policy challenges concern the regulatory and fiscal regimes. Both should be guided by simplicity and transparency. Whether particular sectors or activities should be closed to FDI is principally a political question. In order to attract foreign investment in the mining sector, tourism projects and some cash crops, well-defined property rights should be established in addition to creating a business-friendly environment and political stability to sustain economic development of the country.

An important means of encouraging foreign investment is to establish an appropriate legal framework. East Timor's Foreign Investment Act is being prepared and the impending act is likely to be patterned on standard international practice as a consequence of the UN presence.

The strategy to create a competitive environment is essential to avoid experiences of many small island states that have been ruthlessly exploited in terms of prices paid once global corporations establish a dominant base. It is important to develop a foreign investment policy that spells out the legal rights and obligations for foreign firms. Similar to most of the Pacific island states which often offer concessions to attract investment, one of the dilemmas for East Timor is that powerful corporations have many global location options available to them and require incentives.

The Way Forward

To maximise opportunities from opening up the economy to foreign trade and investment, East Timor will need to build bilateral economic relationships with Indonesia and other countries, notably Australia and New Zealand, and seek membership of regional and multinational organisations. This will be particularly important for a vulnerable state like East Timor. But the first priority is normalisation of bilateral relations with Indonesia, where the exchange of merchandise will be a major source of economic growth. It is clear that East Timor has to maintain an open trade regime. Hill (2000) asserts that East Timor's major trading partners will inevitably be Australia and Indonesia.

The second priority is membership of ASEAN, as an affirmation of East Timor's formal credentials as a new member of the community of Southeast Asian states. East Timor needs to explore the possibility of becoming an ACP/Lome Convention, and a WTO member or at least associate, so as to learn more about the benefits of a rule-based trading system.

Conclusion

In conclusion, despite its small size, and sluggish beginnings, the opportunity is there to put appropriate domestic and foreign policies in place to sustain economic growth.

This paper has attempted to address the need for an outward looking strategy for East Timor as part of its overall strategic development. Economic potential for East Timor is closely linked to external developments. Increasing international economic cooperation and heightened environmental concerns at home and abroad, have forced East Timor's policy makers to anticipate the role trade and investment can play in the economy, society and the environment.

This paper suggests that despite its low economic base, East Timor is likely to gain most by gradually adopting transparent and liberal trade and investment policies at home to ensure the country seizes the opportunity to integrate its economy into the region and beyond.

A forward looking policy will maximise opportunities from opening up to foreign trade and investment that at the same time will not harm the environment.

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Trade, Globalisation and the Environment

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Natural resources like wild plants and animals, trees and seeds are biological resources that provide us with, among other things, food, commercial crops and medicines. A great deal of world trade is in biological resources, or products made from them.

There has been a massive increase in global trade that has led to more pressure being placed on biological resources such that they can become scarce or disappear. This is important for a number of reasons:

- If a resource disappears (e.g. sandalwood) then trade in it cannot continue and the income derived from it is lost;
- Reduction in the number and variety of biological resources (biodiversity), damages the earth by damaging or destroying the ecosystems on which we depend;
- Many elements of biodiversity have unknown medical uses which will be forever lost if they are destroyed; and
- Natural resources generally contribute to the quality of life.

What I want to look at are some of the ways that have been suggested that commercial trade in biological resources including medicinal products can benefit the countries and the people from which they are taken and whose knowledge contributed to their development. It is important that practical legal and structural mechanisms are put in place to manage the use of biological resources, so that they are not destroyed and can contribute to sustainable development. The example I use will be of a medical product, but the principle applies to other products.

Developments in technology have made clear that many of the biological resources found in developing countries can be used to create commercially and medically useful things. Companies, usually from developed countries, have the money and technology to carry out research and to develop products from them. When research succeeds and a new product, such as a medicine, is developed, the company that produces it can make a great deal of money from its sale.

This is because such products are protected by laws that confer a property right to the ideas and knowledge that went into making them. Once that property right exists, nobody is able to legally make or use the product without payment. This

system of legal protection is known as “intellectual property”. This can mean a product can be derived from biological resources taken from a developing country - the uses of which were discovered with the knowledge of traditional people - however, no benefit is received by that country or those people.

In 1992 an international legal agreement called the Convention on Biological Diversity was signed in response to international concern about the loss and destruction of biological resources across the world and the unfairness of the trade practices in them. The aims of the Convention are:

- Conservation of biodiversity;
- Sustainable use of the components of biodiversity i.e. genetic resources;
- Fair and equitable sharing of the benefits arising from the use of genetic resources.

The Convention recognises that all countries have the right to control access to their natural resources and recognises the important role of traditional knowledge, practices and people in the conservation of them.

The Convention sets out several ways in which its aims can be achieved:

- Access to genetic resources must be with the prior informed consent of the country that is providing them. Informed consent means that they must be told what the person or company accessing the resources intends to do;
- Technologies relevant to the conservation or use of genetic resources should be transferred to other parties to the Convention on fair terms;
- The results and benefits of research into and development of products from genetic resources must be fairly shared.

These mechanisms would only take effect in East Timor if implemented in the form of national legislation, institutions and practices at government and local level. Even if East Timor chooses not to sign the Convention, it will still need to consider ways in which to make arrangements for access to biological resources. It is likely to make use of mechanisms like those in the Convention to regulate access to biological resources and ensure that the East Timorese people see a fair share of the results of their use.

One way to do this is to link up the idea of intellectual property rights in products with the objectives and mechanisms in the Convention.

An example of this comes from India. A plant there, called 'Jeevani', has certain health-giving properties, which were known about and used for many years by local people, called the Kani tribe. An institution learned about this plant from the Kani tribe and carried out some research into how to extract these health-giving properties from the plant.

This institute was granted a patent (a form of intellectual property right) over the extraction of the health-giving components of the plant so nobody could extract them without making a payment. Then the institute sold a licence to another company to allow it to use the extraction techniques to manufacture health products based on extracts from the Jeevani plant. So both the institute and the company could make a lot of money from the plant. Both the plant and the original knowledge of its uses came from the Kani tribe, who were excluded from all these legal arrangements.

The question is, what did the Kani tribe get out of it? How could they benefit from the

exploitation of their traditional knowledge by these companies and organisations?

In this particular case, the institute promised to share the licence fees and other payments with the Kani tribe, and so they entered into a voluntary legal arrangement. The idea, however, is to create legal mechanisms, whether at government or local level, so that companies are obliged to enter these kind of arrangements. This would help to ensure that traditional knowledge associated with the use of biological diversity is properly valued.

There are many ways in which legal mechanisms can be arranged, for example in terms of licences and fee structures. The basic idea, though, is ensure that trade in biological resources can benefit the people of East Timor in a sustainable way through the use of appropriate legal or structural mechanisms. This necessitates working out access arrangements and sustainable trade mechanisms. I would ask that East Timor considers the use of mechanisms such as those found in the Convention on Biological Diversity.

Trade, Industry and Sustainable Development

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Governments, business and civil society are driving changes in trade agreements and standards in ways that could hardly have been imagined 10 or 15 years ago. Some initiatives are "voluntary" but will gradually become incorporated into "best practices" and binding arrangements. Other initiatives are fundamentally altering the basis of what is acceptable under trading rules. These changes are widespread, affecting the World Trade Organisation (WTO), regional trade agreements, phytosanitary rules, export financing and investment agencies, and decision-making within businesses. No country, large or small, can escape scrutiny and possible action directed against unsustainable practices. But at their worst, environmental trade measures can be disguised protectionism, and the cost of conforming to certification and ecolabelling can be a serious burden for small producers. On the other hand, new economic opportunities may be developed. There is a serious gulf developing between trade, environment and development interests that need to be addressed at the level of global (WTO) and regional trade agreements. The gulf will only be addressed when there is a robust trade and sustainable development reconciliation rather than a narrower focus on environment and trade.

Trade should be the means to an end - sustainable development (SD). But over the past decade a growing polarisation has occurred in which the trade community has opposed the imposition of environmental objectives, while the environmental community has pushed for the amendment of trade rules to reduce the social and ecological harm of international trade practices. Developing countries are wary of any measures that might become disguised protectionism, and point out that better access to rich markets is

essential for their economic development. These differences came to a head in the disrupted World Trade Organisation meeting held in Seattle in 1999.

Meanwhile, there are many initiatives originating outside of trade agreements, driven in part by alliances of business, consumer and conservation organisations. These are seeking voluntary standards for certification of sustainably produced goods and services and credible "eco-labelling". Some prominent

examples include ISO 14001 environmental management certification, Forest Stewardship Council and Marine Stewardship Council certification of sustainable production related to forest and fishery operations, and the Green Globe label for environmentally responsible tourism businesses. All of these efforts are designed to increase consumer confidence and to give exporting companies a credible means for expressing their commitment to sustainable practices. And of course, therefore to give the companies a competitive edge.

IISD has defined elements of a sensible and workable relationship between trade and sustainable development. Trading arrangements should reinforce good environmental practices, stimulate economic investment and development, and improve social well-being, rather than erode any one of these requirements of sustainable development. Seven interdependent principles can guide the relationship: *efficiency and cost internalisation, environmental integrity, equity, science and precaution, international cooperation, subsidiarity and openness.*

The continuing difficulty of achieving progress at a global level is problematic for both rich and poor nations. IISD has issued a statement on trade and SD about what is needed to break the impasse. The following observations are excerpted from this statement:

- *Addressing development priorities in the WTO will not, in itself, lead to sustainable development. Nor will a single-minded focus on the environmental issues that are encountered in the trade context.*
- *The single-mindedness with which environmental interests have pushed their agenda in the WTO, often to the exclusion of legitimate development concerns, resembles the single-mindedness with which free trade advocates pursue their cause. This lack of sensitivity to other agendas has created a backlash from developing countries.*
- *This backlash has been made worse by the environmental community insisting only rarely that legitimate environmental considerations in trade must, to the extent possible, be kept far from what is effectively green protectionism.*
- *The relationship of the environment with the trading system is entirely different from the relationship of labour with the trading system. The former requires extensive international co-operation, and a complex international environmental regime has been built in response to that requirement. The WTO must, at a minimum, deal with the issues that arise at the interface between the international environmental and trade regimes.*
- *Separating the environment and labour, while necessary in the trade context, will be difficult*

because labour rights, social justice and environmental protection are often a common cause in other areas of sustainable development concern.

- *While they are to some extent inescapable, labour issues do not merit a central place in the WTO because they can largely be resolved by national measures and through co-operation in the ILO, where trade unions have a recognised position.*
- *The perception persists that the environmental agenda at the WTO is being pushed by Northern countries and that it is of secondary interest to most developing countries. A more balanced environmental agenda is needed because a range of legitimate and urgent environmental issues are of concern to the developing countries, but are not making their way far enough up the agenda.*
- *It is a mistake to regard developmental and environmental issues as separate and largely unrelated. The issue for the WTO is sustainable development. Environmental goals cannot be reached without equity for the developing countries, whereas developmental goals cannot be pursued in a way that further undermines the environment.*
- *Those organisations that broadly share these views should work together to support constructive efforts at reforming the WTO and the multilateral trading system.*

That reform should focus on the following:

- ❖ *the WTO articulating - and accepting to be held to - the goal that the multilateral trading system must support and, if possible, advance sustainable development worldwide;*
- ❖ *openly addressing - and giving priority to - the range of impacts which result from trade liberalization, whether on small producers, rural poor, economic growth or the environment;*
- ❖ *making a concerted effort to look at ways in which the trade regime and the international environmental regimes can be made fully compatible and mutually supportive, including through conducting sustainability reviews of existing and new trade agreements;*
- ❖ *finding ways for developing countries to participate more equitably in work of the WTO;*
- ❖ *greatly increasing capacity, especially that of both governments and civil society in developing countries, to promote trade policy and to argue for reforms in the WTO that support and advance sustainable development;*
- ❖ *openly addressing and giving priority to the implementation issues which have bedevilled the Uruguay Round agreements, including the possibility that some agreements may require amendment; and*
- ❖ *expanding opportunities for participation by civil society organisations in further developing trade*



policy at the national level, while promoting increased external transparency at the WTO.

- These reforms should be undertaken in a way that recognises and reinforces the rules-based nature of the trading system, as well as the fact that public authorities have the ultimate authority to make rules. Nevertheless, there are significant international interests on which important functions are to be entrusted to actors outside the state. WTO rules by now impinge upon the interests of many constituencies, which may therefore be considered to have a legitimate voice on trade policy.
- The environmental community clearly and openly condemn blatant protectionism as bad for trade, bad for development and bad for the environment, and that they refocus their efforts on developing an environmental agenda in the WTO with which both developed and developing countries can identify.
- The environmental community support efforts to create a rules-based structure that minimises conflicts between trade liberalisation and the needs of environmental management. Although it is notoriously difficult to do so, it is only by agreeing to appropriate disciplines in this regard that it will be possible to deal with the real risk of green

protection.

- It be recognised and accepted that the balance of power is changing in the WTO, with the developing countries taking their rightful place. Nothing can be done on the environment and sustainable development without their support.

Within Asia APEC and ASEAN are possible sources of regional action for trade and SD. But compared to other regional arrangements such as NAFTA (North America), Maastricht (European Union), and MERCOSUR (Southern Cone Latin America) progress has been quite limited. The International Centre for Trade and Sustainable Development (ICTSD) is a useful source of information on current issues and negotiations.

The various global and regional trading arrangements may be expected to influence a number of activities within East Timor, for example, coffee and any future wood exports where organic products and “fair trade” can be turned to local advantage, fisheries and oil and gas. As well, all types of foreign investment attracted to East Timor might be expected to embrace sustainable development concerns.

Agriculture in East Timor “A consideration of the shift in development”

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“Only with environmental insight can development be beneficial for human beings, and only if human beings possess ‘good environmental sense’ will development be aimed towards principles of conservation, biodiversity, balance, and harmony for future generations”.

If Charles Darwin had written a book at the beginning of the third millennium, his major work may have been titled “The Disappearance of the Species”. In 1869, Darwin in his book “The Origin of the Species” sparked an intellectual revolution, and an ongoing debate between experts. A quarter of a century later, Planet Earth underwent major changes, including the significant loss of many species of animals and plants at a rate that had never occurred before. Major changes to ecology and to the earth’s atmosphere are threatening life on Earth.

There is no more relevant and tragic example of total destruction than the famines that have struck the majority of countries in Africa. As recently as the 1970’s, African nations were self-sufficient in food. However, by the 1980’s, approximately 140 million people (from a total

population of 530 million) were forced to accept food donations (State of the World, 1987). The community in general, and the press specifically, continue to associate such famines with the “long drought”. Actually, the long drought, while certainly frightening, is not the main reason for the famines. The long drought is only an accelerating factor in the decline in agricultural production. The decline in the quality of human life is heading towards “crisis point”. Such a decline is particularly associated with three main trends: 1) the high rate of population growth, 2) clearing of the forests and increased erosion, and 3) the failure of African governments to give the necessary attention and support to the agricultural sector, as this sector is intrinsically linked with meeting basic human needs.

Such has also been the case in East Timor, where the period of upheaval and occupation has depleted and degraded natural resources. The oppressive actions of the occupying regime included military operations that destroyed agricultural resources. There was a sharp decrease in the numbers of livestock along with destruction

of agricultural infrastructure. The supporting capacity of the environment also decreased.

In the last few decades, there have been several improvements in agricultural production techniques, technology and infrastructure development, especially in rice and corn production. Such improvements have also resulted in slow increases in livestock numbers.

However, these small progressions and improvements did not last long, because they were soon followed by the "scorched earth" program implemented by the occupying Indonesian government. This most tragic of all the actions of the occupying power, had wide ranging impacts on all aspects of community life, including East Timor's life support - agriculture.

The agricultural sector in East Timor is an important economic sector, in terms of the dominant contribution that it makes to GNP, the large percentage of the population that depend upon agriculture for their livelihoods, and as a provider of food for national consumption and also for export. These many functions highlight the importance of both natural resources and human resources.

Agriculture and the environment are like two sides of a coin - they cannot be separated. The environment is influenced and may even be changed by efforts to optimise agricultural production. There are two views about the relationship between humans and our environment. The first is that humans are the rulers of the environment, able to exploit available natural resources. This is an optimistic point of view, which sees human beings as separate from the environment, and regards science and technology as tools that can overcome environmental problems caused by human activity. The other point of view is that human beings are part of the environment - thus humans must endeavour not to harm the environment. This perspective is gaining prominence as environmental degradation is critically reducing the carrying capacity of the natural environment.

East Timor has a relatively small population (863,617). The development of agricultural resource potential in East Timor has been limited. Because the population is small, the agricultural sector has the potential to support the national economy, especially when it is considered that living standards are low. However, the majority of those that work in the agricultural sector are still extremely poor.

Agricultural production increases in conjunction with increasing population size. Such increases in population mean that there are greater food needs, both for immediate

consumption, for industrial needs and also as a trade commodity. Efforts to increase the quality of life are always accompanied by increased resource consumption, and its concomitant consequences. In such a framework, the important issues are related to agricultural production are:

- 1) population increase,
- 2) environmental pollution,
- 3) suitability and capacity of the land, and
- 4) the impacts of production on the environment.

Thus what form should agricultural development take in this era of independence?

In reference to the above explanation of the agricultural profile in East Timor, there are several challenges that must be looked at from technical, social and economic perspectives:

- ❖ *How can we increase the quantity and the quality of agricultural production in East Timor?*
- ❖ *How can we create production centres that take into account the comparative advantages/production specialisation of each area/district?*
- ❖ *How can agricultural production activities broaden business opportunities and create work opportunities for the growing number of people in need of work?*
- ❖ *How can a production method be developed that includes all stages of marketing of goods?*
- ❖ *How can we create credit facilities that can be easily accessed by small-scale farmers?*
- ❖ *To what extent is the use of multilateral and bilateral foreign aid for agricultural development efficient and effective?*
- ❖ *What is the effect on village economies, of this era of globalisation and eco-labelling that has overwhelmed us?*

East Timor is a nation that is actively preparing for full independence in the near future, with a relatively low level of social prosperity. Full development needs to be implemented, as it is the only way to raise the level of prosperity. This phase is an important phase in the search for a structure and an approach to national development, especially agricultural development, that can be adapted to suit the natural conditions and the social, economic and cultural development of the East Timorese community.

In the system of agricultural development in this new era, the role and participation of farming communities must be increased, from the stage of program planning through to implementation. Government intervention must be decreased or even abolished. The government must have a role only as a facilitator and a policy maker for development, as well as the maker of regulations



for the implementation of agricultural development. Agricultural production activities even in this era, besides focussing on an increase in production, must be accompanied by a broadening of employment and business opportunities.

Principles of sustainable development as explained above include independence and forward thinking. Sustainable agricultural development that is integrated in both domestic and international markets can be achieved if there is:

- 1) efficient production,
- 2) investment,
- 3) product diversification, and
- 4) external balance to the national economy.

Additionally, to ensure sustainability of agricultural production in regard to interactions

between humans and the environment, there are five key points that should be emphasised:

- 1) biological diversity;
- 2) ecosystem conservation;
- 3) interconnection between natural elements in production activities ;
- 4) minimising of environmental damage; and
- 5) regulation of production activities and associated economic activities.

The interconnections between the environmental, agricultural production and economic well being are all deciding factors in sustainable agricultural development. Balance between such elements can give a guarantee of sustainability of agricultural production and prosperity, both for present and future generations.

Organic Agriculture

Scott Kinnear,

Chairperson Organic Federation of Australia

Introduction

Organic agriculture takes many forms, from large corporate farming with high use of natural fertiliser and machinery inputs, to small subsistence farming with little or no inputs apart from the labour of the farmer. In many cases people have always farmed organically without the name. In other cases “organic” was a name articulated in countries where industrial agriculture emerged in a dominant form.

Farmers, after observing soil degradation caused by the use of water-soluble fertilisers and pesticides, developed the concept of organic agriculture that has now been formalised in standards and certification around the world. The International Federation of Organic Agricultural Movements (IFOAM) has 700 member organizations around the world with more than 200 of them functioning as certification organisations. The formalised system of certification is more prevalent in the developed country markets such as Europe, the US, Canada, Japan and Australia and in most cases the developing country certification systems were established to respond to the demands of the developed country markets.

Consumers are also increasingly keen to avoid the products of industrial agriculture and are turning to organic food and fibre products. The certified organic product market is now worth \$20 billion US annually and is expected to reach \$100 billion US by 2006.

As we face declining land area through

population expansion and an unprecedented rate of destruction of those arable lands that are left, it is critical to debate what sustainable agriculture means and how it may be achieved.

1. The role of small farmers in local and regional planning and development of domestic and export markets and small grower certification schemes.

Small farmers are not only critically important to agricultural sustainability, but are also critical to the survival and health of rural communities. Small farmers contribute far more to rural communities than do corporate farmers. In addition small farmers are generational farmers and are best placed to make land use decisions to meet restorative objectives. We advocate a policy of support for small farmers giving them access to land and appropriate assistance with research and development as well as advice and extension so they may achieve profitable farming while restoring damaged soils and producing food of optimum quality for people to eat. The development of markets needs to pay attention firstly to local and regional needs and secondly to export markets. It is hardly surprising to see more than 70 % of countries where there are food shortages exporting commodities for cash.

Certification is required to gain access to the developed markets of Europe, the US and Japan. East Timor should be wise in the use of certification to gain access to export markets and introduce cost effective domestic certification when

the need arises. In Australia we do not yet have mandatory requirements for growers supplying the domestic market. Where possible small grower certification schemes will reduce the cost of certification, which tends to be more expensive in developing countries¹. Cooperatives can also be excellent structures for processing, transport and marketing of organic products and thereby reducing the cost of certification.

2. Why people buy organic? What is being done to market organic products?

People buy organic for a number of reasons. People may choose organic products for self focussed reasons such as a search for a disease treatment or taste and quality. Other reasons are more altruistic such as concern for the environment and communities and animal welfare. Consumer concern about the effects of pesticides is very high, and in some markets people have concerns about genetically engineered foods.

The marketing of organic foods varies depending on the country, for example in Europe some governments are supporting conversion to organic agriculture and promote organic foods to their citizens². At an international level the discussion about standards and promotion of organic foods is considering issues such as food miles³, regional production and consumption of food, setting prices based on the cost of production (rather than by a global auction system) and the interdependence of small farmers with rural communities.

3. The role of standards and certification and the expected outcomes of organic production systems including the social and trade benefits of organic.

Organic Standards are critical to the formalisation of organic agriculture. The standards lay down what inputs can and can't be used in an organic production system. Artificial fertilisers and pesticides are prohibited. The standards also prescribe the practices that can and can't be used. For example feed lots and battery hen egg production are prohibited. There is considerable discussion through the international standards development committees of IFOAM, concerning the social and cultural implications of organic agriculture and how they may be introduced into standards. There is also a move to regional standards throughout the world to accommodate northern and southern hemisphere and tropical and

temperate differences.

Certification in most countries is performed by grower-based organisations, which inspect farms to verify compliance with organic standards. In some countries the government operates the certification system⁴ and in other cases, such as Australia, the government provides third party verification of the independent certification organisations. Costs in Australia are approximately \$500 AUD per year per farm. There is often also a levy imposed of 0.5% of gross turnover. Small grower schemes are more cost effective.

Over time, organic agriculture can be expected to deliver a raft of positive environmental, trade and social outcomes. The strategic conversion to organic agriculture in any particular country needs to be undertaken in harmony with expanding community awareness of the benefits and support for organic agriculture. The relationships between farmers and consumers, whether they be local or export, should be long term and committed. In the longer term we hope this will lead to price setting that takes into account the cost of production of the farmer rather than what world market prices dictate. This will lead to profitability for small farmers and the corresponding economic conditions that assist sustainable rural communities.

4. The debate over Genetically Modified Organisms (GMOs) and organic products - debunking the myths and emotional arguments.

The world wide debate over Genetic Engineering (GE) has been lead from Europe with concerns about the safety of industrial agriculture highlighted by the spread of mad cow disease. One of the myths of GE is that we need GE to feed the world. Social and political solutions are far more likely to feed people than GE production technology. There are also ongoing public health and safety concerns and environmental concerns with the potential for GE genes to jump species. Other concerns are the lack of long term testing and the rapid introduction of crops for field trials and general release without notification of exact plantings. Organic standards prohibit the use of GE and organic farmers stand to be contaminated from pollen flow⁵. Many people mistrust the developers of GE technology who in many cases introduced chemicals into agriculture and went on to design the green revolution.

¹ Where there is no certification organisations, then European or North American certification organisations will, at considerable expense, send inspectors to accredit the farmers. This increases the cost of certification. Some governments subsidise the cost, for example Switzerland.

² One year ago, the Danish Government implemented \$500 million AUD in support for organic agriculture over a five year period.

³ Food miles is how far the average food item travels from farm to consumer, in the US it is now approximately 2500 miles. This is an increase of 30% over ten years.

⁴ In Switzerland the government certifies all of the organic farmers.

⁵ In Canada there is virtually no 100% GE free canola crops because of pollen flow.



Sustainable Agricultural Development in East Timor

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Environmental degradation is not only caused by natural disasters such as volcanic eruptions, droughts and floods but also by human activities.

Unwise environmental management and natural resource use result in environmental degradation.

To fulfil farming needs in East Timor, dry land farmers practise shifting agriculture: clearing forests to create new agricultural land. Such farms usually last for only two to three years before the land is abandoned and more forest is cleared. Farmers practising shifting agriculture do not know techniques for land and water conservation. In addition, land clearing enterprises can make the situation worse. The result of shifting agriculture and land clearing is erosion, barrenness and soil infertility.

With the expansion of barren land in forest areas, the water storage capacity of soils is greatly reduced. This results in increased incidence of natural disasters such as floods, landslides and drought, as well as the loss of natural springs.

Environmental degradation can occur as a result of excess use of fertilisers and pesticides. Fertilisers that are washed into main waterways result in rapid growth of weeds such as water hyacinth, which results in eutrophication (lack of oxygen). The lack of oxygen in waterways has negative impact on the organisms that live in them. Excessive use of poisonous agricultural pesticides also pollutes waterways causing a decrease in the number of fish. Fish living in polluted waterways may accumulate heavy metals, posing a danger for human consumption.

The introduction to newly cleared plots of new plant varieties can attract pests, such as bush pigs, mice and insects.

Further impacts of farming activities include:

- a. Spread of disease from poorly managed agricultural wastes;
- b. Noise pollution from rice milling;
- c. Injuries sustained from farm machinery such as welding equipment where operators have not received adequate training.

We need to examine agricultural development in East Timor and the problem of how to feed the approximately 800,000 inhabitants. We need to question governments and farmers who jump

straight into intensive farming requiring a supply of expensive inorganic fertilisers and factory pesticides. It is as though there are no other options. Is this really what our community thinks? If so we must find the source of these ideas.

We often think subconsciously that if we don't use inorganic fertilisers and factory pesticides our yields will decrease and our crops will fail.

Farmers have to be encouraged to raise production to maximum levels through a variety of means. Sometimes agricultural inputs are not used correctly. Also, farmers may be unaware of the negative effects of exhausting available soil resources - that the land has a limited production capacity.

Achievement of Sustainable Agricultural Development

How can we overcome the vicious cycle of agricultural problems discussed above?

Firstly we must find the source of the problems. We often look for the source outside ourselves, when in actual fact if we are honest it is often in our own way of thinking, our way of life and our actions.

All of the above problems can be explained if we explore our wasteful modern way of life that is based on short term thinking. We are hedonistic - excessively worshipping high technology while not considering that the right way to live is to be at peace with nature. Nature needs to become our friend, rather than a tool of exploitation to satisfy our egos. But we should not become environmental/natural romantics, too afraid to disturb or manage nature.

Sustainable agriculture, or what is often called organic or natural agriculture (farming without the use of man-made fertilisers or pesticides) represents a wise choice. Using organic methods, we can investigate how crop's needs can be met in a way that is in harmony with nature.

The problem with developing sustainable agriculture is linked to how we view nature. We must protect, and look after nature's creation and use it as a means of bringing us closer to God. So managing land, we should not just see it as a source of production to use and exploit, but as a sacred place. The ideal way to support human life is to produce crops without losing soil fertility

and without destroying natural resources. If we conserve the environment, present and future generations can depend on the generosity of nature.

To take produce from the land without degrading it, is to regard the land as a mother that gives sustenance for life now and for future generations. If the land is thought of as our mother, the baby is a symbol of ourselves – we are weak and very dependent on nature.

Our duties should be as follows:

- a. To encourage conservation of the natural environment;
- b. Undertake selective breeding and genetic engineering of plants and animals;
- c. Develop institutions to support farming ventures, increase the price of agricultural products and facilitate the marketing of farm produce;
- d. To push the use of organic fertilizers and techniques in cultivation and control of agricultural pests.

All these actions will serve to:

- a. Limit the dependence of agriculture on commercial factory pesticides and fertilisers, and on subsidies and credit;
- b. Limit environmentally destructive practices;

c. Ensure that agriculture is the main source of income for communities in East Timor.

We will see successful results from sustainable agriculture if we raise the environmental awareness of farming communities. For this we need continuous education and knowledge exchange. We need to build partnerships between all of those who are concerned with the environment and sustainable development. We need to think beyond feeding ourselves today.

Of utmost importance is political will and intent to give farmers the freedom to choose appropriate management practices. In terms of sustainable agriculture, there is a need to see environmental problems as requiring moral strength: the way in which we manage land must be accountable to the creator.

We must prove to our children and grandchildren that we are not just a generation who enjoyed and destroyed – but a generation that worked hard to ensure that future generations have a better life, living in harmony with nature.

We hope!

Building a Self-Sufficient Economy

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Introduction

The self-sufficient economy project is a project of the King of Thailand. It espouses the idea that the fulfilment of food needs and the continuation of life depend upon the individual. The majority of the people of Thailand are farmers, and the majority of these farmers are poor.

Two of the main issues in Thailand are poverty and the destruction of forests. These problems are mainly caused by low income generation and inadequate food. This means that trees in the forests surrounding villages are logged and people move to the cities to look for work.

The self-sufficient economy project is very useful in overcoming poverty because people are able to produce their own food, which can mean a better quality of life and a reduction in the incidence of poverty.

The Thai Peace Keeping Force (PKF) contingent in East Timor began the self-sufficient

economy project in order to help the East Timorese people to have a better quality of life for the future. As such, conflict and other problems in society are reduced, and there is peace once again for the East Timorese people. One of the main elements of this agricultural project is that it is based upon organic farming with the use of Effective Microorganisms (EM), thus the project is known as the EM Project.

The EM Project consists of four main activities:

1. Reducing the cost of planting rice and crops by using Effective Microorganisms (EM)

The reason why we have implemented this project is because the majority of the population in East Timor are farmers. So if we wish to help the community, we must aim to improve the economic, social, and environmental situation.

Usually farmers use chemical fertilisers and poisonous products to suppress the growth of weeds, requiring large amounts of money every year. In our project, we have recommended for farmers to apply a system of natural agriculture by using microorganisms and natural products to make fertiliser. Since we have begun this project, we have been able to lower production costs and increase farmers' incomes.

2. Fish and frog cultivation in small plastic ponds

Because the quality of the soil in East Timor is such that it cannot retain water, we have used plastic sheets to place in the ponds before cultivation of the fish and frogs. In regards to food for the fish and frogs, we recommend the use of termites, and food scraps. The use of termites has the important benefit that it can encourage the community to stop burning forests because termites can be collected from pieces of rotten wood found in the forest.

3. Planting vegetable gardens around fishponds and along fences

As previously mentioned, one of the important issues is how to make the best use of available water, thus we recommend that the local community plants vegetable gardens around the ponds and along fences, and uses the water from the ponds to water their vegetables. The water in the ponds contains nutrients that fertilise the vegetables. As a result, plants grow more quickly and this practice also aids the rotation of water in the ponds.

4. Cultivation of village chickens by the use of termites

Cultivation of village chickens to reduce food costs is a common practice in East Timor. We recommend and have introduced to the local population ways of cultivating termites to be used as chicken feed. Simply put, this can be done by the following process: dig a hole, place a dry piece of wood in the hole with leaves and grass underneath, cover with a sack, and water with EM solution. After 3-5 days, termites will begin to appear. Digging many holes and rotating the use of the holes until there is enough food will reduce the cost of chicken feed. Additionally, termites contain a lot of protein, thus by eating the termites the chickens will be healthy.

What is EM?

EM is a mixture of beneficial bacteria. There are many bacteria in soil, water, and the atmosphere. Bacteria cannot be seen with the human eye, but can be seen with a microscope. Bacteria can break

down organic material, which gives beneficial food and energy to plants and livestock.

Bacteria can be divided into two groups: aerobic bacteria and anaerobic bacteria. These two groups can be further divided into three types: 1. Beneficial bacteria 2.. Neutral bacteria 3. Harmful bacteria. Neutral bacteria make up 80% of all bacteria. Beneficial and harmful bacteria have individual functions that neutral bacteria will either support or interfere with.

As microorganisms, EM require food. All organic material represents food for EM.

In the first instance, EM must be given food that contains sugar such as molasses (sugar residue from the processing of sugar cane to produce fine sugar), orange juice or coconut juice. Alternatively, water residue from washing rice, or urine can be used.

Reproduction of EM

By mixing a small amount of original EM solution with water and molasses or orange juice, coconut juice, rice water or urine, and storing it in a cool place, EM solution can be replicated. After three days the new EM mixture is the same as the original mixture.

EM characteristics

- Good EM solution is brown in colour, and smells fragrant.
- If EM is poured into water, it will break down any organic waste that is in the water, and maintains the quality of the water.
- If EM is sprayed on to crops, it will break down any organic material that is in the soil, and provide food for the crops.
- If EM is used for livestock, EM aids in the digestion of food by livestock, with the result that livestock will grow quickly.
- If EM is sprayed on to organic rubbish, EM will break down the rubbish and will break down harmful bacteria.

Conclusion

This project has already succeeded in Thailand, and has greatly helped the people of Thailand in the building of self-sufficient economies. One indicator of the success of EM is that it has been able to increase the production of rice and other crops. When grown using EM, rice stalks and grains are larger and greener at the time of harvesting. Results have been the same with other crops. The use of EM can reduce the cost of rice production from 3000 Thai Baht per hectare to become 240 Thai Baht per hectare (a reduction from \$128 AUD to \$10 AUD per hectare), while increasing production by 2,400 kg per hectare.



Economic & Environmental Effects of Small Scale Fishers and Fish Farmers

Abilio Da Fonseca

Fisheries and Marine Environment Service (FMES), ETTA

East Timor is nearly surrounded by the sea except for the small land borders it shares with Nusa Tenggara Timor. Unlike the land borders, the sea borders are still very uncertain. As yet East Timor, under the direction of the UN, has not declared its Exclusive Fishing Zone.

With a total coastline of 656.6 kilometres and much of the coast within close vicinity to Indonesia, there is presently a problem of uncontrolled Indonesian activities adversely affecting our fish resources, marine environment and economic well-being.

The problems delaying the declaration of East Timor's exclusive fishing zone will be highlighted by my UN counterpart Mr. Richard Mounsey at the workshop this afternoon. In this session I will concentrate on the activities of inland and small-scale coastal fishers.

In 1999, prior to the unrest, about 20,000 East Timorese were engaged in the seafood industry. Sea fishing had a net production of around 2,600 tonnes and contributed about three million US dollars to the income of the country.

At the same time there were six inland fish hatcheries that supplied fingerling carp to rural households all over East Timor.

Local farmers generally grew the carp, locally known as *Ikan Mas*, to supplement the protein intake of family members. Little accurate data is available on the actual weight of fish grown and consumed but reports from villagers indicate that they are now facing protein deficiencies due to no supply of fingerlings.

From an environmental point of view it is generally believed that the small household ponds had no major impact on the surrounding environment.

The hatcheries were contained in an enclosed environment and the waste discharge water was recycled for agricultural use.

Although these small fish farms did not generate significant sums of money they did play a major role in maintaining the health of the farming communities. In return, the healthy farmers were able to work harder and generate extra income through their cash crops.

Unfortunately in September 1999 the militia destroyed all the hatcheries and the supply of fingerlings was stopped.

A few small operators are now again breeding

Ikan Mas. The amount they can supply is only a small fraction of what is required.

The strategy of the Fisheries and Marine Environment Service (FMES) is to repair and start up the two main ex-government hatcheries at Same and Viqueque. This work has just begun. The Fisheries budget does not allow for the repairs and operations of the other government hatcheries but we will support agencies willing take on this work.

The longer-term plan is to privatise all the government hatcheries because during the Indonesian years all government hatcheries ran at a loss while the private hatcheries made modest profits.

Along the coast the villagers rely more on ocean fish. But in September 1999 militia forces destroyed 90% of the seafood industry. Canoes, engines, nets, lines and traps were piled up and burnt. Fish plants, cold storage facilities and wharfs were destroyed. The industry was totally devastated.

World Bank teams didn't see the need to restore the industry on land or at sea. The ETTA budget of just \$50,000 as yet has not been accessible due to bureaucratic red tape. Without the help of Aid Agencies like AusAID and ICEIDA, and the assistance from the Dili District Administration and Timor Aid, it would have been impossible to kick start this industry. Of course the main people responsible for the gradual recovery are the seafood workers themselves.

With the recovery of certain sectors there are also problems starting to arise. All the weapons left behind after the Indonesian departure meant that bombing of the reefs became a real problem. This now seems to be greatly reduced but small incidents are still being reported. Mostly these incidents involve Indonesian fishermen.

With the rush to help, organisations imported nets to assist the fishermen. Many of these nets were unsuitable and could lead to over fishing of juvenile fish populations.

The biggest problem at the moment facing the coastal fish resource is the potential for over fishing in the Dili area. Dili is where the money is. Most fishermen don't have access to transport or ice (for storing the fish while it is transported). So they come to Dili to fish.

The value of the coastal fish resource within the reach of the canoe fleet will probably remain at around three million US dollars annually if managed correctly.

There should not be any great effort to increase the reef fish catches past the 1998 figures. Increases in catch could result in a total collapse of the fishery. This would lead to not only economic hardship for the communities but also unemployment and health problems.

The Fisheries and Marine Environment Service strategy for the coastal fisheries is to find funding

to start monitoring the stocks, and to set up a market network that reduces waste along the north coast. These networks need to utilise the Hera ice works and the Chinese fishing equipment donation if we are to be successful in getting cheaper transport of fish to Dili and thus discouraging fishing in the Dili area.

A strategy paper is being prepared for Cabinet approval, by the FMES. But little of the work within this paper can be achieved without international support and financial backing.

Economic & Environmental Effects of Offshore Fishing Activities

Richard Mounsey

Fisheries and Marine Environment Service (FMES), ETTA

During the Indonesian occupation of East Timor the fishing grounds managed by the local government were relatively small. One hundred and sixty fisheries officers managed inland waters and a small strip of sea around the coast. The value of marine catches never exceeded three million US dollars and all the government fish operations were run at a loss.

After the unrest in September 1999 and the subsequent establishment of the United Nations Administration in East Timor (UNTAET), the status of the jurisdictional arrangements governing the seas surrounding East Timor became and still are unclear. Prior to this period East Timor was governed as a province of Indonesia (Timor Timur) and had the same laws in regards to the surrounding seas as other Indonesian provinces. Now East Timor must establish its own identity by claiming its rightful territorial waters and develop appropriate laws to manage and control its maritime industries. To do this, consultation between East Timor, Australia, Indonesia and the UN Law of the Sea Authority should begin.

With the help of a donor agency to define East Timor's rightful Exclusive Fishing Zone (EFZ) the country should soon be in a position to declare its EFZ. The estimated increase in fishing grounds will be about 33 times that of the past and control of offshore waters will soon become a national responsibility. The annual catch value, in this expanded area, is expected to be 5 to 10 times higher than the inshore resource. This is based on 25% of what the Indonesians are now estimated to be taking in the area.

These estimates have been calculated on the basis of the number of foreign boats presently

operating on and around the Sahul Banks south of East Timor. In September last year I personally counted 187 vessels fishing in the area. Information from Australia regarding the capture of foreign vessels in the vicinity gives us an insight into the amount of fish being taken.

Most of the vessels on the Sahul Banks are hook, line and trap boats operating around shoals in 100 metres of water. But in October 1999, just after the civil unrest in East Timor, Indonesia opened the area up to trawling. At least 7 large scampi boats are now regularly operating in depths between 200 and 450 metres north of the Banks. Some of the Indian owned trawlers have even transhipped catches taken south of Betano via the Port of Dili. More than two million US dollars worth of scampi were transhipped in the second half of last year.

As well as the seven scampi boats there are approximately 130 stern trawlers permitted to operate in the area. This is an extremely worrying situation.

Most of the fish being caught on the Sahul Banks are from the snapper, emperor and cod families.

The large numbers of trap and line boats operating on the banks are likely to seriously deplete the fish stocks, but on the positive side, these operations normally cause little damage to fish habitats. However, if bottom trawlers begin in the shallower areas it is likely that the fragile coral and sponge environment of the cods and snappers could be lost forever. There is enough evidence available of the disastrous results that arose from uncontrolled trawling during the 1970's on Australia's North West Shelf, which is very close to the area in question.

The Sahul Banks, a multi million dollar resource, need to be protected now!

Unfortunately East Timor is yet to claim its Exclusive Fishing Zone and until this happens there is little that can be done.

Fish stocks on the Sahul Banks, in and outside the area known as the Timor Gap Zone of Cooperation, could be enhanced or endangered by oil and gas drilling. Two platforms are already operating in an area that will become a part of East Timor's Exclusive Fishing Zone and more are planned. For safety reasons all drilling and pumping operations require a no-go zone around them. This plus the planned underwater pipelines to Darwin will cause problems for the fishing industry and increase concerns regarding environmental accidents. On the other hand the platforms will likely act as large artificial reefs and become fish sanctuaries that will play an important role in the future well being of the stocks. Research and monitoring around the rigs will be required.

Closer to East Timor lies the Timor Trench. What's down there in 3,200 metres is anyone's guess and will make interesting future research. What is near the surface is known. Yellowfin tuna, bigeye tuna, swordfish, marlin, sharks, mackerel, skipjack and flying fish are there, and at times, in large quantities. Some of these species are highly

valuable and as such are being regularly fished by foreign vessels.

Both these areas have the potential to support significant East Timorese export industries and need to be defined, declared and managed as soon as possible.

However, no fishery can be effectively managed or properly utilised unless government and industry personnel know the composition of the resource and the sustainable catch rates. If East Timor is to maximise its returns from the sea then it urgently needs to know what sustainable yields can be achieved. This will take longer than one year and will form part of the short to long term government activities once the Exclusive Fishing Zone is declared and funding can be found to support the required research.

As a finishing note you might be interested to know that the Coastal communities of East Timor have for centuries relied on the harvest from the sea. Contrary to the belief of some, many locals are skilled fishers. At least 100 young fishermen have experienced deep-sea fishing in the Pacific Ocean, Indian Ocean and the seas of Indonesia. While on the Island of Atauro a tradition of distant water fishing continues.

Unfortunately we will need more than just good fishers to develop and manage the offshore resources.



Development of Sustainable Fisheries in East Timor

- Summary of Full Paper -

Joeli Veitayaki

Marine Studies Programme, University of South Pacific, Fiji

While fisheries resources in East Timor can be used to aid the reconstruction effort and provide people with opportunities to improve their living conditions, these goals can be attained only if the fisheries resources are sustainably utilised. Sustainable fisheries require that fisheries resources development be pursued differently from what is commonly practiced in coastal communities. The new methods will need to make use of all the information available to address the commonly mentioned issues of fisheries development and propose new approaches, policies and strategies. Components of sustainable fisheries development that will be emphasised in this paper include people and their activities, the ecological setting in which people live and the resources available for their use, level of technology, means of production and necessary institutions.

This is the opportune time to attempt to implement sustainable fisheries development in East Timor. This reconstruction period marks new beginnings in the use of the ideas that are widely discussed but are being slowly introduced into mainstream fisheries development. Some of the themes that will be proposed include the participation of people, the sustainability of development projects, maintenance of healthy fish stocks, promotion of aquaculture as an alternative to capture fisheries, promotion of protected areas and the emphasis on post harvest treatment and marketing.

- While the fisheries resources are important to the rebuilding of the economy of East Timor and the provision of new opportunities to improve people's lives, these goals can be attained only if the development of fisheries is sustainable.
- Main fishing sectors that can be developed include subsistence, artisanal and commercial, industrial, aquaculture and recreational fisheries.
- People are the essence of any form of sustainable development, which needs to be accompanied by economic progress and a reduction in ethnic and social inequalities.
- People must participate in decisions about fisheries development activities if these are to be sustainable.
- The ecological setting is important because sustainable development is dependent on natural resources and environmental endowments that are closely interlinked.
- Natural resource use is potentially sustainable but this requires that the resources are not allowed to deteriorate as a result of use.
- Sustainable fisheries is where the 'level of fishing mortality does not jeopardise the capacity of the fishery to produce the maximum sustainable yield on a continuing basis' (NMFS and NOAA 1997:5)
- Sustainable development must be organised around production levels, methods and use technologies that are clearly understood by the people involved.
- Sustainable development requires the presence of institutional capacity to mobilise the social, political and economic resources of the disadvantaged communities.
- The problems of sustainable fisheries development are caused by factors associated with inappropriate development theories and approaches, diverse living conditions, inefficient development assistance and the conflicting influences of peoples' cultures.
- Restricted resources, capital and limited trained human resources have led to a succession of damaging development mistakes.
- The project cycle should replace existing project design methods that featured top-down and externally driven development approaches.
- The involvement of people in different parts of the country in different development projects should be based on cost effectiveness and other objective criteria.
- Sustainable development needs a carefully coordinated and integrated plan involving all stakeholders.
- An independent Sustainable Development Authority (SDA) should supervise the institution of project cycle approach and the introduction of development projects.
- The people involved in fisheries development projects should be provided comprehensive training and follow-up activities.
- Sustainable development activities should involve the people who are ready to be involved in the development activities.
- Government assistance must be used to provide suitable institutions and infrastructure.
- Private sector involvement must be promoted and emphasised.
- A new system of development funding must be developed to avoid the introduction of unilateral projects and the emphasis on funding periods.
- The new changes proposed here are ideal for this reconstruction period as approaches that are more difficult to introduce in normal circumstances can easily be undertaken under current conditions in East Timor.

Mining and the Environment

Igor O'Neill
Mineral Policy Institute

“We have learnt a lesson and I am saying it loud and clear to the Pacific Island countries to be careful of mining companies” - Sir Michael Somare, Papua New Guinea Mining Minister warns Pacific Island Governments that while mining may appeal as a source of development dollars, there are serious costs that should make governments wary. [p.3, Fiji Daily Post, 8 May 2000] Economic benefits from mining are not as great as expected due to failure to secure taxes for public benefits and environmental and social costs. Local employment from mining is small due to the small workforce, with many of foreign nationals who take money home rather than spending it in-country. Environmental impacts include waste disposal in rivers and oceans – practices that are unacceptable in mining companies home countries such as the USA and Australia. Social impacts due to a boom/bust cash economy can severely disrupt communities, and then leave them with nothing when a mine closes after only a few years. Communities should have the right to allow exploration and mining to proceed only after an Environmental Impact Statement (EIS) is undertaken, and prior, informed consent is gained.

The appeals that make mining and oil projects attractive include: royalty payments and taxes on corporate profits; employment opportunities; and energy self sufficiency.

However, the economic benefits for developing countries are not as great as they should be. A World Bank study of BHP's Ok Tedi mine in PNG found that overall mining had resulted in very small financial benefits for the PNG Government. This was due to loss of public money through corruption, non payment of taxes by companies, and the cost of government subsidised infrastructure to facilitate mining for example for special roads, airports, and power supplies. Mining companies often convince governments to use public money to pay for aerial surveys and geological mapping – effectively a public subsidy of corporate profits.

Employment benefits from mining and oil projects are few, since modern minerals operations use very large scale, high technology machinery, which require very few workers and a high level of technical training. Many of those employed are foreigners with difficult to access qualifications. In fact, a number of mines in the Asia-Pacific utilise a “fly-in, fly-out” work system which means that foreign workers spend their earnings on their rest breaks back home, not in the local economy.

Unfortunately, mineral projects often lead to government greed and violence. Examples are obvious: East Timor's Oil fields – Indonesia's and Australia's collusion; Bougainville copper mine – civil war and mercenaries hired by the PNG Government to secure the mine; Aceh's oil fields and West Papua's gas and gold - both major causes of Indonesian military oppression.

Mining – Environmental and Social risks to avoid:

- Riverine Tailings (mine waste) Disposal – the Ok Tedi and Freeport mines in Papua are examples. Mine waste has destroyed the Ok Tedi River with 70 – 90% of fish gone from the river. The river will take generations to recover – the Managing Director of BHP has stated he “wishes we had never started” the mine.
- Submarine Tailings Disposal (ocean dumping of mine waste), a new mining practice, is causing community outrage in Indonesia as fish stocks decline and human health problems emerge. It is totally unacceptable in mining companies home countries such as the USA and Australia.
- Social risks are largely due to sudden creation of a boom/bust cash economy. This often results in sudden appearance of social inequalities, prostitution, alcohol abuse, and domestic violence, especially towards women. Mining communities in PNG have alarmingly high rates of HIV (AIDS) infection. Communities suddenly plunged into a temporary cash economy tend to lose skills in subsistence agriculture, resorting to store-bought foods and suffer a crisis when the mine ends.

Community Rights:

Mines should not proceed without prior, informed consent of the community, i.e. proper EISs, even for exploration. The community should have the right to veto projects unacceptable to them. Finally, listen to NGOs and communities – many mining companies and governments wish they had listened as concerns they dismissed turn into financial liabilities that last for generations!

East Timor: Mining, Resource Extractive Industries

Alfredo Pires

CNRT- Mines and Energy Source Commission

Introduction

As a new nation, we have the advantage of learning from the mistakes of other nations in failing to protect their environment from mining operations. We need to learn from those negative experiences so we can avoid costly environmental damage. In May 2000 during the Reconstructing East Timor Conference in Tibar it was recommended that East Timor should use Environmentally Friendly Mining Technology - a positive indication that people are aware of the problems relating to mining and the environment. The question of sustainable mining in East Timor needs to be addressed now in order to raise awareness, which will hopefully lead to specific training of East Timorese in sustainable mining well before any mining operations taking place.

Is there a mining industry in East Timor?

In answering this question we need to briefly look at the history of geological exploration in East Timor. Geologically speaking there is still a lot of work to be done in order for us to determine the full potential of East Timor's mining industry. Putting aside Timor Gap or any other offshore mining activity, figures indicate the existence of onshore oil and gas, gold, silver, chromite, bentonite, clay, sandstone, marble, limestone, basalt, silica and a few others. The utilisation of these resources can only occur through mining processes.

What should we consider before mining in East Timor?

When considering extracting anything from the subsurface of East Timor we must look at the economic, social, cultural and environmental impacts. East Timor's environmental, demographic and ethnolinguistic diversity will make sustainable mining very challenging when we start to look at the possible impacts on the environment.

Economic- In terms of economic factors, we need to consider the state of the nations economic health, and also consider other more environmentally friendly options to improve the nations economy. We must maximize the utilisation of mining resources in terms of revenue and employment.

Social – Sudden increase in wealth or income may cause disharmony within a close-knit community. Further, better income will lure

farmers away from traditional jobs. It is also necessary to consider the introduction of foreign workers with different social values.

Cultural - There are many traditional/sacred sites of great cultural value that need to be avoided. There are sites that need to be respected because of massacres that occurred there. Sometimes sacred sites can prevent the most lucrative mining venture from happening.

Environmental - Should we go ahead with a particular mining activity and risk the release of toxic chemicals into the water system? Should we remove a mountain because it is made of top quality marble?

Mining in East Timor will be about striking the optimum balance between the economic, social, cultural and environmental factors.

Environmental Impact Statements (EISs)

We must treat each case individually and demand an EIS.

A good Environmental Impact Statement requires detailed research and data collation. It is time consuming and costly. The community's expectations for the protection and preservation of the environment should be determined and incorporated into the EIS. We must also consider our needs for the supply of raw materials, and our aspirations for a clean, healthy and pleasant environment. Guidelines for EISs and environmental care in mineral exploration should include the following points;

Guidelines for the Preparation of an Environmental Impact Statements;

- Description of the existing environment
- Specific features
- Detailed description of the proposal
- Consideration of alternatives
- Assessment of impacts and safeguards to prevent or minimize impacts
- Requirement for a minimum of two plans, a locality plan at the scale of 1:25 000 and a detailed Mining Plan at the scale of 1: 2000.

Guidelines for Environmental Care in Mineral Exploration;

- Preliminary work
- Reconnaissance exploration
- Drilling Activities

- Other site investigations
- Abandonment of area
- Communication with the local people

Training in Environmental Protection in Mining Operations in East Timor

As we stated in the beginning, certain mining operations may be undertaken in East Timor, for example marble, oil, and gold mining. We therefore need to provide specific training for Timorese in the field of environmental protection for those particular mining operations.

Conclusion

We hope to see our future mining strategies encompassing sustainable development models where economic, social, cultural, and environmental perspectives are taken into consideration.

Mining in East Timor is going to be about improving the welfare of the Timorese people, as well as respect for the natural environment. It should never be looked upon as a guaranteed way of improving the country's economic growth alone. Any mining operation considered to be unsustainable should not be allowed to proceed.

National Vision for Tourism in East Timor



Pedro Lebre
Vila Harmonia

In regards to the National Development Plan for the Tourism Industry, ecotourism is an important feature to be considered. *The aim of eco-tourism is to contribute to ecological and socio-cultural integrity as well as responsibility and sustainability.*

In consideration of this it is expected that a dynamic, diverse, prosperous and mutually supportive tourist industry will be developed, that is based on local community initiatives and is responsive to customers needs, community sensitivity and the environment.

The extent of the success of the tourism industry will depend on structural adjustments and political will of policy makers. Development strategies need to pro-actively support the tourism industry, and provide the necessary direction and conditions for ecologically sustainable development and economic prosperity. In terms of ecotourism, economic gain will be made through the process of natural resource preservation, which is beneficial for both the hosts and guests, and must be based on the criteria of social sustainability, economic viability and ecological capacity.

Objective

Begin the planning process for tourism development by establishing a system of linked village-based tourist service providers.

Action plan

- Formulate an airline policy, and national airline links;
- improve/upgrade basic transportation, communication and accommodation infrastructure;
- conduct village tourism awareness education programs amongst village communities;
- identify complementary tourism services and service providers in regions and establish links between the regions;
- provide training for service providers;
- rehabilitate and restore cultural and historical heritage sites;
- determine priority biodiversity conservation areas for ecotourism development options.

Target groups

Visitors from all market sectors should be targeted by the ecotourism industry, including workers from international government and aid agencies, NGO's, churches, UN, multinational agencies, the business and private sector, as well as recreational travellers and package tourists.

Resources required

A Tourism Planning Team should be established by CNRT to implement the above recommendations.



Developing Sustainable Tourism in East Timor: Some Insights from South East Asia

- Summary of Full Paper -

Professor R. W. (Bill) Carter

University of Queensland, CRC for Sustainable Tourism, and

Vicente Ximenes

University of Queensland, JRETSJLN member

World tourism trends

The World Tourism Organisation reports 664 million tourists travelling in 1999, generating US\$455 billion in receipts, excluding travel fares (US\$93 billion). Tourism has maintained an average growth rate of 7% per year over 50 years. In 1950, only 15 countries enjoyed the economic benefits of tourism. Today, more than 70 countries receive over one million international tourist arrivals. Tourism is the main source of foreign currency for nearly 40% of countries and within the top five earners for nearly 85% of countries.

In 1999, the Asia Pacific region experienced 92 million international tourists. In just 10 years, Laos and Cambodia have achieved tourist arrivals of around 30,000 visitors, while Vietnam has had a seven-fold increase to reach nearly 2 million. Significantly for East Timor, these countries have had a history of civil strife and warfare, yet the growth in tourism has been rapid.

There appears room for new destinations to enter the market and as well as increase receipts per tourist arrival. East Timor cannot ignore this potential. Tourism can gainfully employ a major proportion of the population. It has the potential to become the major source of foreign capital.

If East Timor can attract 100,000 visitors, then tourist expenditures can be expected to be in the order of US\$35-60 million. The number of rooms required would be the equivalent of 6 to 7 small resorts. These projections seem readily achievable and investment risk appears to be low. Such a profile is attractive to off-shore investors (provided security is assured), however they will inevitably siphon-off profits. Tourism will require the involvement of a significant proportion of the Maubere population. This has implications for other industry sectors and demographic distribution, if tourism develops solely around a few coastal centres.

Other South East Asian nations have found tourism growth to be sporadic. In such cases small communities are often not prepared for change, and management of natural resources is insufficient to match increased demand. This leads to socio-cultural and environmental impacts

and local communities often lose control to off-shore investors. A *laissez faire* approach to tourism, including permitting unfettered foreign investment, may realise the economic potential but it will probably also maximise social and cultural impact.

The status of tourism in East Timor

Despite the repeated expression of the desire to make tourism part of East Timor's economic future, international agencies have been unresponsive. Tourism has little or no status at present. Its infrastructure necessities of power, clean water, road access and telecommunications remain unreliable. Most towns still exhibit rubble eyesores of the immediate post-popular consultation days. No attention has been given to training hospitality staff. East Timor's tourism future is suffering from the tyranny of no decision (although ETTA is currently [February 2001] developing programs). However, the prognosis for tourism remains bright: markets exist, waiting to be attracted. The issues that need to be addressed are what form will future tourism take and how can the East Timorese leadership 'accelerate the creation of conditions' to match Maubere aspirations.

Towards Maubere tourism

'Maubere tourism' embraces the concepts of sustainable tourism, ecotourism and best practice cultural tourism, but it will be strongly coloured by the aspirations of the local community and be driven and largely delivered by them. These concepts have been endorsed by CNRT and documented from conferences dedicated to planning East Timor's reconstruction.

Adopted principles for engaging in tourism are:

- develop a product that is different to that of competitors;
- sustainably use natural and cultural resources as the basis for developing tourism products;
- make quality experiences the tourism product;

- provide value for money;
- the Maubere to control presentation of cultural resources;
- involve the community fully in an iterative planning process;
- measure success by client and community satisfaction; and
- plan for steady and predictable tourism growth.

Also adopted are the requirements for:

- tourism planning based on resource inventory and under-written by the principle of sustainability and protection of natural and cultural resources;
- a program of learning through action to raise community skills in preparation for tourism;
- infrastructure services to be upgraded so that the community can host tourism; and
- only tourism projects that directly benefit the community be supported.

Actions that would rapidly assist in establishing practical institutions and increasing human capacity to respond to future tourism initiatives are:

1. establish a national park system, with the support and co-operation of local communities;
2. develop tourism infrastructure, so that tourists can be accommodated, presented with memorable experiences, and appropriately charged for services;
3. improve human capacity, focussed on local communities, to manage resource impacts, provide hospitality services and gain economic

- benefits; and
4. establish cultural rejuvenation programs to revitalise cultural expressions and sustain East Timorese individuality as a people.

Conclusion

Tourism can attract foreign investment, provide considerable employment and aid in achieving a satisfactory balance of trade. It can be a focus for the development of other sustainable economic initiatives and provide incentive for cultural rejuvenation and natural resource protection, as well as promoting peace and stability. Trends suggest that a sustainable tourism industry has low economic risk. However, the benefits will not be realised if tourism development is reactionary. Initially, tourism needs to be regulated to control foreign ownership and give time for local capacity building. Community-based projects are needed to enable tourism to be integrated and to grow within East Timor's changing society, culture, environment and economy.

Tourism policy initiatives have reflected the vision of the East Timorese leadership. However, there has been little on-ground activity. The lack of attention to tourism's potential is short sighted and unresponsive to community interest. Tourism can take a form and develop so rapidly that effective management of impacts will be extremely difficult. Planning and community programs are needed now or East Timor will not be prepared for its next invasion: tourists.



ECONOMY WORKSHOPS

Mining Workshop

Identified Issues: Laws must recognise the rights of local communities; their needs and wants • Laws should consider social, cultural, and environmental factors • People should know about the planned mining before the mine goes ahead • Need transparency and accessibility by the media • Need legislation • Need to know the track record of the company • Will there be training for East Timorese? • The mine should educate local children so that it is eventually them that run the company • How does East Timor keep control of the development? • Need a mining department • Need for community consultation and participation • Need to draft a national policy on mining and then set priorities • Make clear who owns the minerals – the government or the people • Need for Environmental Impact Assessment (EIA) of the mine- people need to be involved in the EIA – those affected, e.g. fishermen • Needs to be a feasibility study • How much of the profits from the mining will the East Timorese Government and the East Timorese people receive? • East Timor’s own experts should assess the mine proposal • The local community should be fully informed before the mine begins • Need for monitoring and enforcement • Guarantee of compensation from the company, e.g. bond

PRIORITY ISSUES	STRATEGIES
Environmental Impact Assessment (EIA)	<ul style="list-style-type: none"> • Need a government department to make sure EIA is done • Make sure law says that mine cannot start until EIA is done • Community/NGOs should be involved to make sure EIA is done, and to review the assessment
Mine Company Accountable	<ul style="list-style-type: none"> • Company should lodge a bond with government • Company should have to give information to local community • Government should set up monitoring and enforcement • Company should meet government costs
Capacity Building by Investors	<ul style="list-style-type: none"> • No time for discussion
Customary Law	<ul style="list-style-type: none"> • Law should recognise the rights of indigenous people and their customary law • Needs to be a system to make sure that local communities get a fair share of the profits • Must be fair compensation
Community Awareness before Mine Exploration	<ul style="list-style-type: none"> • Train the trainers, seminars discussion in community • Company should translate its documents into local language • Community should be given independent information about mine impacts • Give EIA to community • Company should register with government before it gets into community • Community awareness, understanding of participation • Recognition of indigenous rights (including customary laws) • Capacity building by investors • Investors fully accountable • EIA

Agriculture Workshop

Identified Issues: Lack of communication and basic farmer education • Lack of crop diversification • Lack of market opportunities • Lack of agricultural training • Lack of organisational structures • Lack of government policies • Loss of traditional methods of organic farming • Lack of government support for local produce • Lack of specific agricultural education • Slash and burn farming • Lack of funds for local agricultural training • Lack of scientific evaluation of farming methods • Lack of micro-credit for small farmers • Lack of bottom-up planning • Need modern science to investigate useful traditional farming methods • Need for coherent policy on slash and burn agriculture and recognition of the threat it is to infrastructure • Lack of irrigation policy • Farmers don’t understand organic farming • Shouldn’t accept World Bank policy on
(Continued on next page)

agriculture •Assumption that organic farming is best •Lack of staff •Need for self-sufficiency •Poor transport and distribution network •Low farmer income •Damage from militia and Indonesian occupation •Need for adaptive trials before spreading methods and to get farmer support •Need for science teachers and equipment in schools •Agricultural extension workers who understand traditional knowledge and modern methods as two-way communication •Lack of clear boundaries for tenure •Need for land zoning policy •Food security needs a reliable source of seed and a good distribution network.

PRIORITY ISSUES	STRATEGIES
The Need for bottom-up planning	<ul style="list-style-type: none"> • A need for a system of planning from the bottom (farmers unions, groups of farmers who have interests) • Need for a representative of farmers and cattle farmers in parliament and government to fight for the interests of farmers and cattle farmers • Training for farming communities to make bottom-up decisions and representatives. • There is a need for work networks between farming groups for actual information on development • There needs to be work partners for farmers and cattle farmers (businessmen, research facilities, universities, banks and government)
Lack of communication and basic farmer education	<ul style="list-style-type: none"> • Need to develop clear policy direction on agriculture • Appointment of extension officers to coordinate the implementation of the policy • Funding to re-establish agricultural extension services including; housing, accommodation, basic infrastructure, transportation, communications, training, instruments of information like brochures and leaflets, marketing systems
Lack of government resources	<ul style="list-style-type: none"> • Government has to decide how it will deal with a free market economy • Agriculture department should suggest policies based on expressed needs of farmers • Schemes similar to the Community Empowerment Program of the World Bank need to be used to get information from grassroots elected village committees (voluntary) • Government should support and listen to NGOs working with the grassroots • Establish a training program across East Timor explaining different types of farming with demonstrations and evaluation. Learning from positive local and international experiences • Use young people from agricultural school to do the training • Contact former agricultural staff to conduct short-term training projects (UNTAET has list of all graduates) • Many will do this voluntarily if they can see positive results come from their efforts that are good for the environment • International support for organic farming initiatives means export opportunities • Develop a slash and burn policy • Logistical, technical and direction support from Government • 10 year moratorium on introduction of any genetically engineered plant or animal material into East Timor • Any major infrastructure projects need a thorough impact assessment, both environmental and social
Need a Policy for land zoning	<ul style="list-style-type: none"> • Recognise ownership • Proof of ownership – proper land-titling system • Consultation with village heads/leaders – is it government or community land? • Establish a government land office • Formation of technical group for land characterisation, land mapping and establishment of a Geographic Information System (GIS) • Zoning should be done by the government in consultation with the community



Fisheries Workshop

Identified Issues: Exclusive Fishing Zone (EFZ) undefined •Ensure East Timor gains benefit from resource (fishery) exploitation •Build domestic fishing capacity •Equitable division of fishery areas (within EFZ) •Fisheries education • No fisheries policy •No legislation • Absence of data and Information • Enforcement • Protect domestic industry from imports.

PRIORITY ISSUES	STRATEGIES
Building Domestic Fishing	<ul style="list-style-type: none"> • Education and training • Provide equipment (nets, lines, boats) • Quality control • Marketing • Infrastructure (storage, processing, transport) • Offshore training and employment
Ensure East Timor Gains The Benefits	<ul style="list-style-type: none"> • Develop Fisheries Policy • East Timorese involvement in all aspects of fisheries; Planning, Fishing and Management • Sell licences • Ensure offloading in East Timor • Seek local community employment/training etc. • Community fishing education, training for subsistence fishing • Avoid bad practices • Ensure regulatory enforcement
EFZ Undefined	<p>Prepare EFZ Maps</p> <ol style="list-style-type: none"> 1) Independent Body With National Observers (Australian, East Timorese and Indonesian) 2) Resources Memorandum of Understanding (MOU) <ul style="list-style-type: none"> • Negotiate and make lines explicit

Industry, Trade & Globalisation Workshop

Identified Issues: Low price of coffee •Capacity building •Community development •Coffee marketing •Sustainability standard international/national •Quality awareness •Certification •Globalisation •What steps to enter world markets in this era of free trade? •Unpreparedness of industry for competition •No coffee export/import policies •Local security •Coconuts and candlenuts, is there a market? •Imports and lack of local opportunity •Free trade •Currency.

PRIORITY ISSUES	STRATEGIES
Competition & Industry	<ul style="list-style-type: none"> • Increase exports by raising the quality of products in the country and decrease imports • Form an association to open networks with competitors • Create small scale national and local industries in order to compete.
Community Development & Education	<ul style="list-style-type: none"> • Active participation of the community • Information • Education system
Coffee, Sandlewood & Cocunts	<ul style="list-style-type: none"> • Transitional administration to immediately end the coffee buying monopoly of one company in East Timor • Promote Timorese coffee as a commodity to the world market place • Transitional administration to provide opportunities for foreign investment in the candlewood and coconut industries
Trade	<ul style="list-style-type: none"> • Create an East Timor Trade representative body. • Must create its own currency. • Countries exporting to East Timor must observe human, labour, environmental and civil rights. • Get the rupiah out of East Timor.

Tourism Workshop

Identified Issues: Political instability •Lack of infrastructure (waste, roads etc) • Prioritise infrastructure for Timorese •Understanding of potential •Lack of successful models • Lack of attractions •Training/capacity building •Government policy – strategic planning •Lack of UNTAET attention • Lack of information/data-base •Lack of investment policy •Land tenure issues •Lack of confidence of locals in their 'product' • Language difficulties •Intercultural challenges •Environmental damage •Local involvement • Planning industry itself •Health issues •Tourism concepts •Problems of 'mass tourism' (culture, infrastructure, environment) •Socio-cultural challenges (commercialisation) • Which market to access •Lack of marketing/imaging (promotion) • Malae damaging tourism resource now (sites, environment, culture) •Dangers of tourism •Perception East Timor is unsafe •CHOICES: Instability; Policy etc (strategic planning/problems of 'mass tourism'); Infrastructure; Cultural challenges; Training/capacity building.

PRIORITY ISSUES	STRATEGIES
Political Instability	<ul style="list-style-type: none"> • Single clear structure of government (is now confusing) • Fix economy (leads to less political instability and other problems) • Politicise community (increase political awareness) • Improve education system • Empowerment/responsibility of civil society • UNTAET out of governing role and into advisory role (East Timor to self govern)
Governance	<ul style="list-style-type: none"> • UNTAET not in governance role – advisory role only • More power to East Timorese to self govern • Empowerment of East Timorese and civil society • Process of 'Timorisation' - too slow and not efficient • not necessary or successful • Timorese not empowered in work – low skilled menial work • Lack of experience in decision making – leadership, administration etc • Tourism will happen despite all the above, the question is in what form and who controls it
Infrastructure (lack of)	<ul style="list-style-type: none"> • Address needs of local population first • Lack of tourism • Training and capacity building
Cultural Challenges	<ul style="list-style-type: none"> • Need for community awareness/education to stress value of East Timorese culture • Encourage people to be proud of being East Timorese





Technology and Environment

Joao Carrascalao

Cabinet Member for Infrastructure, ETTA

Thank you for the invitation to speak.

To refresh our minds—what is Sustainable Development?

“Development is sustainable if it meets the needs (economic, social and environmental) of the present without compromising the ability of the future generations to meet their own needs”.

As per the report of the World Commission on Environment and Development “Our Common Future” (1987).

- Hence, essentially we must replenish/substitute whatever we degrade/destroy in nature in the interest of our economic development and livelihood so that our children and grand children are not deprived of their fair share of nature. Furthermore, our endeavors to improve our standards of living must not disturb the harmony in the natural world and ecological balance.
- East Timor must develop an integrated sustainable development strategy in which sustainable economic development will be based upon sustainable infrastructure while reversing the environmental degradation and conserving natural resources for future generations.
- Conserving natural resources in East Timor is indispensable since no attention has been paid to this aspect throughout the last few centuries.
- It is also essential that we address the issue of sustainable development not only in the context of environment but along with poverty, hunger, disease and illiteracy so that environment does not get disproportionate attention to the detriment of other essential issues for improving our society. This is particularly true for East Timor. Hence there has to be a balance regarding our funding of all the above mentioned factors and inter-sectoral priorities.
- As Cabinet Member for Infrastructure, I am fully conscious of applying sustainable development principles with regard to environment in everything my Department plans and executes.

Infrastructure and Environment

Infrastructure and the environment are

interrelated. For instance, whenever a road is constructed, it results in deforestation, excavation/erosion of soil and siltation of streams and rivers.

Similarly, construction of an airport results in displacement of communities, disturbance to natural habitats and serious noise pollution. Construction of a port disturbs marine life, leads to pollution of the sea from shipping and affects traditional methods of earning livelihoods by coastal communities. Power stations cause noise pollution and dispose of oil and lubricants which pollute underground water. In the field of sanitation, disposal of waste without polluting streams and rivers is a serious concern. Maintaining the supply of hygienic and potable water to the population is a big challenge in view of constant pollution from a number of sources.

Whereas, I will enunciate a comprehensive policy in due course, I wish to share with you certain measures that I have in mind to prevent the following ill effects in the field of infrastructure.

Examples of problems and →mitigating solutions

- Soil Erosion: →Planting grass/trees.
- Siltation of riverbeds by soil material and waste: →Identification of appropriate dumping sites.
- Sudden change in the means of livelihood of affected communities: →Relocation facilities and establishment of alternative industries. Policy on Involuntary Re-settlement.
- Endangering wildlife/habitat characteristics: →Reconsider alignment, if possible including economic.
- Noise pollution from construction equipment during construction period: → Legislation and use of noise barriers.
- Pollution from vehicle exhausts: →Set proper emissions standards by law.
- Emission from Thermal Power Plants: →Set proper emissions standards by law.

Policies to be developed

A National Sustainable Development Strategy for East Timor and national environmental laws need to be developed. Policies need to be in place



to ensure that Environmental Impact Assessments are undertaken simultaneously with feasibility studies for infrastructure projects. Data management for effective environmental planning and management is also crucial. An appropriate policy needs to be developed on Involuntary Resettlement.

Cost of Environmental Protection

East Timor has limited funds. We do not have enough money for infrastructure and many other urgent needs of our society. While environment protection is important, here too we will have limited funding.

Citizens and NGOs must support and undertake measures for environmental protection, as government cannot do everything.

Experience of Pacific Island Nations

I would like to interact with Pacific Island

Nations to learn from their experiences of building infrastructure without damaging the environment and with limited funds available to the State.

Indigenous Solutions

While we will study the ideas proposed by the international community, East Timor should develop indigenous solutions consistent with its culture.

Conference Recommendations and Task Force

I am looking forward to the final tangible and feasible recommendations of this Conference and I would certainly be happy to nominate one of my officers to represent the Infrastructure Department on the proposed Task Force on Sustainable Development.

Considerations Towards Sustainable Infrastructure Development in Urban Areas



*Jonas Rabinovitch, Senior Policy Adviser
Urban Development Bureau for Development Policy (BDP), UNDP*

This paper outlines the infrastructure conditions in East Timor, taking into consideration the pre-crisis situation and the post-crisis conditions. The main challenge is to improve infrastructure services in a sustainable manner, from a people-centred perspective. Given the special conditions in East Timor, the response to current infrastructure challenges should consider the urgent need to re-think conventional approaches. This presentation will outline the infrastructure situation in East Timor, key issues, possible approaches to be considered and opportunities for improvement.

This paper refers to infrastructure not only from the purely "hardware" perspective but also from a "software" people-centered perspective. In a broad sense, infrastructure is generally related to housing, transport, water, sanitation, drainage, waste management, communications, roads, and other aspects.

The deficient conditions of infrastructure in East Timor were made even worse by the recent crisis in September 1999 when anti-independence militia promoted violence, looting and arson throughout the entire country, as is well known.

It is estimated that some 85,000 to 90,000 houses were damaged or destroyed during the crisis. In urban areas the rate of destruction was between 70% and 100% of the housing stock. Before the crisis, 52% of households had no access

to clean drinking water and 62% had no access to sanitation facilities. This situation was made worse as the water supply and sanitation systems were not spared from destruction during the crisis. For example, pumps, vehicles, treatment plants, offices and pipelines were severely damaged.

An overview of the latest figures available in the Common Country Assessment, recently prepared by the various UN agencies operating in East Timor, makes it clear that the pre-crisis infrastructure conditions were far from desirable, but were made acutely worse by the events in September 1999. The current situation indicates a lack of both hardware (physical facilities and equipment), software (education, local capacity for operation and maintenance, governance and institutional development) and, of course, a need for considerable levels of investment expected to be generated from the international community. This paper argues, however, that the infrastructure problems of East Timor will not be solved in a sustainable manner if the question of funding for hardware is developed independently from the human "software" considerations discussed above.

Challenges

The main challenges to be considered when developing infrastructure in a more sustainable



manner are outlined below.

Institutional Challenges

What institutions will be responsible for managing and operating infrastructure facilities?

Capacity Building Challenges

Are there enough trained persons to run the system? Who will be trained and how?

Technology Choice and Affordability, Investment, Technology Choice and Cost-Recovery Challenges

What technological solutions could be considered financially, environmentally and socially sustainable? Are they affordable? How will the systems be paid for? Could user-fees be promoted?

Participation Challenges

Are communities being involved in designing, building and operating the system?

Gender Challenges

How will the interventions affect men and women differently?

Education and Cultural Challenges

Are infrastructure interventions designed with

a view to cultural habits? Do people understand the health benefits involved? What type of education campaigns are needed?

Towards a Sustainable Path

Possible approaches towards a sustainable and appropriate path are:

- Reference to case studies from developing countries, including Curitiba in Brazil where a sustainable environmental policy and public transport system have been progressively implemented during the past 30 years;
- Labour-based approaches;
- Land use considerations;
- Development of buffer zones for environmental protection in urban areas;
- Protection of river bottom valleys and springs;
- Rural-urban relations;
- Waste management and recycling;
- Eco-sanitation;
- Urban Agriculture;
- Public transport.

A New Sustainable Architecture For East Timor

*David Baggs, Gareth Cole and Tony Edye
Ecological Architects Association (Australia)*

A unique opportunity exists in East Timor for establishing a sustainable, ecologically based economy as a foundation for reconstruction of housing and infrastructure. Damaged and destroyed buildings and infrastructure provide the opportunity to start over again. Combining traditional and innovative design, materials and methods of construction can create a new Sustainable Architecture for East Timor.

Any new building or infrastructure projects should be and can be designed for sustainability from both an ecological and social perspective.

Infrastructure and Sustainability:

This paper will address sustainability from two directions, as follows:

1. An outline of significant issues that need to be addressed to achieve ecological and social sustainability as relevant to development in both urban and village contexts; and
2. Policies needed for the implementation of sustainability practices in East Timor.

Available technologies, systems and designs for buildings and infrastructure to be constructed and/or altered to achieve ecological sustainability will be outlined.

Sustainable Development Issues

To achieve sustainability, the following issues need to be addressed:

- Education in relation to all aspects of environmental and personal sustainability;
- The facilitation of improved climatic and culturally sensitive design using hybrid contemporary and traditional technology and construction;
- water conservation and re-use – capture and preservation of potable water, channelling and piping stormwater flows, education about the safety of rainwater;
- waste management – including recycling, re-use and sewage treatment;
- reducing the environmental impacts of transport;
- increasing use of renewable energy resources – sun, wind, water;
- increasing energy efficiency in all energy consuming activities; including
- maximising use of renewable resources e.g. indigenous/traditional materials and methods and increasing efficiency of use of non-renewable resources;

- maximising eco-efficiency and accessibility of community services and infrastructure – water, electricity, sewerage, telephone, gas, roads, bridges, tunnels;
- changing designs of housing solutions to make use of natural, healthy, climatically sensitive and sustainable materials.

Sustainable and Innovative Materials and Technologies

Traditional materials and building techniques have been developed in response to sustainability concerns over generations. Many have been discarded or adapted in some areas due to various colonial or other influences. Not all of these changes have been beneficial. Many East Timorese report how hot and uncomfortable 'modern' homes are. A new Sustainable East Timorese Architecture is needed; one that blends the best of both contemporary and traditional materials and design from a comfort, health and ecological point of view but that is affordable.

Is there support in East Timor to try to take a jump ahead of the 'developed world' to use the best of sustainable techniques from around the world and adapt them to suit East Timor?

Sustainability Example 1: Roof Water Use:

While some cultural and health issues are involved in moving towards extending potable water supplies by roof catchment, it seems a good idea to explore other building related issues to catchment and storage of potable water.

To enable water catchment, impervious material is needed. While an obvious solution, steel sheet needs to be insulated if occupants are not to be baked and such insulation demands a roof cavity and vermin proofing. Steel as a solution is quick but inappropriate.

Technology proven in Latin America could be adapted to East Timor to provide villagers with a corrugated sandwich of 'bio-composite ferrocement' where thin sheets of bamboo reinforced cement encapsulates say, thatch matting to form a waterproof, insulated, self-supporting roof structure that would allow water catchment.

Solutions to the cultural aversion to rainwater use that seems to have been entrenched by the Indonesians need to be investigated. Such systems might involve underground storage of rainwater in clean, sand-filtered tanks that are purified biologically and cool enough to remain potable.

Sustainability Example 2: Renewable Structural Materials:

Facilitating East Timorese in "Growing their

Own Homes"

While in the short-term it is likely that square-sawn timber will need to be imported to overcome the immediate re-roofing and re-building requirements, consideration should be given to expanding the access of the entire East Timorese community to indigenous building material resource species.

One of the fastest growing timber resources available is bamboo. Local studies and traditional practices have identified an indigenous East Timorese bamboo that grows up to 200mm in diameter with wall thicknesses up to 15mm, albeit with a limited geographical distribution. The potential for the use of bamboo suitable for major structural loads could be highly advantageous given such bamboos mature to structural size (+100mm) and capacity in as little as 4 years. With large areas devoid of forest cover structural bamboo could hold much promise as well as providing significant potential as a food source and export.

The suitability for expansion of the availability of this and other building material resource species needs to be researched. A program is required to:

- identify the climatic/geographic suitability of the various species for widespread distribution to climatically suitable nurseries to be operated by the community within villages;
- establish the most suitable way to preserve (particularly bamboo) from insect attack;
- expand the educational opportunities of the community in the use of traditional materials.

Sustainability Example 3: Natural Systems-based Toilets:

Western society is waking up to the health and environmental benefits of using human waste instead of allowing it to contaminate soil and groundwater by using pit or septic toilets. Research is required to select systems that use human waste as an input to a natural biological cycle producing healthy usable resources. Such systems:

- can be built with low-cost, indigenous materials and labour;
- require minimal education and training for successful, sanitary use;
- can be sanitary and do not promote disease;
- allow the re-cycling of nutrients from human faeces;
- protect the environment by allowing recycling of nutrients and water;
- improve public health by effectively containing and killing micro-organisms.



Power Sources: 'Thinking out loud'

In thinking about the energy resources available for East Timor, the Timor Gap oil and gas fields are the obvious ones for exploitation. In terms of sustainability, greenhouse and carbon credits, would it be better to leave the oil in the ground for future use as a chemical resource rather than as a fossil fuel. Is the potential use of the gas sparingly in fuel cells to produce clean electricity relevant, given the technological requirements of such technology?

This is a highly charged political issue which East Timor is currently debating with Australia but it goes to the heart of the philosophical approach to sustainability under the present circumstances.

Australian organisations such as APACE have had significant success in the Solomon Islands introducing micro-hydro systems into rural villages. Is micro-hydro and the attendant maintenance education program relevant to East Timor? Such systems are relatively low cost and low maintenance and can provide power for up to 20 homes and small scale industry. Are there sufficient wind and human resources for wind power to be viable particularly in mountain areas?

While photovoltaics might not be suitable for village use, are they relevant for use in urban contexts? Where commercial interests are involved with external funding, is it relevant from a policy point of view to require a minimum input from sustainable energy sources?

Policies for the Implementation of Sustainable Development

Effective policy will address minimum building design, construction and servicing requirements of commercial, urban and village buildings.

Issues which might be considered include:

- how to assess sustainability – e.g. using 'The Natural Step Institute of Australia' Sustainability System Conditions framework, establishing environmental and social quality indicators and benchmarks;
- conventional Town Planning issues such as building height, bulk, scale, setbacks, site coverage;
- overall design aesthetic and cultural contexts;
- use of traditional materials and methods;
- energy efficiency, including insulation, window area, shading, colour, natural ventilation and lighting;
- landscaping standards and permaculture concepts;
- renewable energy systems and sources;
- ventilation corridors, solar access;

- potable water supply and conservation;
- waste management and treatment;
- community consultation;
- decision making by consensus (normal in East Timor);
- dispute resolution procedures.

Common to all policy is the need to engage the community's input in relevant ways depending on the type and sensitivity of each development proposal. True sustainability will depend as much on cultural and social sustainability as ecological sustainability. East Timor has a strong tradition of consensus and conciliation which should be entrenched in any policy. Dispute resolution procedures are also required in the event that consensus is not reached.

It is important that significant emphasis be placed on determining community expectations and work to incorporate traditional and indigenous materials and cultural expectations. The development of a vision for how East Timor might develop is critical, i.e. unbridled western development or a sensitive traditional sustainable architectural aesthetic? What would a cohesive East Timorese urban or village aesthetic look (or continue to look) like?

- Western style glass, steel and concrete buildings or traditional designs and materials blended sensitively with these and other appropriate, innovative ecologically-sensitive materials?
- traffic snarled or maintaining and expanding pedestrian/market precincts?
- low rise continued?
- polluted or pristine?

A Sustainable Economic Model for East Timor?

In establishing a new economy, ETTA will likely give careful consideration to establishing a National Economy model and reporting process. Western economies have adopted economic models that count environmental issues as externalities. Such faulty models are at the core of the environmental problems in all western and emerging economies. Is it possible with a country such as East Timor to appropriate an economic model that details environmentally destructive practices as an economical cost instead of income? Such models exist – this is an opportunity to get the East Timorese economy ahead of the 'Developed Economies' – is it practical or possible? This needs to be explored and recognition given to the obvious conclusion – if it is not done in the first stages of establishing the economic structure of the new East Timor Government it is unlikely that it will ever happen.



Appropriate and Sustainable Energy for East Timor

Phillip Calais

Environmental Technology Centre, Murdoch University, Perth, Western Australia

Energy is the life-blood of society and like blood, it is usually taken for granted and often only of concern when there is not enough to sustain the living standards that we aspire to.

However unlike blood, there are many different types of energy sources, each with specific applications and their own special advantages and disadvantages. While oil, gas and coal have a number of advantages such as their often easy availability, low cost and flexible and wide-ranging applications, these fuels also have a number of severe disadvantages. These include the difficulty, expense and huge resources required for their exploration, extraction and processing, making these processes the domain of large multi-national institutions. Furthermore, there are only limited oil, gas and coal resources available and the use of these fossil fuels are effecting the Earth's environment, both on a local scale due to mining activities, spills and exhaust fumes and on a global scale from problems such as climate change.

Undoubtedly, the exploration and extraction of oil and gas from the Timor Sea will assist East Timor to gain financial, as well as political independence. However in many of the more remote parts of East Timor, where the transport of fuel is a problem, and indeed throughout the whole of East Timor, the goal should be to develop sustainable and ecologically benign forms of energy.

As a part of the solution to East Timor's sustainable energy needs, renewable energy, together with an integrated energy policy, can play a major role. As well as providing the people of East Timor with an ecologically sound and sustainable form of energy, the small scale and distributed use of solar, wind, water and biomass energy can also promote personal independence in a democratic environment.

An example of an appropriate application of renewable energy is the use of 'solar home systems'. These are small and relatively cheap solar energy systems, typically consisting of one or two photovoltaic modules (solar panels), together with a deep-cycle battery and battery charge controller and possibly a small inverter which converts the low voltage DC electricity into mains high voltage AC electricity. Such a system can be quickly and easily installed in remote mountain villages and will provide enough

energy to operate lights, radios and a few other small appliances for a single household.

Larger systems can provide enough energy to run larger appliances such as refrigerators and computers and so are very valuable for medical clinics, schools and small offices.

Scaled up even more, systems can be installed, often in combination with a diesel generator or a wind turbine that will provide enough electricity to run the whole community.

The sun can also be used to provide hot water using solar water heaters. These systems are effective and can be made locally quite easily and cheaply.

Having only recently arrived in East Timor, I am not sure whether or not the use of wind energy is a viable option here as many tropical places have the extremes of very calm conditions punctuated with violent tropical cyclones, both of which are not very favourable to wind energy systems. However, this is a matter that needs to be examined and it may prove that East Timor is suitable for wind energy.

Running water is another option and the many mountain streams in East Timor provide ideal opportunities to generate electricity from this source. Once again, small, medium and large systems could be built in remote areas to provide electricity for basic services.

Tidal power may be an option in the coastal regions. The last few years have seen rapid progress being made in this area of electricity generation. In the north west of Western Australia, a medium sized tidal power plant is to be built which will provide electricity to remote tropical towns.

Another form of renewable energy is biomass - using plants and plant products as an energy source. Perhaps the most common example of this is simply to collect and burn firewood, but there are many other uses of biomass.

One that may be suitable for use in East Timor is the use of plant oils such as coconut oil and palm oil, both of which are suitable for production here. Some plant oils, notably coconut, can be used as a substitute for diesel fuel and can be used both in vehicles, for lighting and to generate electricity. I recently learnt that for over one hundred years, a lighthouse on the south-west coast of Western Australia operated using coconut and palm oil.

Biodiesel, a synthetic diesel fuel made from new or used vegetable oil, is available in many European countries and when I return to Australia I intend to run my new car on home-made biodiesel.

Biomass is a very versatile energy source and many forms can also be used in furnaces to generate heat that is then used to produce electricity. In many of the tropical parts of Northern Australia, sugarcane waste is used as a major energy resource.

As with all technologies, there are always problems and other factors that must be considered when they are used. No technology is completely value neutral and even the use of renewable energy may have some negative effects on society and the environment. Many forested areas have been denuded as trees are felled for firewood and many communities, heritage and ecosystems have been destroyed as a result of unwise or inconsiderate placement of dams.

A renewable energy source is only renewable

and sustainable if it is allowed to be so.

Unfortunately, due to the limitation in time, I am unable to go into detail about any of these technologies so I will just finish off by saying that the use of these sustainable technologies can only come about if there is a dedicated and open minded group of people who are willing to examine these issues and to develop ideas that are integrated into a progressive and coherent set of practical policies.

I would like to say that this has occurred in Australia. Unfortunately I can't. I implore the people of East Timor to carefully examine the policies of your neighbours so that you may not only avoid the pitfalls and traps but also extract the components from these policies that are useful for you so that you can develop a new, sustainable and democratic society.

For many years, the people of East Timor struggled for political independence. Let us also struggle for East Timor's independence in matters of energy, food, water, shelter and all other needs.

Solar Energy and Sustainability

Frank Gnanam

Regional Business Manager - Rural Infrastructure, BP Solar, Australia

The solar business has come a long way from being a technology developed for space applications. We have come down to earth and solar technology is now installed throughout the world on commercial buildings, homes and even petrol stations, which are connected to the electricity grid. Solar is an integral part of the rural development of nations throughout Asia and the Pacific. Solar is important for the re-development of East Timor.

Solar provides a unique benefit - clean energy at the point of demand. It has no emissions or noise, requires no fuelling and minimal service and maintenance. Solar systems are modular in construction and are infinitely scaleable. They are stand-alone systems, independent of the electricity grid.

BP Solar's experience in rural development projects demonstrates that solar is truly a life-changing tool. Rather than a source of electricity, we think of solar as enabling technology delivering clean water to communities, improving health facilities to remote locations and providing educational tools to rural schools.

No matter where you are in the world, everyone requires clean water, health facilities and education. These basic human needs are a prerequisite for development.

Currently in Malaysia, we are involved in a

long term partnership with the Malaysian Government to deploy thousands of solar systems for rural homes and health clinics. This six year Project has dramatically improved the health, well-being and social standard of living of the affected rural communities.

In the Philippines we provided a wide variety of solar systems to island communities. By pumping clean water into the villages, families saved hours of walking each day to collect water from the nearest river. Health services and facilities were improved by providing vaccine fridges and power for the rural health centres or hospitals. School attendances increased by 300% when the government's daily educational programs were shown on solar powered TV & video systems which were provided to the rural schools.

As a picture tells a thousand words, I'd like to screen a short video to show you some of these systems and you can judge for yourself whether solar is appropriate for East Timor.

In conclusion, my friends, BP Solar is here to play an important role in the re-construction of East Timor, IF you will allow us to. All we ask of you today is that favourable consideration is given to the appropriateness of solar technology for East Timor.

Waste Management in East Timor

Jose Mestre

Water and Sanitation Unit, ETTA

The Waste Management System is one of the major issues for sustainable development in East Timor. This presentation will touch on several topics including; the general condition of waste management after the referendum, the current state and effects of waste management, the steps in the waste management process and programs that need to be implemented.

Overview

The referendum on the 30th of August 1999 was followed by an explosion of violence that resulted in widespread destruction and burning and wholesale looting of possessions belonging to both individuals and the state. At that moment, all government activities serving the people ceased to function, especially in the area of waste management. There has been a bad situation from that time until now in East Timor due to the piles of rubbish everywhere. The type of rubbish that is produced by society is mainly the residue from burning waste. There is no management of waste and no waste removal. This causes unhealthy environmental conditions, both in the bustling centre of the city and on the outskirts of the city. The lack of waste management services is one of the realities in East Timor today.

The current waste management situation

East Timor has a village characteristic even in the centre of the city, so that the majority of rubbish is leaves. Such waste is generally thrown into people's backyards and burnt, a less than desirable situation that causes health problems. Leftover food scraps are fed to domestic animals and leftover food that cannot be fed to animals is buried in the garden or burned along with other rubbish.

One issue requiring attention now in East Timor is the large temporary population of international workers who produce rubbish from consumption of imported goods.

It can be concluded that the general situation in East Timor now demands immediate, short term solutions, both in terms of identifying an institution as the responsible regulator of rubbish, and also in creating a flow of information in order to inform society so that society also takes a role in waste management.

Impacts

The waste management situation in East Timor means that people are directly affected in terms of both environmental and individual health. There are several environmental effects that we are now being experienced, especially in Dili, including;

- Air pollution, resulting from rotting rubbish,
- Flooding resulting from drains that have been blocked by rubbish, and
- Rubbish becomes the breeding place of disease vectors; flies, mice and cockroaches.

Such environmental problems can result in spread of diseases such as diarrhoea, typhoid, gastroenteritis, dengue fever, and malaria.

The Waste Management System

If viewed from a viewpoint of technical operations, waste management comprises each step from the provision of storage facilities, to the final disposal of waste. Waste operations must be integrated, because each process cannot stand on its own— each influences the other.

Programs that need to be implemented

Long term program

In the long term, facilities need to be developed to ensure environmental health. A rubbish division system (*daur ulang*) needs to be introduced to reduce the amount of rubbish and a community inclusive waste management program should be developed. These requirements can be met by education and capacity building for the general community, and by the development of laws and regulations for waste management in East Timor.

Short term Program

- 1) Implement a clear organisational structure for managing rubbish in each area.
- 2) Organise training courses for technical and administrative staff.
- 3) Organise a pilot study in order to define and plan implementable projects.
- 4) Create projects for:
 - An environmental cleanliness system;
 - A waste storage system;
 - A system for the collection and transport of waste;
 - A system for the management of final disposal areas.

Wastewater Management in East Timor

Sharad Adhikary

World Health Organisation (WHO) Consultant on Environmental Health

Background

A health profile of East Timor prepared in 1998 showed that 52% of the population did not have access to the safe drinking water, and 62% of the population did not have access to sanitary disposal of human waste. A survey of water and sanitation services found that there is a low level of knowledge among the people of the importance of safe drinking water and sanitation for good health.

Urban and rural sanitation needs are always different and they should be viewed separately. On-site sanitation technology can provide appropriate and affordable means of sanitation to the households in rural communities of East Timor while a sewerage system seems to be a single option for collective disposal of wastewater in the city of Dili, which has gathered a lot of potential for rapid urbanisation and increased wastewater generation in the near future. On-site sanitation facilities in the congested urban areas may have different problems with the limited land available for collection or disposal of waste, contamination of the water points in close proximity to the toilets, effluent overflowing freely to the surface drains and the inadequacy of the system for increasing daily use.

Health Concerns of Wastewater

Wastewater is generated from a variety of domestic, industrial and institutional activities. The flow of uncontrolled or unconfined wastewater may pollute the surface or ground water where it is also being used for drinking purposes. Faecal contamination of drinking water, which is generally due to open defecation and the uncontrolled flow of wastewater, is responsible for several bacterial, viral, protozoan and parasitic infections and communication of diseases such as diarrhoea, dysentery, cholera, giardiasis and enteric fever. The *Culex pipiens* mosquito, the vector of filariasis, usually breeds in sewage water.

Rural Sanitation

Pit latrines or septic tanks are generally built in rural settlements, however, around one third of the people in East Timor are still practicing open defecation. Around 15% of the population use public or shared toilets. Most of the toilets

constructed by the international agencies have not been greatly accepted by local people.

It is necessary to develop and promote a range of options for on-site sanitation that would be appropriate to the varying site conditions in different rural communities, as well as being acceptable and affordable to the people. Depending upon affordability, latrines with single or double-pits with offset pour-flush facilities would be most suitable for high land areas. Pit linings may be necessary. A soakpit or a drainage trench to digest the effluent overflowing from the tanks should always follow construction of septic tanks. In low land areas with shallow groundwater tables, raised pit latrines should be promoted and groundwater should be monitored for contamination. A separate soakpit or trench can also be built as a drain for household grey water.

Hygiene education programs can help to motivate people to build and use their own latrines. A "people centred" approach to planning and implementation of sanitation programs involving community participation will help greatly to raise demand for sanitation and ensure full acceptance, support and effective use by the public of the systems built. A large number of local and international NGOs are working in East Timor. Networking at central and district levels with NGOs working for water supply and sanitation can enhance the coordination of NGOs and government. Various awareness, education and training programs for the promotion of hygiene and sanitation could be effectively developed and conducted in the communities through the initiation and support from those NGOs.

Wastewater Management in Dili

Dili has great potential for rapid growth and development in the near future as it will be the capital city of the new nation of East Timor. It may attract a lot of people migrating from different parts of East Timor.

There is currently no sewerage system in Dili and even the modern houses have septic tanks. Pit latrines in low lying areas and septic tanks without soakpits are causing pollution of shallow groundwater and contaminated surface runoff to

drains. The widespread flow of wastewater may give rise to the wetland conditions increasing numbers of disease vectors.

Drainage facilities for the surface water runoff in urban towns including Dili, are carrying a part of the wastewater flowing out of the septic tanks and from flooded pit latrines during heavy rains. Those drains are inadequate in capacity and are open at several locations. The rehabilitation of those drains, upgrading their capacity and providing covers where necessary would be one of the very important steps towards minimizing environmental pollution in the urban areas of East Timor. The existing water supply system in Dili will soon be rehabilitated and upgraded.

A sewerage system could be the best option for Dili and could provide flexibility to accommodate increasing wastewater flows over the next 10 to 15 years. At the initial stage a sewerage system could be constructed for the core area of Dili with future provisions for extensions to its outskirts as and when it is affordable.

A sewerage system consists of pipeline connections (sewers) to households for the collection and transport of the wastewater to a treatment site. The degree of contamination of wastewater is greatly reduced by various treatment processes. In Dili, as the climate is hot, sewage could be economically treated in waste stabilisation ponds. Currently such ponds are used on a small scale to treat the sewage collected from the septic tanks by a private company working for UNTAET in Dili. Following treatment, the final effluent has a very low level of contaminants and can be safely disposed in the sea.

In South-East Asia, the per capita cost of sewer connection in urban areas in 1985 varied from US\$45 to US\$400 with a median cost of approximately US\$80. Assuming this is still applicable for Dili today, with a population growth rate of around 3%, an approximate capital cost estimation for the system to the projected population of 214,100 in 20 years (based on the current population of 118529) would be around

US\$17 million. If the construction of the sewerage system is planned in two phases, the first phase for central Dili and the second phase extending beyond central Dili, the phase-wise cost of the construction could be US\$10 million and US\$7 million respectively. The high capital cost associated with a sewerage system could be justified in terms of the long-term health benefits that could be achieved by reducing wastewater related diseases.

The need for a sewerage system in Dili should be prioritised, and advocated for among the people of Dili/East Timor, and to the various technical and administrative divisions under ETTA including the Department of Health Services and Division of Water and Sanitation Services, external support agencies and NGOs/INGOs concerned. This could be achieved through organising a Seminar/Workshop to raise the profile and stress the importance of having a sewerage system in Dili

Conclusion

Water supply and sanitation programs are complementary and should always go hand in hand. Sanitation and wastewater management usually receive less attention compared to other development activities. However it is one of the basic service needs of the community and the lack, or mismanagement of such a facilities, has an immediate health impact.

East Timor will soon be independent. In this respect the capacity building processes of the government and non-government organisations should also identify the tasks of formulating new strategic plans and initiating manpower training for wastewater management and drinking water supply systems. Hygiene education can bring awareness and motivation among the people to demand for better sanitation. Participatory processes for hygiene education and awareness prior to the physical implementation of sanitation facilities, are always helpful in achieving acceptance and use of the systems by the people in the long run.



Technology Workshops

Sustainable Design Workshop

Issues Identified: Inappropriate design i.e. concrete houses in tropics • Education needed to inform people • People influenced by western media to want western lifestyle • Lack of planning • Lack of proper zoning • Imported materials are too expensive and distort/disrupt the local economy • City (Dili) doesn't know its own face • Need for holistic approach to planning • How to reconcile availability of concrete versus lack of timber • Globalisation creates loss of local identity • Local knowledge and materials • Studies needed so people can make informed choices – examples • Association of status with imported design • Community housing a priority • Need to encourage local architects and architecture • Include environmental education models for schools and villages • Set up demonstration model of sustainable design • Training programs needed for Australian builders • Cooperation between housing rights groups and architects • Sustainable design education in technical colleges • How to solve; immediate/urgent problems, medium-term problems, long-term problems • Knock down inappropriate buildings • Need for building codes to implement technical design • Urban – work, live in urban designs; rural – build in the traditional way • Bamboo good for small buildings • Bamboo is being made into laminated beams • Research is needed into suitable bamboo varieties and treatment • Recycle and reuse material from damaged buildings

PRIORITY ISSUES	STRATEGIES
Need for examples/models	<ul style="list-style-type: none"> • Set up demonstration model of sustainable design • Need to encourage local architects and architecture • Different models for urban and rural situations • Conduct research program into suitable bamboo varieties for building and treatments for preservation • Use bamboo for smaller buildings • Investigate possibilities for using bamboo in laminated beams (happening in factory in West Timor)
Need for community education	<ul style="list-style-type: none"> • Environmental education (including sustainable design) modules for schools and villages • Sustainable design modules included in technical college courses where local builders are being trained
Inappropriate designs (use of concrete)	<ul style="list-style-type: none"> • Conduct seminars for Australian builders and construction companies • Build cooperation between housing rights groups and local sustainable design architects • Knock down rather than rebuild inappropriate buildings • Recycle and reuse material from damaged buildings
Inappropriate planning	<ul style="list-style-type: none"> • Need to delineate short, medium and long-term problems • Community housing is a priority • Draw up a building code to implement technical design and ensure vested interests can't take shortcuts • Holistic planning needs to also take into account waste, energy and water considerations

Sustainable Energy

Identified Issues: Cost – how to make technology affordable to communities • Lack of skill in maintenance and repair (requires training, not just supply, short life of technology without this) • In the future, the cost of energy will decrease, so it will be cheaper than traditional forms of energy • It takes resources to make alternative energy – how long will it take until it produces more energy than it took to make it • How to apply this knowledge at community level • Require training (capacity building) of local communities • Lack of policy direction – huge influx/push using diesel energy – need for coordinated groups to develop that policy involving the administration and civil society – 'hamutuk' (together) • Cost of diesel to run generators is too high for East Timor into the future.

(Continued on next page)

PRIORITY ISSUES	STRATEGIES
Cost – how to make technology affordable to communities	<ul style="list-style-type: none"> • Ways to reduce energy • In future alternative energy costs will decrease and it will be cheaper than traditional forms of energy
Cost of diesel to run generators is too high for East Timor into the future	<ul style="list-style-type: none"> • Government and technology providers work together to provide products to people in remote communities • Budget needed • Government/private electrical companies establish and maintain systems – people pay for electricity in small amounts with meter per week
Lack of skill in maintenance and repair Require training (capacity building) of local communities	<ul style="list-style-type: none"> • Use existing community structures to train people to maintain and decide their energy needs
Lack of policy direction – huge influx/push using diesel energy – need coordinating group to develop policy involving the administration and civil society “hamutuk” (together)	<ul style="list-style-type: none"> • Timor Gap resources be strategically tied to development of alternative energy in East Timor • Timor gap environmentally responsible • Transparent clear goals developed at community level for energy needs • Government needs to be further urged to develop sustainable energy futures group as soon as possible • The community needs to be aware of negative consequences when energy provided

Waste Issues Workshop

Issues Identified : Solid waste: places/ bins to put rubbish in, in the house, or in the street • Has UNTAET any plan to clean the city, or to build infrastructure for cleaning the city? • Great increase in solid waste since UN arrival – change in the type of waste • lack of environmental awareness work program • lack of knowledge as to where rubbish should go • Can't find the right person to speak to • Non bio-degradable rubbish a problem since Indonesian times • No place to dispose of waste water – it now goes to creeks, beaches, and ground water • Polluted, contaminated water kills fish and other marine life • No separation between grey, black, and storm water • Septic tank overflows • Impacts on human health – water-borne diseases • Oil, petrol from cars, goes to drains.

PRIORITY ISSUES	STRATEGIES
Solid Waste <ul style="list-style-type: none"> • Great increase in rubbish/waste since UN arrival. • Non bio-degradable rubbish a problem since Indonesia in Timor • No Places, bins to put rubbish in house, street 	<ul style="list-style-type: none"> • Give information and advice to community • Special instructions for waste management recycling • Container deposits • Education formal & Informal • Supply of bins in public places • Recycling reduces waste by up to 90% • Legislation for land fill- Environmental law • Special place for disposal treatment • Identify appropriate technology for East Timor • Methods need to be put in place to handle increase in waste e.g. Ozone • Communities choose site for local treatment of waste
Waste water <ul style="list-style-type: none"> • No places to dispose of waste water - Goes to creek, beach, ground - Polluted, contaminated water kill fish other marine life - No separation between grey, black and storm water - Septic tank over flows - Impacts on human: health-water borne diseases - Oil, petrol from cars -drains 	<ul style="list-style-type: none"> • Develop waste water strategies • Communities choose site for local treatment of waste – reduces need for transport/ piping costs • Education for correct disposal of waste water • Guidelines for growing vegetables in waste water • Biological and treatment systems = work on all scales • Separation of waster into useful/ non useful items





Health and the Environment: Integrating health concerns in National Sustainable Development

Dr Alex Andjaparidze

World Health Organisation (WHO) Representative, East Timor

“Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature.” - Earth Summit 1992 Rio Declaration.

Health prospects anywhere in the world depend on sustainable development of our natural and social environment. Health cannot be separated from a myriad of environmental elements as diverse as air and fresh water, poverty and living conditions, sanitation, chemicals, diseases vectors, over consumption, under development, technology and trade.

Attaining the goal of healthy people in healthy environments requires far more than the application of medical technology or even the total efforts of the health sector working alone.

Integrated efforts by all sectors, organisations, individuals and communities are required to make socio-economic development sustainable and humane, ensuring a sound environmental basis for health.

Like all living beings, humans depend on their environment to meet health and survival needs.

Human health suffers when the environment no longer meets human needs for sufficient and safe supply of food, water, sanitation and shelter, due to inadequate or poor distribution of resources.

Health suffers when people are exposed to hostile environmental agents such as microorganisms, toxins, armed enemies or drunken drivers.

Human health is essential for sustainable development. Without health, human beings would be unable to engage in development, combat poverty and care for their environment. In turn, care of the environment is essential for human welfare and the development process. A healthy environment leads to a healthy population, as seen by the fact that an unhealthy environment leads to many environmentally related diseases and health problems.

In East Timor in 2000, the curative institutions - international NGOs and the military medical team of INTERFET - provided more than 690,000 consultations and curative interventions to the population. Poor environmental quality is directly

responsible for around 70% of all preventable ill health in East Timor, with respiratory infections, diarrhoeal diseases and malaria heading the list. Acute respiratory infections among adults and children account for approximately 35% of total consultations and curative interventions; diarrhoeal diseases 30%; and suspected malaria 18% of total consultations. Furthermore, the outbreaks of dengue haemorrhagic fever, Japanese encephalitis and cases of filariases and visceral leishmaniasis which are vector born diseases are not uncommon in many parts of East Timor. It is estimated that 80% of children in East Timor have intestinal parasitic infections, which are also closely associated with the environment, particularly with poor sanitation.

The three main causes of death and disability in East Timor are; 1) diarrhoeal diseases due largely to contaminated food and water and lack of sanitation, 2) respiratory diseases particularly tuberculosis and pneumonia caused often by crowded unhealthy living conditions and 3) deadly malaria due to inadequate drainage and mosquito control.

Mortality in East Timor is contributed to by other mosquito borne diseases like dengue haemorrhagic fever and Japanese encephalitis, as well as by non-communicable diseases, chronic diseases, injuries from road traffic accidents and other conditions.

Let us look into the current environmental conditions in Dili. A rough estimate of the population of Dili is 120,000, which constitutes approximately 20% of the total population of East Timor. In Dili, little attention has been given to environmental issues in the post-crisis period, as major attention has been focused only on emergency and rehabilitation needs. Dili does not have any kind of sewerage system for wastewater treatment. The wastewater management practices in Dili consist of on site disposal facilities either with pit latrines or with septic tanks. The effluent from the concentrated pit latrines usually finds its way to the shallow groundwater and the effluent overflow from septic tanks contaminates surface water drains. The existing latrines and septic tanks, in the absence of a sewerage system,



pollute the water coming from dug wells and shallow tub wells as well as polluting drain water. The high underground water table in the lower lying parts of Dili obstructs the sub-surface infiltration of wastewater and this situation becomes even worse during the wet season. Existing water supply service pipelines (catering to approximately 50% of the population of the city) are quite often situated inside the road drains indicating the possibility of drain water getting into the leaking pipes.

The existing water and sanitation situation in Dili provides opportunities for contamination of drinking water by different infectious pathogens responsible for diarrhoeal diseases, viral hepatitis and other water-borne infections. In addition, absence of proper drainage and water storage systems are increasing the breeding sites for vectors of malaria, dengue fever, Japanese encephalitis, filariases and visceral leishmaniasis in the city and surrounding areas. The disease surveillance data indicate that during the year 2000, Dili district accounted for the following approximate percentages of total reported cases in East Timor; 30% of bloody diarrhoea cases, 27% of watery diarrhoea cases, 40% of dengue infections, and 18 % of malaria cases.

As has been seen in many developing countries, there is a possibility that the population of Dili will grow, attracting more migration of rural people to the city for employment. If plans for the water supply and sanitation system are not simultaneously developed, the population increase and the resulting environmental implications will further aggravate the environmental problems and other health hazards in Dili.

A water supply and waste management system is a complete process on its own and can be functionally categorised into;

- a) source abstraction, treatment, and storage,
- b) bulk or individual distribution, and
- c) subsequent disposal of generated wastewater with suitable treatment.

Recently, the Division of Health Services and WHO made joint comments on a project proposal for Dili water supply, rehabilitation and improvement. This proposal only dealt with the work on source abstraction and did not cover the future implementation of water distribution or wastewater disposal.

The service ratio under the new system if implemented aims at 70%, which leaves the remaining 30% of the population dependent on the traditional sources such as shallow tub wells, dug wells and the small scale communal supplies

that are scattered around the city. The system will have virtually no control over the quantity and the quality of water in use.

The daily per capita supply of safe water in the city is designed to be 249 litres, which is five times higher than the present supply of about 50 litres. The existing distribution networks would not withstand the sudden increase in the system supply and in consequence may give rise to more leaks and burst mains. It is admitted in the proposal that if the wastewater in the city is not controlled properly then the anticipated increase in the supply may yield additional 2 mm of wastewater per day in the distribution area as surface runoff. Most of the overflows from the septic tanks at present are flowing freely to the surrounding ground or the open drains built for stormwater runoff. The artificial wetlands created by the excessive amount of the wastewater generated in Dili may contaminate the soil and surface water bodies and raise the groundwater table, imposing more difficulties for sub-soil infiltration and decomposition of the waste inside pit latrines.

The existing conditions in Dili with regard to the drainage and the on-site facilities for defecation reveal a very critical situation.

This does not mean that an improved water supply system for Dili is not an urgent need. The proposal is most welcome in this regard. However, our main concern is that the project proposal is incomplete, as it has not dealt with the simultaneous planning for the management of the water and subsequent wastewater problems. In such a situation, generation of additional wastewater may be responsible for further deterioration of the quality of water supplied, irrespective of the efforts to improve the quality of the bulk water supply.

The Division of Health Services and the World Health Organisation recommended to the ETTA Division of Water Supply and Sanitation Services, that the proposed water supply rehabilitation work including the distribution system in Dili should propose simultaneous development of a sewerage reticulation system and improvements to the existing drainage system. I hope that our recommendations will be taken into consideration and the project will be implemented accordingly.

Please remember the following commonly held *wrong assumptions* from the experiences of other countries:

- Improved water supply alone leads to better health. There is no need for sanitation;
- Sanitation improvement has minimal health benefits and no socioeconomic benefits;
- All good sanitation options are expensive and



- difficult to implement;
- Water, air and soil are free goods and we should not have to pay for improving them;
 - Safe and adequate water supply alone is a pre-condition for good sanitation;
 - Message-giving will change behaviors;
 - Traditional and cultural attitudes are barriers to good sanitation practices.

It is quite possible that you may have already heard such statements from individuals and organisations. However, you should bear in mind

that the above statements are wrong assumptions. It is our responsibility to rectify them, giving importance to sustainable, overall equitable sanitation to all people in East Timor.

WHO strongly recommends that any development project in East Timor should take into consideration the impacts on the health of the population and clear their proposals with health authorities. WHO is willing to provide the required technical support to the Division of Health Services in this important task.

The Problem of Health in East Timor

Maria De Fatima Ximenes Dias
Director PAS Clinic

Introduction

East Timorese people have fought to be free of the hands and chains of colonialism for the last 500 years - especially during the 24 years of Indonesian occupation. Both men and women, from small children to the eldest members of our society, fought the struggle for our freedom. We fought together against our colonisers who used many methods, including violence, destroying the children of East Timor in all respects, including the environment.

To speak about health and the environment in accordance with our ideals, we have to look at how all members of the community, including ourselves, “live healthily”; physically, psychologically, mentally, and spiritually. We have to assess whether the environment in which we live is clean, favourable, safe, calm, and peaceful. The issue of health is not separate from that of the environment.

Criteria for community health:

The following criteria are essential for the community to live in good health:

1. **Land** is the basis of our health. It is from the land that we take food and medicine;
2. **Water** is essential for all living animals, including humans. We cannot live without water;
3. **Work** strengthens our health •if work is divided evenly and all people have equal rights;
4. **Food** is our health. The worst disease in the world is hunger;
5. **Medical care:** every human being has the right to receive adequate medical care.

Some of the problems occurring now in East Timor are listed below:

- If it is difficult to obtain money, people will move out of their district.
- Many problems are occurring in the city of Dili.
- Rubbish is piling up in the markets, on the streets, in the drains, and all of that is a source of disease.
- A shortage of accommodation means that many people live/sleep in the market.
- Many houses are very closely packed together, as they are in villages.
- Fighting, killing, illegal drug taking (marijuana, morphine) among the young people.
- A shortage in farm produce while the price of goods in the market is very high. This means that many people are hungry because they are not able to buy food. The result is that disease increases and becomes rampant.

I believe that we are all always looking out to see what is happening in the world that we live in. The following discussion includes my observations of the situation now during the Transitional Period in East Timor. All of the following problems have negative health impacts for the people of East Timor.

1. LAND

- Village farmers work hard but their produce is left to rot because there is no way to transport produce to the city, and no companies to buy farm produce.
- Many groups of people from the villages are arriving in the city of Dili.
- Many people are short of food.
- Many trees are being cut down to be used for firewood, and to be sold to provide a source of income.
- Forests and mountains are subject to erosion,

and are burnt annually, particularly between June and September.

2. WATER

Water gives us life. Without water, we would all die. East Timor has many sources of water, and I think that there is enough here for all human beings. But the reality is that even in the city of Dili, there may be no water for one or two weeks.

- In many isolated areas people have to walk for 1-2 hours to get water.
- In the rainy season, people drink rainwater or ground water, and many officials from Water Supply and Sanitation do not pay attention to broken or damaged pipes where water is being wasted due to broken water connections.
- As yet there is no law or certainty of law that is clear and legitimate for the arrangement of water system installations (at the present time people install their water systems themselves).
- The insides of water storage tanks are not cleaned, people use wood or stones to block water pipe connections, and so people wear dirty clothes.
- The result is that people become sick with many diseases such as cholera, malaria, skin diseases and scabies.
- In the dry season, the people need to plant vegetables and other crops, but without water, they can do nothing. The government must not leave the community to live without water during the dry season.

3. WORK

- Work strengthens the health of the community, but now many people cannot find work. For example more than 1000 nurses do not have jobs, because UNTAET does not have the money to employ them.
- Many people do not work because they do not have skills.
- The wages for translators, drivers, sales clerks and attendants are not fair. There is discrimination between local staff and international staff.
- Many of those who do have work do not take responsibility for others.
- All the nice houses with air conditioning and modern conveniences are lived in by internationals, whereas there are many people in the community who are sick because they do not have a good place to live, and we have to try hard just to find them a place to rest.
- Many mini markets and restaurants have opened up, but only foreigners and wealthy people shop and eat in them. For the general community and the poor it is hard enough to get one grain of rice. The leftover food from the

restaurants and from rich people which is carried by truck to the rubbish tip at Tibar, is scavenged by the people, and carried to their houses to be eaten and to be sold again. Such a situation is very bad for the health of the community.

- The general community and the poor use wood to cook, for which many trees are being cut down, while foreigners and the rich use gas stoves. Wood smoke is bad for people's lungs, and traditionally here women and children spend a lot of time in the kitchen, so it is they who suffer the most. We know that 75% of East Timorese suffer from Tuberculosis.

4. FOOD

- The worst disease is hunger
- There are many poor people who are sick because of lack of food.
- Many pregnant women suffer from anaemia.
- Many children are malnourished.
- Many husbands and wives argue because there is not enough food for their children.

Food is organised for those that need it the most.....

CARE provides

- 12kg rice per person per month
- 6 kg of nuts per person per month

World Food Program provides

- 1 litre of corn oil for 7-10 people per month
- Corn meal for a child 0-2 years, 5 kg per person per month
- Beans, for a child 0-2 years, 2 kg per person per month
- Oil, soap, corn meal, fruit juice etc.

5. MEDICAL CARE

- The total population of East Timor is 600,000.
- There is a shortage of doctors, both general practitioners and specialists.
- There are approximately 30 general practitioners.
- There is one specialist doctor.
- There are approximately 3000 nurses.
- Much of the potential workforce has not been hired, with the excuse given by UNTAET that they do not have any money.
- Many community health centres, particularly in the districts, have had to close.
- Those from the villages that need to go to the community health centre may have to walk for 1-5 hours to obtain medicine.
- The public hospitals in Dili and Baucau are suffering a shortage of medicine, as well as medical equipment.
- Local doctors do not have a part in working in the hospitals.



Gender and Development

Aurora Ximenes

Coordinator, East Timor Women's Network (REDE)

The issue of gender in East Timor is similar to the issue of gender anywhere else in the world. Generations of women everywhere have been given the task of only performing household chores, while men have been valued as the productive members of society, working in the plantations, in the ricefields, and in public positions. This long held division of labour covers all facets of community life so that women have never been prioritised for their importance as individuals but only prioritised in relation to the needs of men. This situation is such that roles and responsibilities are divided according to gender.

In our society, men are brought up to have authority, with the result that a paternalistic culture develops. This causes a discriminatory social environment where women are not accorded the same rights as men and are not respected. The result is that women are marginalised and subordinated. This means that in our social environment division between the roles and responsibilities of men and women arise automatically, giving rise to the issue of gender.

Gender first came to the fore as an issue in the 1970s when it was brought up by Ann Oakley who described the issue of gender, whereby, "the different characteristics accorded women and men are a social construct, while the real differences are only those of biology".

Based on this assumption, the understanding of gender can change over time with changing situations, such as crisis or conflict, that can change a situation very rapidly.

As we already know, women in East Timor have experienced great changes due to the conflict in East Timor and these changes have resulted in people seeing the reality of the construct of gender. The situation of conflict in East Timor caused women to become involved in the development of all aspects of life, in the National Freedom Movement, as well as in the movement to free their fellow women, especially in the fields of politics, economy and education.

However, this period of participation did not last long, because Indonesian military activities caused people to become quiet and to stop struggling. Women's position of subordination in a patriarchal society was made worse by the conflict in East Timor, where women were forced to endure violence. This situation resulted in

women becoming ignorant and poor, and their sense of dignity suffered.

As such, we can see that along with a paternalistic East Timorese society, due to the long conflict in East Timor, women as subordinate members of society have experienced changes since 1975.

East Timorese women's organisations have taken initiatives to raise the dignity of East Timorese women, and to free women from their ignorance. In relation to undertaking such initiatives, the Women's Congress held in Dili in June 2000 discussed the following issues:

Political issues:

- Policies that are supportive of women are required;
- Policies that ensure equality for all people are needed in the fields of law, justice, education, health, economy and transportation.

Economic issues:

- Lack of funds;
- There is no provision of basic goods for production purposes;
- There is no means for transportation of goods;
- There is unequal distribution of income;
- Lack of business skills in the community;
- Women do not yet have access to small business;
- There need to be policies and programs that support women, such as micro credit.

Education issues:

- The majority of women are still illiterate;
- Lack of school facilities;
- The school curriculum is not yet decided;
- There needs to be guidance for children as to how to value and respect other people;
- Develop Tetum and Portuguese languages.

Health issues:

- Lack of medicines in villages;
- Lack of vitamins;
- Lack of health workers in villages;
- Lack of mental health workers and programs;
- Lack of clean water facilities.

Media and communications:

- Need adequate communication facilities
- In relation to the above issues, it can be

concluded that women must be able to contribute to and take part in development in all areas.

In general women do not advance due to many inhibiting factors in areas such as education, economics, communication and politics. These factors influence gender development because if women do not experience an improved level of participation in all of the above areas, the development process will remain uneven. The development process will not address community needs in general, and women's needs in particular.

At the CNRT National Congress in August

2000, a Resolution on Women's Rights was made concerning:

1. The continuing discrimination and inequality of opportunities for women in East Timorese society;
2. The violence against women in and outside the home;
3. Polygamy and the lack of participation of women in decision making;
4. The absence of laws that protect Timorese women.

Gender and Politics - The Case of Small Island Nations



Motartilavao Hilda Lini

Director, Pacific Concerns Resource Centre, Fiji

On August 30, 1999, the international community witnessed the democratic confirmation of people's aspiration for the independence of Timor Lorosa'e.

This historic victory was achieved with collective people's participation involving men, women, old and young and children.

Today, as we map out the first steps of nation building process, we can use the same principles, institutions and strategies applied by the liberation movement.

The principles normally applied by any liberation movement are;

- Clear vision,
- Committed leader who is ready to serve,
- Collective decision and goal setting,
- Strategic planning,
- People's mobilisation,
- Communication and information,
- Skills and
- Commitment and sacrifice.

All we have to do is identify aspects that need to be strengthened to meet today's development needs for rebuilding Timor Lorosa'e.

I believe that the Tibar Conference on Reconstruction of East Timor, held in June 2000, has already identified policy directions for each development sector including gender balance planning.

I also believe that the implementation strategy from the East Timor Women's Congress held in June 2000, "Platform for Action for the Advancement of Women of Timor Lorosa'e", is now being integrated into gender-responsive

policies, legal frameworks, and mainstream development planning, for budget allocation.

This is being co-ordinated by UNTAET Gender Affairs in consultation with East Timor Women's Network (REDE).

Furthermore, His Excellency Xanana Gusmão, has also re-affirmed in his New Years message the peoples right to live in peace and harmony and his commitment to serve the people.

With these efforts already in the process all I can offer is to share with this forum some experiences both from Vanuatu and the Pacific Islands with the hope that there may be elements that we can learn from.

Firstly, the Vanuatu experience

Vanuatu faced a similar situation in terms of post-colonial issues including gender issues seen from the perspective of a liberation movement. The only women's programs during the colonial period were cooking and sewing.

When the liberation movement won a landslide majority in the 1979 election, the Women's Wing of the Movement co-ordinated a meeting of all women's groups and all political factions. That first National Women's Conference established the Vanuatu National Council of Women and at the same time came up with a Plan of Action prior to independence.

The National Council consisted of 13 Island Councils of Women. Its role was to advise all decision making bodies on matters relating to women/gender issues.

The Women's Council selected women who served at these decision making bodies and they had to report back to the Council.



The Women's Council also ensured that women participated in the drafting of the Constitution, the Criminal Code, and contributed to major laws such as the Employment Act, the Decentralisation Act and the Land Act.

The Women's Council identified areas that needed priority training of women, gave career talks to students and guided them through training overseas to ensure positive results.

Local level training was coordinated by the Women's Council through the 13 regions of Vanuatu.

The Women's Affairs Office was established under the responsibility of the Prime Minister for priority attention. The role of the Office was to formulate policies and to implement policies regarding women/gender as identified by the Women's Council.

Women were nominated to Local Government Council to reacquire skills needed in decision making. The Council of Women gave them training on their role as women's representatives in the Local Government Councils.

Every five years a review was made. After 10 years of independence, a review proposed that a gender planner be appointed to the National Planning Office to oversee the integration of all gender issues into mainstream planning.

Women's Affairs became responsible only for policy coordination.

The Council of Women which had grown from 13 island councils to 77 area councils became the implementers of programs.

The Council of Women continued as a decision making body, providing advocacy and ensuring that government makes gender responsive decisions and policies.

However, for 7 years after independence there was no woman elected to the highest decision making body in Vanuatu, the National Parliament.

This reflected the lack of women in politics, not only in the Pacific, but also worldwide.

In the Pacific women are the managers of families, backbone of the churches and communities, the majority of teachers and nurses, and 50% of farmers. However, political decision making processes are dominated by men.

There are few women in Pacific parliaments. While Australia and New Zealand have higher proportions of women in political office, women

report lack of support and attitudes in parliament and media which undermine their political activity.

In spite of the growth in democratic political systems gender equality in political decision making is far from being achieved.

Women have valuable perspectives and experiences to contribute to both the substance and process of decision making, both as political office holders and community leaders.

Women's political strength lies in their sense of justice, honesty and humanity.

In small island states there have been difficulties in translating the international and regional gender development policy frameworks into action.

In most countries political parties have a strong influence on the composition of parliaments and governments. Political parties in general do not provide adequate support to women's entry into national and local election processes. Culture and tradition are often used as excuses for excluding women from candidacy and political office.

The prevailing male dominated political environment of confrontation, harsh competition, closed male networks and excessively long hours of work, constitute additional barriers to women's participation in politics.

Women's poverty, burden of roles, higher illiteracy, lack of access to educational opportunities and information technologies are further barriers to women's participation in public spheres.

I hope that Timor Lorosa'e after having fought so hard, so long, with so many human costs, will not repeat the same mistakes that other small island countries have made. This is to ignore women's participation in all development.

Let the women of Timor Lorosa'e be partners in decisions, policy making, planning and budgeting, implementation and monitoring and mediation in conflict resolution.

Give women of Timor Lorosa'e a chance to become active partners in rebuilding Timor Lorosa'e.

They have proved that they can do it just like they helped to win a 24 year-old war. The challenge then is with you to define the strategy.

As a new nation, the choice is yours to make a difference.



Sustainable Development from the Perspective of the Young People of East Timor

Summary of Full Paper¹

Mariano Sabino

Coordinator, Conselho Presidium Juventude Lorico Asswain/PSJA

The human phenotype is shaped by interaction between the genotype and the environment. The genotype itself is continually changing due to chromosomal mutations that are either spontaneous, or are caused by the environment. This encourages people to always take note of environmental factors, as they are one of the determining factors of human life. I will explore the prerequisites for sustainable development and young people's potential to influence the development process. I would like to begin with several critical questions for reflection in terms of the aims and philosophy of development. Who are the agents of development? Who is development for? What are the stages and processes of development, and what is the natural resource and human resource potential of East Timor? Answers to these critical questions are key guides to development in third world countries, and to the development of an economic framework for East Timor. Approached in this way, our concept of development will be realistic and pragmatic and will be able to address the needs of society.

Development has the aim of improving the quality of human life. The philosophy of development is for humans to improve ourselves and to live our lives in a wholistic, equitable and independent way. During this transitional period people's lives are changing. East Timorese people were previously under the rule of colonisers, experiencing oppression, fear, inequality, a lowering of our humanity, abuse of our rights and negation of our culture. This was followed by the burning of our houses. Now we have a development paradigm that is liberating, is more democratic, appreciates the value of humanity and equality, and guarantees the safety and well being of the people. Thus, development is not oriented to the pursuit of economic growth but to a form of development that is participatory, wholistic and equitable.

From the perspective of young people, sustainable development is development that has the aim of fulfilling the needs of today's generation in a way that will not prevent the needs of future generations being met.

Young People are the potential for Sustainable Development

History has shown the potency and strength of youth in curing the disease of pessimism that is caused by exhaustion and resignation while facing the strength of colonialism and neo-colonialism. Youth have risen up as the pioneers of revolution - transforming pessimism into optimism and a fighting spirit - leading to victory and glory. The thesis that youth are the backbone of the nation is relevant for every age. Youth are dynamic and can adapt to the various demands of every time and place.

The youth of East Timor are the ones who carried weapons and became guerillas, and so they never received formal education, are the ones who were given birth to by mothers who while pregnant had to bear hunger and meanwhile also provide food and vitamins to their families, who when they were small bore their hunger and thirst, lacking in vitamin's and immunisation, who could not go to school, or had to stop school because their parents were not financially able to pay the school fees or buy school equipment, who finished high school but were not given the opportunity to attend university, because they did not pass the tertiary entrance test, or because of the KKN selection system (corruption, collusion and nepotism), who left the school system to become wanted people by the Indonesian police and military because of their activities in opposing the Indonesian invasion, and so university studies were not completed because of their political activities. Some were able to finish their studies, and others went with their parents as refugees to Portugal or Australia. Those who left East Timor could be educated to a higher level, or at least could be able to communicate in Portuguese or English. In a political and sociological sense, the youth of East Timor have been brought up by resistance and violence that together have influenced their character and intellectual development.

Development of the potential of youth in East Timor

In a political sense, youth must continue to

¹ Summarised by the organising committee

be given a place to participate in the development of national policies. There must be as much involvement as possible from youth and from the people as a whole in policy development. The content of the policies must reflect the problems of the majority of the population, and of youth.

In a legal sense, this is the first time that East Timor has experienced independence. Thus a total reorganisation of all aspects of human life, from oppression to independence is required. The law under the Indonesians was one of the instruments of oppression. What is needed is knowledge of the law followed by enforcement of the law.

In the field of **Human resources**, formal and informal education will guarantee a strong foundation for sustainable development. Human resources are the key to sustainable development.

Human resource development must include the following:

- The compilation of an informal/basic curriculum that is adapted to the needs of sustainable development at the sub-district and village level. What is needed is a curriculum for those youth who have not continued their formal education that is oriented towards particular kinds of work such as small-scale farming (agribusiness), trade and private business.
- Financial support to the districts is needed via bank credits for cross-borrowing cooperatives.
- Training that emphasises specific fields of employment (on a large and varied scale).
- Planning a vision and mission for education with paradigm of *Ukun Rasik* (self determination).
- Community education (elimination of illiteracy)
- A large increase in the number of students in technical education to help strengthen the private as well as the public sector.
- Planning for guest discussions and guest lecturers at the Masters and PhD level for knowledge exchange.
- Planning for free computer and language courses (like those held by the Student Solidarity Council and IMPETTU) to meet the needs of all interested students.
- Government monitored provision of food to pregnant mothers, children, and those in need of food to ensure the health of children and provide sufficient nutrition for brain development.

In the area of **employment**, employment opportunities need to be developed in accordance with the natural resource capacity and needs of East Timor. The system of payment for work based on the degree of language mastery needs to be abolished.

For the **environment**, a campaign for environmental awareness is needed (to prevent illegal burning and logging) and a reforestation program (agreed upon in the national calendar, with monthly planting days).

The provision of **clean water and sanitation** facilities so as to guarantee cleanliness and health.

Environmental Impact Studies, social and cultural impact studies and health impact studies can be used as planning tools for every development program in order to guarantee sustainable development.

The Environment in East Timor

The environment in East Timor has been destroyed by shifting agriculture practised by traditional farmers and by war. The impacts of war and colonisation in East Timor began with the Portuguese. Hunting was a Portuguese passtime, for which they burnt the forests (the shelter of deer, wild pigs, bulls and other game). Environmental destruction was made worse by the Indonesian occupation. The Indonesians not only burnt the forests but also burnt people's houses. Their hunting spread from wild animals to also hunting people. In short, all the aspects of life for East Timorese people have been destroyed.

Transitional Period

In a short period of time the shift has been made from no development at all, to a plethora of programs that have already been implemented by UNTAET. Even so, there are several important points that we must focus upon in this conference, including:

1. The slow pace of reconstruction (with no vision, phasing of development, transparent priorities and local participation in development planning).
2. Many small demountable offices are being used by UNTAET. The clear indication is that when UNTAET leaves, those offices will disappear.
3. Handling of public health facilities like clean water supply and sanitation facilities.
4. Only Dili port is being used. This results in slow loading and unloading of goods, and a backlog of containers, while the Com-Lautem port is not being renovated, however it should also be used on an international scale.
5. Lack of town planning by UNTAET Dili District is resulting in damage to parks, as they are being used as market places.
6. Education should be made a priority, in terms of both financial support for infrastructure and human resources. Lack of provision of education facilities adds to unemployment.



Further, several primary schools in the interior of East Timor have been threatened with closure.

7. Lack of regulation of importation of goods and food into East Timor, with the result that there are many unusable second hand cars littering Dili, and expired food is being sold in the supermarkets.
8. The problem of personal safety, is that law enforcement (by Civpol) is not maximally exercised, adding to social unrest.
9. The damage to bridges and roads in several places causes great difficulties for people living in affected areas to fulfill their needs.

These issues are obstacles to sustainable development. This discussion invites us to be more proactive in working with UNTAET for the sustainability of development in East Timor.

Conclusion

Social and cultural aspects are key to discussions about sustainable development. Development in East Timor should not only pursue growth, but should consider social prosperity indicators and the fair and equal participation of the community.

We have organised many seminars and conferences whose aims are only written, but never realised. Hopefully this conference will not do the same thing.

I would like to thank the organising committee who have worked hard to bring us together for this conference. Hopefully East Timor will become a nation that is green and prosperous. This is the hope of all the children of the nation of East Timor.

Pressure Groups: The Contribution of Young People to the Reconstruction of East Timor



Joao da Silva Sarmiento
Coordinator, Student Solidarity Council

“A man travels the world over in search of what he needs and returns home to find it”

(George Moore, Philosopher)

Last Saturday in the cold city of Davos, Switzerland (Sunday morning in East Timor), the World Economic Forum held its annual meeting which was attended by approximately 3000 business and world political leaders. However, the meeting was coloured by protests held by anti-globalisation protesters.

Four cars were burnt, several demonstrators were arrested and demonstrators were tortured by the police with tear gas, water cannons, and rubber bullets. The demonstrators shouted anti-globalisation slogans such as “Justice, Not Profits!” and “Wipe Out the WEF!”. Demonstrators from all over Europe streamed into Switzerland and it is thought that protests will only become more violent and tense.

Such protests are part of a whole range of anti-globalisation protests that have occurred in; Seattle in the United States, Prague, Finland, Melbourne Australia (S11) and in several other cities in recent years.

I know about all of this not because I went travelling around the world in my dreams last night, but because the world has already become a “global village” which means that whatever

occurs in any part of the world will be known. The fever of the wind of globalisation is now spreading everywhere.

As a result of globalisation, the rich are becoming richer, and the poor are becoming poorer. Global inequality is one of the evils that is opposed by the demonstrators in the above example. We can see the same situation if we take a quick look at the recent development of East Timor. Small examples that can be given include security staff, interpreters, teachers and others, who are paid differently under the labels of local versus international.

The culture of MacDonald’s and Kentucky Fried Chicken has become a real manifestation in East Timor. Cabbage and bananas at *Mercado Lama* (the central market) are going rotten. Cabbage, bananas, pineapple and other goods from other countries are flooding the markets of East Timor.

Last week, the eyes of the world opened wide in surprise as they watched the drama of the overthrow of President Joseph Estrada in the Philippines by a people’s power movement. This was the second time in Philippine history that people power overthrew a president, with the same drama befalling President Ferdinand Marcos 15 years ago. Joseph Estrada was overthrown because he was involved in the



chronic disease that is known as corruption.

Even in one of East Timor's neighbouring countries, in Indonesia two years ago, the strongman of Asia, Soeharto, was forced to step down due to the same blight – corruption. In Yugoslavia it was young people, students and lovers of democracy who overthrew the authoritarian despot, Slobodan Milosevic. In Indonesia, the government of Gus Dur has also recently been rocked by demonstrations by young people, students, and democracy activists.

That is just a small illustration of the activities of pressure groups that occur on both sides of the world. Such pressure groups oppose authoritarian corrupt institutions that exploit many people and govern their people with an iron hand.

East Timor recently has also not been free from discussions and media coverage about issues such as corruption, threats towards the media and particular political groups, and manifestations of despotic behaviour. It is distressing that bad things are now occurring in East Timor. It seems that the Pandora's Box has been opened and all the evil elements are flying every which way to take control of all aspects of community life.

East Timor needs a pressure group to undertake checks and balances. The illustrations that I have given in the examples above take the form of protests and clashes.

It is true that these days East Timor is rather quiet after the protests from the WFP employees, and the primary and high school teachers. So, am I inviting all of you here to protest? No! Protesting is only one way of conveying an opinion, and there are many other ways. George Orwell alias Eric Blair quoted Napoleon Bonaparte in saying that 'governing in one week can be like a spontaneous demonstration'.

These days there are many social problems in East Timor. This conference in itself on a

conceptual level is not free from problems. There is a phenomenon that a newborn is given food by a congress, a sick person is given medicine by a conference, and a person who demands education is quietened with training and courses.

On a personal level, I feel sad that at a moment when we have come together for an event which is called a conference on sustainable development, we are also witnesses to a whole range of unsustainable development that is occurring, even in this room, where for example there are foreign interpreters, and particular institutions that aim to build capitalist imperialism going under the label of development agencies.

In such a context, the concept of sustainable development becomes only a jargon term that is worshipped by the countries of the world, but in fact it is a paradigm that is never successfully implemented. To quote Noam Chomsky, what actually occurs is 'Unsustainable Underdevelopment'.

The Magna Carta of the CNRT, dedicated in Peniche, Portugal on the 25th of April 1998, emphasised East Timor's commitment to develop a civil society that is democratic, politically diverse and which places the utmost respect on human rights, upon which are built the basic identity of East Timorese culture.

The young people of East Timor have their own contribution to make by becoming a pressure group whose aim is to struggle for the development of a community like that described above. Such a pressure group should not be viewed as an enemy or as an anarchic group, to be swallowed as Cronos swallows children in the Greek myths.

In closing, allow me to quote the motto of environmental activists around the world, "Think globally, act locally".



Education and Sustainable Development

Armando Maia

Rector, National University of Timor Lorosa'e (UNTL)

Introduction

The title for this presentation would probably be better if it were Education for Sustainability, to follow the module developed by John Fien (2000). However, I would prefer to leave it open, to allow the theoreticians, academics and educators in this area to develop an appropriate and suitable module for environmental education for East Timor, for both curricular and non-curricular purposes.

As an academic, I would be expected to deliver some kind of highly-academic and seminal paper regarding this topic. I am afraid that I might disappoint many people in this conference room if they have such an expectation. In fact, on top of lacking the relevant academic background and expertise in this area, I myself am not involved or engaged in any activity, either curricular or non-curricular related to this area. Some background study in Natural Resources and Environmental Economics some 10 years ago does not help much for the purpose of this conference. For these reasons, I will rather place myself as an observer who, obviously, will delve

into this issue more from an empirical than theoretical perspective.

I will divide this presentation into three parts. The first section will briefly look at the major concepts such as sustainable development, environmental education and the goals of environmental education. The second part will look into why environmental education is necessary for East Timor. The last section will focus on the necessity to introduce environmental education into the school curriculum from primary up to the tertiary levels, as well as in informal education.

1. Sustainable Development and Environmental Education

A wide range of definitions of Sustainable Development have been proposed and developed by experts, some stressing certain aspects more than others - a function of their respective views. For the purpose of this presentation, and for simplification, I picked John Fien's definition (2000), which focuses primarily on the environment: "A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment".

Whereas "Environmental Education" means "an across-the curriculum approach to learning which helps individuals and groups to understand the concept of sustainable environment". The ultimate aim of such understanding "is to help young people develop caring and committed attitudes and the desire to act responsibly in the environment and towards each other".

Moving along, we come to the goal of Environmental Education which fundamentally "is the

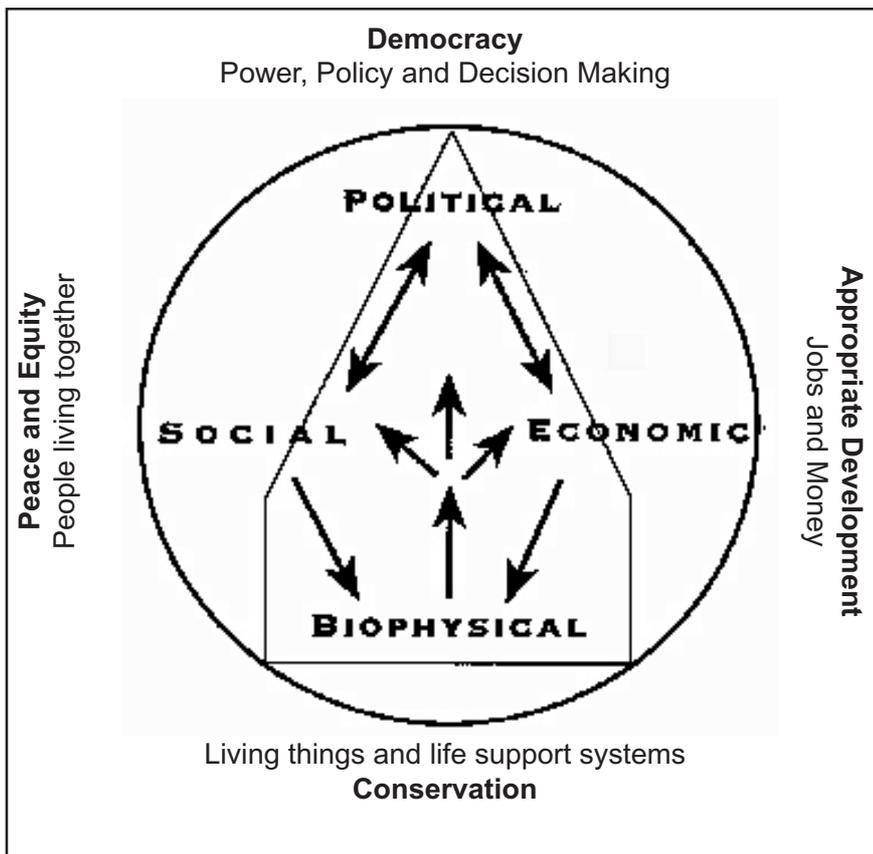


Figure 1. The Four Systems of the Environment R. O'Donoghue, Source J. Fein 2000.

creation of sustainable environments in which people can live and work" not only for the present generation but for all the future ones to come.

Important concepts for environmental education comprise; finite/non renewable resources, renewable resources and the "closed" life system, comprised of the four systems of the environment, namely: political, social, economic and biophysical. The well-known R.O. Donoghues's diagram (Figure 1. above) on the four systems of the environment illustrates the interrelation between them and the whole system as a "closed" one, moving within a circle.

2. Why Environmental Education for East Timor?

Many people, including researchers, academics, observers and politicians have voiced their concern at the alarming rate of environmental degradation in East Timor over the last 30 years or so. Many of them have explained the causes, which include economic, cultural and educational factors. I will leave the economic aspect to others and I will focus on the cultural and educational ones.

On cultural factors, I will categorise them into two major attitudes - positive and negative - that can still be witnessed all over the country, with variations in the larger urban centres. Positive attitudes towards the environment in the traditional society are rooted in their belief in the "Lulik", as well as resulting from social interactions and economic needs. "Lulik" as has already been extensively described earlier in this conference, attributes sacred values to many natural and man-made elements. "Lulik" attributes sacred powers to certain old and huge trees, rocks, springs, animals and mountains. As such, destruction of these elements by humans is totally prohibited. This functions very positively in terms of the protection and enhancement of the environment.

Practices such as tree planting along the boundaries of properties (either communal or private) are quite common all over the territory. A similar practice can be witnessed at every spring (water source), particularly in the countryside, where certain palm trees like coconut and betel-nut predominate, alongside huge banyan trees.

Unfortunately, these beliefs, and practices have been gradually eroded as civilisation and "education" made progress to the interior.

On the other hand, some social and cultural practices, which have had a highly negative impact on the environment, need to be dealt with seriously at all costs. They include; "slash and burn" agricultural practices, shifting cultivation, increasing urbanisation, wood-cutting for firewood and bush-burning for game or just for fun. Another cultural factor which needs reorientation is the custom of constructing houses on the slopes or on the tops of the hills accompanied by the subsequent clearing for gardens (ladang) on the slopes which contributes greatly to serious soil erosion and land degradation.

3. Environmental Education as a component of the School Curriculum

There is no doubt that every conscious Timorese sees and feels the need to do something to improve the condition of the environment. There is no doubt that education, particularly formal education, is seen as one of the major and powerful means to achieve that goal. Young people learn easily and quickly and can easily inculcate these attitudes in their values.

There was nothing in the curriculum of the previous Portuguese and Indonesian administrations in East Timor that contained any related-subject on Environmental Education. The Indonesian curriculum (Secondary School) gave some room for what is called "muatan lokal" (local content), which actually could be used for this subject. However, given the lack of knowledge and skills of teachers in this area, it summed up to what was called "kegiatan reboisasi" (reforestation activities), with dubious results.

During this transitional period, a "transitional curriculum" has been adopted to respond to the educational needs while efforts to come up with a national curriculum are under way. I believe and strongly recommend that environmental education should be gradually introduced in the school curriculum, from primary to at least the secondary levels. To achieve this, there is obviously a need to have a group of knowledgeable and skilled teachers in this area.

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Environmental Education

*Sue Lennox
Oz Green*

Education has an essential role to play in the rebuilding of East Timor. One of the greatest challenges for East Timor is to build a sustainable future after years of neglect and exploitation - of being shut out from the rest of the world. Education has the potential to act as the framework that supports all other sustainable development initiatives. In this context environmental education is better renamed as "education for sustainability".

The challenges for the world in general and East Timor in particular are immense and there is an urgent need to bring about change on a global scale. On World Environment Day last year, Klaus Toepfer (Executive Director of UNEP) said:

"Unsustainable production and consumption patterns in developed countries combined with poverty in the developing world, are the two main global environmental threats facing the world today".

I think the scale of this is demonstrated very starkly in East Timor - the inequity of our planet is shown right here in Dili where the "over-consumers" and poverty meet face to face.

Most environmental problems are a result of human behaviour. Education is a vital tool in bringing about the changes that are needed for sustainable development in East Timor - from skills training to schools programs - everyone needs to be involved.

Children have an important role to play but we cannot rely on an education program targeting only school children - environmental problems need action now - and it is the adults in the community that hold the power to lead the way and be role models for children.

In New South Wales, environment is one of the top concerns for people and the public sees environmental education as the single most important thing that the government can do to protect the environment (NSW EPA Survey 1997). However this strong education focus is not backed up through legislation.

Effective environmental education programs have the following features;

1. involve everyone,
2. lifelong learning,
3. promote active and informed participation,
4. holistic - bringing together local knowledge + expert knowledge + planning,

5. involve active learning (investigation - action - evaluation cycle),
6. lead to positive change,
7. visionary in approach,
8. perseverance.

1. Involve everyone

Environmental education needs to involve everyone - government, schools, universities, business, the community, the media and people of all ages.

2. Lifelong learning

Environmental situations are constantly changing and so is our understanding of how to best deal with environmental problems and build an ecologically sustainable way of living. Hence it is important that learning for the environment is a continuous process throughout our lives.

3. Promote active and informed participation

Local communities need assistance to develop the skills to become active and informed participants in the restoration and protection of the environment. This involves training and skill development in environmental assessment and planning so that local people can monitor the changes that are taking place in their environment and develop locally appropriate responses. In Australia we have many community programs such as Streamwatch and Landcare that involve hundreds of thousands of school students and local people in planting trees and protecting their rivers.

4. Holistic - bringing together local knowledge + expert knowledge + planning

The solutions to environmental problems lie with the people who are experiencing them. Local knowledge plays an important role in the development of appropriate strategies for Ecologically Sustainable Development. When this local know-how is combined with technical know-how - appropriate plans can be developed for sustainable development.

5. Involve active learning (investigation - action - evaluation cycle)

Effective environmental education is not just about learning - it is an active process of developing new skills and understanding,

developing strategies for action, implementing these strategies, reviewing the effectiveness of these actions and learning from them to develop better ways of acting. This ongoing process of learning, acting - reviewing - change, is an essential feature of effective environmental education.

6. Lead to positive change

The process of investigation and analysis helps local communities to define the changes that would bring about improvements in their situation. Local people take responsibility for bringing about change.

7. Visionary in approach

Effective environmental education not only assists people to address the challenges before them, but also to be active participants in building the kind of future they would prefer to have.

“The future is not a place we are going to, but a place we are creating. The paths to it are not found but made. The making of those paths changes both the maker and the destination”. (Motto of the Australian Commission for the Future).

8. Perseverance

Change can take a long time and happens in small steps. It is important to persevere. As ideas start to spread, a critical mass is reached and the pace of change can become quite rapid. East Timorese people are perhaps the world’s

“experts” in perseverance.

I am Co-Founder of a Non Government Organisation know as Oz GREEN – Global Rivers Environmental Education Network (Australia) Inc. Oz GREEN is a non profit organisation dedicated to enabling informed community participation in the care of the world’s waters and the development of ecologically sustainable ways of living.

The environmental education and action program that Oz GREEN is beginning in Oecussi is perhaps an illustration of these concepts:

- Working in partnership with the Oecussi Administration, ETTA EPU and Forestry Units and East Timorese NGOs FFSO and Haburas;
- Training and capacity building in environmental monitoring, water quality monitoring, community education and participation techniques and project management;
- Involving local villagers in assessing their environment, developing village environmental action plans and then assisting them to implement these plans;
- Working with schools and local people to actively involve them in taking action to restore the environment - establishing tree nurseries and replanting programs;
- Establishing community kitchen gardens that provide a practical demonstration of sustainable gardening techniques;
- Involving the whole community in developing an environmental action plan for Oecussi District.



Land Rights and Sustainable Development in East Timor

- Summary of full paper -

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Introduction

East Timor has experienced a long history with many fluctuations. As a result of extended conflict, both previous regimes did not prioritise land rights in East Timor. Land conflicts arising today have drawn attention to this issue. Uncertainty with regards to land ownership is the cause of many current problems in East Timor, and will continue to be into the future.

Rural communities continue to live according to the customs of their ancestors. Customary law is varied between patrilineal (*kemak*) and matrilineal (*bunak*) systems. The same applies to Customary Land Law. Proof of land ownership by a piece of paper has never been thoroughly instituted in East Timor.

Over the past 500 years there have been some benefits for urban communities especially in Dili. In 1975 registered land/land with proof of ownership (*Alvara*) numbered around 2,709 parcels. During the 24 years of Indonesian rule, this increased to between approximately 44,091 and 46,800 land parcels (Nalle 1998:10). This means that only 4.4% of land parcels owned by the 186,743 heads of families in East Timor (East Timor in Figures 1997:37) were accorded a clear status.

Much proof of land ownership (*sertifikat/alvara*) was destroyed along with property and possessions in 1975 and 1999. At present, proof of cultivating the land and statements from the community are available though they may be contested.

Regulation No. 1/1999 gave UNTAET the mandate to administer all movable and immovable assets in East Timor, both government owned and those abandoned after the 30th of August 1999. The UNTAET Land and Property Unit allocates land/properties to investors/private sector conducting business activities in East Timor. Around 250 allocations have been made through Temporary Use Agreements (TUA).

On the 25th of October 2000, the UNTAET Cabinet decided that the Land and Property Unit would not register rights but would receive land claims in East Timor. Land rights would only be decided conclusively after independence. This decision clarified the functions of the Land and Property Unit during the transitional period.

Land Rights and Customary Law

Land rights are effected when a member of the group that owns the land (*ema rai nain*) and members of other groups (*ema rai seluk/ema lao rai*) reach agreement and put a marker on a certain area of land (*tara tada*). Then the land is marked as cultivated land (*lere rai or fila rai*) (Xavier: 1997). Consequently if the land is cultivated continuously, the cultivator has the right of ownership (*rai ninian/aurea*). If the land being worked and planted is abandoned, the owner who first cultivated the land has the initial right (*toos fatin or natar fatin*). This initial right of indigenous people/clans can be passed on to heirs. Those who are not members of the group that own the land only have rights over produce from the land (*halo deit han deit*). Such a land ownership system fosters shifting cultivation, after crops have been harvested, and the fertility of the land has decreased.

Land and Sustainable Development

Every activity on the Earth requires land. Land resources need to be conserved and protected from degradation to ensure harmony with nature.

Physical aspects of land such as site dimensions, location, and topography do not change much over time. However land use and production do change, as do rights and ownership, both of which change relatively often.

The physical and legal aspects of land management are like two sides of a coin. They can be differentiated but cannot be separated. Many land use problems are due to uncoordinated land management, that in turn is the result of development planning that is isolated by sector. Land management needs to be integrated across sectors.

The land issue that is increasingly affecting government agencies and the community in terms of development is how and where can we obtain suitable land for development.

Conclusion

1. The current problem in terms of land tenure is the uncertainty regarding the status of land due to the change in legal system. We are attempting an integrated approach to create legal certainty over land ownership.

2. The availability of suitable land needs to be guaranteed for the various development sectors, to encourage as much investment as possible in order to achieve economic growth.
3. The issue of sustainable development is not only one of integration between related agencies but requires a united viewpoint amongst all parties involved, including the executive and juridical bodies. This approach is necessary because environmental and land issues are related.
4. With an increase in development, comes an increase in the number of requests for land.

Consultations should be held with landowners to avoid problems that may obstruct the development process. Problems arise in terms of control and ownership of land held with land titles. Principles that need to be considered include:

- development should not decrease the area of fertile agricultural land and should account for preservation of natural resources;
- the interests of investors and those affected by the project should be balanced.

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Customary Land and Sea Tenure for Sustainable Development

Dr. Graham Baines
Environment Pacific

The idea of recognition and support of customary land and sea tenure as a basis for sustainable development is sound, not least because tenure is such an important expression of social relationships. However Pacific island countries have found it difficult to re-establish a form of traditional land tenure that is satisfactory in all ways. Some of the problems faced are listed. Examples of different approaches to the question of legal support for customary land are given. Even where customary land rights of ownership and access have been settled, there are difficulties in using legally supported customary ownership as a basis for economic development.

Through both colonial regimes, and despite official opposition, East Timorese have retained knowledge of traditional arrangements for the inheritance and allocation of land and of rights to the use of the resources of that land. These tenure arrangements, with associated local knowledge of natural resources and of biodiversity, together make up local resource management systems. Sea rights derive from coastal land rights. Where the communities concerned are land oriented, sea tenure may not be expressed as strongly as land tenure.

At the departure of colonial powers, all Pacific island countries made efforts to reclaim and restore their customary tenure systems. Times and circumstances have changed, however, and this has proved to be a difficult task.

It is important to sustain a customary base for land and sea areas, not least because tenure is such an important expression of social relationships. However, in Pacific island countries it has been difficult to re-establish an appropriate form of traditional land tenure, because:

- Customary land allocation (determined by inheritance, residence, marriage and other social associations) was never a fixed process. Decisions were based on certain principles, but there was a flexibility which meant that decisions could be made to fit changed circumstances.
- If customary land rights are to be given legal standing, then how are they to be described, and at what point in the evolution of local custom are the principles to be fixed?

- The tradition of passing on genealogies verbally to following generations is fading as the authority of knowledgeable elders has been weakened. Consequently, younger people are less well informed of their rights and obligations. This increases the level of disputation of land claims.
- Not all of the individuals living on a specific area of land are part of the group that collectively “owns” that land. However, their access to that land has been protected under custom and their customary rights may be at risk if the “owners” are given formal legal ownership.
- The saying “a little knowledge is a dangerous thing” applies. Some individuals have been skilful in using courts to present false genealogies that sound more persuasive than those of the true owners and, so, have been able to dispossess the latter.
- The current customary pattern of land distribution to some extent reflects the outcome of fighting which took place long ago. Descendants of the losers of past battles may be those who today have access to little or no land.

Pacific island countries have approached the question of legal support for customary land in different ways. In the Solomon Islands a simple approach is adopted under a *Customary Land Boundaries Act, 1998*. This provides for the registration of land boundaries and the name(s) of the tribes or clans that collectively “own” the land within the registered boundaries. The difficult task of agreeing on which individuals are members of the owner group is left to the concerned communities to decide. Disputes about who qualifies are common.

In Papua New Guinea the *Incorporated Land*

Groups Act, 1974 does provide for identification of “landowners”. This is done through a process of “social mapping”. Fiji began registration of customary land about ninety years ago. The task took fifty years to complete. Indigenous Fijian land is administered by a Native Land Trust Board, and a special register is kept for indigenous Fijians, each listed under the clan into which the father was born.

Even where customary land rights of ownership and access have been settled, there are difficulties in using this legally supported group ownership as a basis for economic development. Land equity may be considerable, but financial institutions cannot secure that land against loans for development. A simpler path to economic returns from land, through leasing a portion of it, is also problematical. Even though a lease has a fixed time period, the presence of others on one’s ancestral land is sometimes perceived to be a form of “occupation” which could lead to loss of the land. Another difficult development issue is economic returns from timber cutting and from mineral resources on and under customary land. Who is to receive what? Inequitable distribution of benefits from customary land can be a serious threat to social stability and, so, to sustainable development.

The reasoning behind the idea of recognition and support of customary land and sea tenure as a basis for sustainable development is sound. There are useful lessons to be learned from attempts elsewhere, but the approach must be East Timorese, and must face issues such as the differing status of *adat* (customary law) and of particular groups in society in relation to customary rights, and of what is to become of individuals long settled on land to which they do not have an ancestral claim.



Social Workshops

Education Workshop

Issues Identified: No teacher expertise on environmental education • Local communities do not understand about environmental problems • Breakdown of traditional law during Indonesian occupation • People lost knowledge of traditional customs that protect the environment; not supported by government • Breakdown of traditional environmental assessment and protection/ laws on what can be used (own use only, not for sale.) • Indonesian invasion imposed another system of thinking/ awareness/ law • Difficult to incorporate traditional law into curriculum • Lack of information about traditional law and how it varies across East Timor • Families not involved in environmental problems • Lack of funding for environmental education – not seen as a priority • Lack of teaching materials and curriculum for environmental education • People are used to being told what to do not to show initiative, be active, resistance • Traditional law • Lack of funding for environmental education • Indonesian system, regional curriculum – not any more • Social studies had small section of environmental education – some taught, others did not • UNICEF proposes to support environmental education teacher training and curriculum development • Many East Timorese teachers want less chalk and talk • Environmental education needs to be active and outdoor • Teachers want the curriculum to be more local and cultural • Environmental education into formal curriculum and subject on its own • Active teaching/ learning, problem solving approach

PRIORITY ISSUES	STRATEGIES
Breakdown of traditional law during Indonesian occupation – lack of information about traditional law and variations across East Timor.	<ul style="list-style-type: none"> • Develop environmental education teaching materials based on local traditional law ➔ document law throughout East Timor. Specialist environmental educator to work with local teachers to develop resources. • Schools could research traditional law in their local area • Formal government law needs to be supportive of traditional law
Lack of teacher expertise in environmental education and “active” learning	<ul style="list-style-type: none"> • Team of teachers to work with specialist environmental educators to develop curriculum and teaching resources ➔ “train-the-trainer” program to deliver to all East Timor teachers • Sister schools programs • Teacher exchange program
Lack of funding for environmental education	<ul style="list-style-type: none"> • Prepare a resolution to put to conference recommending environmental education be a priority • Environmental education members of task force – meet with UNTAET/ CNRT for support • Strengthen links with environmental education groups in Australia • Strengthen capacity of national NGOs in environmental education
Lack of teaching and learning resources, lack of environmental education curriculum	<ul style="list-style-type: none"> • Environmental studies as a separate subject • Environmental education materials across all curriculum areas (maths, science, language etc) • Resources need to promote active learning – perhaps extra-curricula activities involving family and village

Health Workshop

Issues Identified: Improvements to structure and infrastructure – health, waste disposal, water • Education, promotion and training (formal and informal), regarding nutrition, general health and sanitation (schools/media) • No equity in health service in village area, Timorese staff • Environment: air, water, living conditions, waste disposal • Capacity building and transfer of skills to Timorese people • Budget • Maternal Health • HIV/AIDS • Social and economic factors • Quality of medical services is poor • Urbanisation • greater stress • Policies; environment (water/air pollution), cleanliness, road safety (information required) information required • Lack of professional staff.

PRIORITY ISSUES	STRATEGIES
1. Improvements to health structure (organisational/social) and infrastructure (physical)	<ul style="list-style-type: none"> • The government must rebuild health infrastructure that was destroyed • A comprehensive plan needs to be drawn up
2. Education and promotion of general health issues	<ul style="list-style-type: none"> • The government must implement a basic health education program • The government must produce a manual on health education that can be used by all organisations and groups • Health education must be part of the national curriculum • The government must implement a public education campaign with posters, brochures and calendars in all districts • Education campaigns must include courses for administrators and management as well as doctors and nurses
3. No equity in health services in rural areas	<ul style="list-style-type: none"> • More medicine needs to be made available to the public
4a. Health policies 4b. Capacity building	<ul style="list-style-type: none"> • All programs implemented by NGOs, the government and community groups must consider health issues • Management of health services must be improved • Medical staff need to be recruited

Gender Workshop

Issues Identified: Negative impacts of Indonesian invasion and western influence in the transition (e.g. clothing, mistresses) on East Timorese women • Education for both women and men • Husbands and wives • Family planning, health • Polygamy • Capacity building, e.g. participation in decision-making • Empowerment of women at village level • The role of culture and the role of the church and its voice for the women of East Timor • Getting men and women to work together to raise awareness of gender issues • Access to resources • Water, sanitation, and health of the family • Policies, laws, and programs.

PRIORITY ISSUES	STRATEGIES
Capacity Building i.e. participation of women in decision making, skills giving, agriculture. Training (both through formal education system and informal courses)	<ul style="list-style-type: none"> • Increase public awareness • Informal courses
Education for both men and women	<ul style="list-style-type: none"> • Library classes (some already) • Public information campaigns (posters/ pictures, radio, TV) • Informal education • Strengthening education system – provision of more schools, teachers, books etc.
Access to resources	<ul style="list-style-type: none"> • Legislation for women to own property • Education for women to apply for credit • Lobby banks for gender sensitive lending policies
Water sanitation and family planning and health of the family	<ul style="list-style-type: none"> • Provision of water to villages eg pipes to springs • Education to boil water before drinking • Enforcement of regulations re. deforestation (no. 17) • More nurses/mid-wives in villages • Improved construction of latrines



Land Tenure

Issues Identified: Who owns the land in East Timor? • Recognition of traditional property rights using what mechanism? • Air space above land and water and below earth to be included when we talk about land • Who owns, who controls, who regulates, who uses? • Need to define different types of property rights • Government doesn't own land – limits to government control • Regulation of foreign ownership • How to deal with existing investment? • What regulations should there be? • Size limits on land ownership? • Does UNTAET have authority over land or a new government? • How does UNTAET deal with people returning who owned land in Indonesian times, especially Indonesian citizens? • How is extraction of resources from land going to be regulated? • Land zoning • Conflict between traditional rights and other demands for land resources.

PRIORITY ISSUES	STRATEGIES
Who owns the land in East Timor?	<ol style="list-style-type: none"> 1. Only East Timorese can own land in East Timor 2. Ownership according to traditional mechanisms 3. Need to determine citizenship of East Timor 4. Rights of use of land by foreign investors 5. Government to solve disputes over land between East Timorese 6. There should be regulations to cover points 1-5 7. This should start now 8. Consultation with customary leaders in the development of regulation
Regulation of foreign ownership	No time to discuss
Size limits on individual ownership	<ol style="list-style-type: none"> 1. We need to set criteria to question if and to what extent we should set limits on land ownership 2. Setting limits on land ownership is too impractical to practise 3. There must be limits on land ownership or the poor people will suffer by not having access to land ownership 4. Need to find out population of each district 5. Need for government regulations to recognise: <ul style="list-style-type: none"> - individual land - companies land - traditional land (<i>tanah adat</i>) - agricultural land - industry - tourism <p>Companies cannot own land, they can lease it from the government or from private landowners.</p>
Conflicts between traditional rights and other demands on land resources	No time to discuss

Youth

Issues Identified: Involvement of young generation • Access and set level of education – provide exposure • Lack of confidence in younger age groups • Unemployment • Participation • Education • Lack of unity • Organisation • Education of post-Indonesia generation • Psychological recovery and resilience • Assess pros/cons of globalisation for East Timor • Training regarding economic influence of other countries • National uncertainty regarding future and lack of confidence • Participation in decision making.

PRIORITY ISSUES	STRATEGIES
Education	<ul style="list-style-type: none"> • Funding – teachers, schools • Training of teachers (especially ex-patriots) • Work with international NGOs • Improve regional education facilities • Raise teacher salaries as incentive • Promote teaching as a career • Language training; Portuguese (most important), English
Globalisation	<p>Promote positives:</p> <ul style="list-style-type: none"> • Improve local product quality (natural/ human) • Cultural centres to educate regarding Benefits of other cultures • Free press (international) • Internet training and access to remain 'up to date' • Minimise negatives • Work to limit imports with duties etc. • Outlaw duty free for internationals.
Participation in decision-making	<ul style="list-style-type: none"> • Use 'youth groups' for discussion etc. then use as input in the parliament/political process. • Government openness to youth representatives in traditional system • Transparent government and dialogue • Leadership training





Sustainability and Democratic Governance in East Timor

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Sustainable development strategies are gaining recognition as highly appropriate courses of action for many countries. Recent UN World Conferences and major international initiatives during the last decade (such as in Caring for the Earth and Agenda 21 from the 1992 Rio Earth Summit) have highlighted their importance, calling for a global strategy for sustainable living and development at all levels of society.

There is growing recognition of the link between infrastructure investment and sustainable long term economic growth. Governments do not have to choose between environment and development. If environment is the total stock of natural and social resources available to humans and other species, development is the utilisation of human and natural resources to advance the welfare of people. Therefore one must be planned in light of the other.

The definition of sustainable development has gone beyond mere environmental conservation to include good governance, social cohesion, and even gender equality in a holistic approach to "life systems" that stress people's integral link with the total environment. Good governance is about the well being of the nation and the people. It is primarily based on a public administration committed to democracy, justice, liberty, equality, and efficiency while at the same time promoting a fair, safe and sustainable living environment for all. Because sustainability can only be ensured if people are involved in the decision making process, central governments can no longer act alone and need to develop partnerships at all levels of government including local governments and society in order to have these common goals achieved effectively. This requires a major shift in thinking to decentralise power to the lower levels if the principles of sustainable development are to take root and to produce meaningful results.

National Plan on Sustainable Development

Decisions relating to sustainable development in almost all parts of the world are made at two

levels: the policy level to provide directions for achieving the goals of sustainable development at the national level, and the implementation level which is left to the major agencies in the environmental field, especially those associated with conservation of the environment, pollution control, and regional and global environmental issues including communities and civil society at large.

At the policy level, in order to promote sustainable use of East Timor's natural resources, in my view, the first step that we should take is perhaps to create a National Plan on Sustainable Development to guide integration of environmental concerns into development policies, economic decisions, and investment planning. Here, this new emerging country, at some stage, has the choice to engage itself with international conventions and policies on sustainable development. We must be committed to the implementation of Agenda 21 and related international agreements reached during the Earth Summit. Principles of Sustainable Development must become the foundation of our national development planning. To do this the state can adopt international strategies and indeed there are many international organisations to work with, such as the International Union for Conservation of Nature (IUCN), International Council for Local Environmental Initiatives, and the Earth Council.

At the implementation level, there are a number of things that can be done including establishing various institutions and mechanisms aimed at introducing the practices, plans and programs of sustainability into development programs. This must be a participatory process involving government and non-government stakeholders. There is a strong role for the private sector to play in the implementation process of sustainable development. At the moment the promising sign of real progress is the strength and dynamism of NGOs in the country at large (there are currently over 170 local and national NGOs in East Timor. Among these, although a certain number of them may not be sustainable in the long run, those which are strongly committed and



rooted in the community or interest groups will develop and grow). It is these NGOs with their commitment to public participation and empowerment, that may prove the guiding force of environmental consciousness and action in the future.

Similarly, research institutions, universities and private bodies could perform the educational and research functions associated with the implementation of environmentally sound and sustainable strategies.

Democratic Governance

During the past decade, new ideas have arisen which underline the importance of communities and individuals, and which highlight the relevance of civil society and human resources in the development process. The UN *Earth Summit* concept of sustainable development, the UNDP concept of human development and the approach to people-focused urban development, have helped to shift the emphasis towards more participatory methodologies in the field of development planning.

Governance in the context of East Timor entails the building of a new nation, the role and the structure including the configuration of basic pillars of governance. Successful initiatives to promote democratisation and development depend on adequate capacity and resources being devoted to the strengthening of lower levels of government, especially local government institutions and on good communications including recognition and mutual respect between different spheres of government.

There is a need to increase public inputs into the running and direction of governance and public services. And yet, democracy denotes a political system in which the eligible people in a policy participate actively not only in determining the kind of people that govern them, but also and more importantly shaping the policy output of the government. Decentralisation is an important mechanism to ensure people's participation in the development process. Decentralising government from the central level to other levels of government enables people to participate more directly in the governance process. This needs an effective local structure that can facilitate the participation of people in the political life and ultimately be accountable to the people, not just to the central or higher levels of government.

Only with an effective public management and technical capacity in government, will East Timor be able to sustain social and economic development in the long run. The two previous

regimes (particularly the latter) were highly hierarchically centralised which, as a consequence, alienated people from decision making and they were not accountable to the people. Unfortunately the current structure of local government under UNTAET is still inspired by and essentially replicates that system. It is important to be aware of the undemocratic elements that exist from this old model of government system, which was created mainly to control people and to serve the interests of the foreign powers. If these structures are to be continued in an independent East Timor, sustainability will be in danger and people will still be alienated from decision making because the distance between the citizen and decision making processes which is reflected in this structure is felt to be great.

The big challenge for us now is to take appropriate actions including the design of local democratic structures by eliminating these unnecessary structures and bureaucracy to ensure that principles of democracy and genuine participation are promoted in all local and community governments. Civil society organisations representing all sectors of the community, which are independent of the state and the corporate sector must be encouraged to debate and suggest policies and to be actively involved in the process of decision making. Local government should be held accountable to their citizens primarily with a political role reflecting the collective interests of the community. Hence, emphasis is placed on mechanisms of citizen consultation through civil society organisations that incorporate the views of local "actors" (such as the business sector, youth and women's groups, and neighbourhood forums) in the formal policy making process. Local accountability can be strengthened by a high degree of transparency of the local government administrative process (e.g. local government files open to the public). Democratic governance must be transparent, allowing citizens easy access to information about administration and particularly about the use and allocation of public resources.

The extent to which sustainable development policies and practices are successfully implemented depends upon a number of factors including: an institutional design and structure that allows the involvement of all citizens in the process of decision making; and a clean, transparent and accountable government at all levels, coupled with an open, democratic and participative society in *Timor Lorosa'e*.



Governance and Sustainability Development

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Sustainable development (SD) should be a central concern for governance. SD is a broad theme covering not only planning and budgets but also national security, social justice, international obligations and opportunities. Governance for SD depends upon a satisfactory relationship between government, business and civil society. SD will depend upon a commitment by senior leaders and across all parts of government. The necessary capacity building may be helped by various strategic alliances within East Timor and with other countries. SD will be fostered by an approach to governance built on transparent decision-making, accountability, and corruption-free practices; by international cooperation; by a robust poverty reduction effort and sustainable resource management; and by full participation and development of civil society and community level institutions.

Governance is broad in scope covering the means and approach of how power is exercised. Governance must deal with the complex power sharing and actions of government, private sector and civil society in arriving at solutions to societal issues. Now more than ever we understand governance not only in national and local terms, but also in relation to regional and global events and outcomes. Sustainable development should be a central objective for governance, but it should be viewed in the context of national security, social justice and international obligations and opportunities.

The form of the political regime will, of course, shape governance approaches. The encouraging aspect in East Timor is the current commitment to social justice. Hopefully this will be a pathway to a participatory form of regime consistent with sustainable development. As the World Bank and others have repeatedly pointed out, the operational concern in governance is how to “design, formulate and implement policies” and to adequately “discharge functions”. Generally this capacity falls short of the expectations, especially of the governed, and of international agencies providing loans and other support. Thus it is important to establish realistic expectations for goals and timing, and not to create overly elaborate decision-making processes. Achieving sustainable development involves integrated approaches, which are inherently difficult to

implement – a further reason not to establish too many initial undertakings.

The principle of *subsidiarity* is helpful. It is linked to the devolution of power – only take decisions at the national level when they cannot be handled adequately at the local level. Linked to this approach is the value of an enabling or facilitating role of government that helps to build or reinforce local capacity rather than imposing central authority unnecessarily. Use of economic instruments as an important alternative to command and control environmental regulation is an example of how this may be done. Another example is legal and operational recognition of traditional laws and knowledge within a framework of co-management.

The foundation of governance, of course, is the framework of laws and regulations operating at the local, national and international levels. Increasingly, there is a need to ensure that national laws reflect conditions and obligations set out in multilateral agreements such as the Biological Diversity Convention or the Law of the Sea. From this foundation flows the institutional structure and process for exercising authority. There is remarkable latitude in designing institutions for issues such as environmental protection.

But there are certain questions on how best to design sustainable development governance. Should there be dedicated sustainable development institutions and laws, or should sustainability concerns be incorporated throughout the legal framework and within all units of government? The former approach will not work on its own, and there is still a need for coordination if the latter approach is followed. Stated another way, the question is whether a national law for sustainable development is essential, and whether a national SD administrative unit is required. The response of a new state to this question may be different than responses of many well established nations. East Timor is starting with a fresh slate without strong vested bureaucratic interests.

Most countries have chosen to reform their existing legislation, adding sustainable development elements to sectoral and to environmental laws. Few have comprehensive sustainable development legislation. At provincial or territorial levels the situation is more variable. The Province of Manitoba in Canada has

a Sustainable Development Act. Canada's newest territory, Nunavut, has a Sustainable Development Department.

The essentials for incorporating sustainable development into governance are: an overall commitment to and accountability for SD performance by the national leadership and all senior civil servants; a capacity within planning and finance to set goals and budgets based on SD principles and needs; sectoral commitment to SD goals; laws and regulations that recognise the role of individuals, communities and business in SD implementation; effective compliance mechanisms; a foreign service capable of participating effectively in international environmental, sustainability and economic negotiations; and a societal capacity to acquire and disseminate technical and management knowledge for SD implementation.

This list presents a tall order for a small

country. Strategic alliances with like-minded countries and various sources of expertise are needed. Within East Timor the key challenge may well be to form constructive relationships among government agencies, businesses and communities in order to implement effective sustainable development with low transaction costs. Some useful starting points may include community-based natural resource management (e.g. forestry and fisheries); effective voluntary measures for industrial pollution control; and simplified environmental assessment procedures.

Governance for SD demands transparent decision-making, accountability, and corruption-free practices. It can be fostered by international cooperation, a robust poverty reduction strategy, and by full participation on the part of the financial sector. Civil society organisations can and should be enhanced by the process.

The Role of Civil Society Organisations in Sustainable Development in East Timor

Arsenio Bano

Executive Director, East Timor NGO Forum (FONGTSL)

Civil Society organisations in East Timor

Civil society organisations are organisations that are formed in society, separate from the government and private sectors. They are involved with social issues that are the concern of all members of society. Civil society is composed of community organisations that are distinct from the government apparatus.

Non-government organisations (NGOs) and community organisations play a key role in society. A fundamental role of NGOs in sustainable development is advocacy, monitoring and influencing government, and ensuring people's participation in the democratic process of government. Good governance is the domain of civil society, with a focus on democracy and human rights. Civil society also plays a key role in monitoring judicial institutions that are the foundations of democracy and fundamental to the protection of human rights.

Environmental groups espouse the principles of sustainable development. Sustainable development ensures equity between the current and future generations. Consumption of natural resources by the current generation should not threaten the quality of life of future generations – consumption should only be at the level needed to meet current needs.

East Timorese civil society is experiencing

rapid development during this period of transition. The situation has been transformed from one of oppression and fear, to one where people are empowered to claim their rights and responsibilities as citizens.

This transformation involves the shift from resistance organisations fighting for the nation's freedom into organisations working hard in preparation for the independence of a new nation.

Many civil society organisations here in East Timor are community based organisations that worked underground during the Indonesian occupation. New associations, student groups and newspapers have now also been established, not only in Dili but also in several districts. In the past year an umbrella organisation for civil society organisations has been formed. It is called the East Timor NGO Forum. The NGO forum now has 60 national NGOs as members (according to the minutes of the NGO Forum General Meeting of 12-13 December 2000). In the last 18 months, more than 130 national and 73 international NGOs have registered at the NGO Forum.

Over the past few months, members of the Forum have discussed and put forward their opinions on draft regulations that have been issued by UNTAET/ETTA. This is an effort to advocate for the community, and influence the policies of the transitional government. In the past

several weeks, several community radio stations have been established. The community radio station that is run by the Student Council at the University of Timor Lorosa'e (UNTIL) is a reflection of efforts to enhance the role of civil society organisations in East Timor.

The role of civil society organisations during the transitional period

It is difficult to measure the achievements of NGOs in terms of the preparation of a strong civil society in East Timor. The future will show how successful community organisations have been. There are still many opportunities, and much still needs to be done. NGOs and community organisations still have time to develop short and long term strategic plans. Keeping in mind the many limitations, it is important to remember that one of the roles of NGOs in sustainable development is to encourage participation and mobilisation of individuals and groups in the planning and implementation of development programs. It is hoped that the work of the non-government sector will foster partnerships between government, the private sector and civil society in the development of East Timor.

In discussions about the development of the strategic plan for the NGO Forum, in August 2000, it was recognised that one of the evident weaknesses during the transitional period is the low level of community participation in influencing the transitional government's policies. This means that many regulations have been put in place without comprehensive community consultation.

The Annual General Meeting of the NGO Forum was held on the 12-13 December 2000. It was attended by more than 140 national and international NGOs. Since that time, the Secretariat of the NGO Forum has examined several means whereby the relationship between the government and civil society can be developed. Possible scenarios of relations between government and civil society are identified by Alison Van Roy (1998) in her discussion about the development of civil society in Hungary. According to her, the worst situation is when a good relationship between government and civil society organisations becomes confrontational and the government subsequently tries to block the work of community-based organisations.

The second scenario is where NGOs' role is only as contractors delivering services for government. In such a situation, the government only aids those organisations that are in its favour. In this situation, the non-government sector

essentially functions as an extension of the arm of government in delivering services to the community. Meanwhile the government ignores those NGOs that aim to influence policy and decision-making processes that have a bearing upon the lives of the people.

The third scenario is the ideal situation. This is where the government regards community-based organisations as partners in identifying and fulfilling the needs of the community. In this situation, NGOs work together with government in preparing, developing and implementing policies that influence community life.

This year the NGO Forum along with other national NGOs has been focussing our work upon increasing the capacity of the Forum and other NGOs in information dissemination, advocacy, research, training and coordination. In terms of advocacy, the Forum aims to increase the involvement of local communities in the monitoring and analysis of programs being prepared by government and other major bodies.

NGOs in East Timor have a key role to play facilitating and building relationships between civil society, government and the private sector. It is crucial that this is done well, so that a confrontational relationship does not eventuate. Stronger partnerships also need to be built between NGOs in order to develop East Timorese civil society itself. Relationships between local NGOs as well as between those from the North and those from the South are vital. In a new nation such as East Timor, developing the role of civil society organisations is complex, not only in terms of social programs, but also in regards to developing partnerships with international NGOs, donors, and government. Developing such relationships is very important because East Timorese NGOs are very dependent upon the donors and international NGOs that are now in East Timor.

The role of the transitional government, UNTAET/ETTA in developing civil society

One of the advantages of this period of transition in East Timor is that it provides us with the opportunity to prepare ourselves for the future. An important issue that should be emphasised by UNTAET/ETTA is the need to design plans now that will still be relevant in the future. This should be achieved by emphasising the participation of civil society as much as possible, and ensuring that civil society organisations have an opportunity to be involved in the development of government policies. The practice of decision making in the transitional government, however, currently does not involve



the community in a broad sense – it is inclined towards centralisation. We are in strong agreement with Emilia Pires, the Head of the National Planning and Development Agency (NPDA) that action must reflect the ideas, opinions and will of the people of East Timor in terms of their wishes for the future, for their individual communities and their nation as a whole.

Conclusion

Sustainable development will succeed if development programs reflect the wishes of the people of East Timor. Thus NGOs must

Reference

- Alison Van Roy, 1998, *Civil Society and the Aid Industry*, Earthscan.

Environment and Civil Society

Emmy Hafild

WALHI Friends of the Earth, Indonesia

Civil society plays an important role in protecting the environment. There are a variety of means by which civil society advocates for the environment.

1. Environmental Advocacy Groups

Advocacy for the environment is always required. The basic principle is; *don't leave the government and companies to work alone* without the involvement of the community.

Advocating for the environment includes a broad range of activities including policy advocacy, law enforcement, public education and community organising.

Policy Advocacy

The activities associated with policy advocacy and law enforcement include:

- a) challenging and changing environmentally destructive policies;
- b) proposing new laws and regulations for environmental protection;
- c) enforcement of environmental laws via litigation:

under Indonesian laws no. 23-1997 that have been temporarily adopted here in East Timor, litigation to enforce environmental law can be undertaken using legal standing or class action. Weiweik Awiati will talk about this in more detail in the workshop on environmental law;

- d) corruption watch;
- e) corporation watch.

Public Awareness

Raising public awareness is a very important role assumed by environment groups. This involves environmental education and

participate in the design and implementation of development programs. This will occur if there is an increase in cooperation and coordination between ETTA, NGOs and donors. The involvement of grassroots organisations, particularly those in the Districts is crucial. Sustainable development is equitable development that has long term relevance. Development programs should be designed and implemented with full participation from community-based organisations, the government, and the donor community.

campaigns. Examples of issues that require public education are waste disposal and the importance and means of conserving endangered species.

Environmental advocacy groups play an important role in resistance movements. This involves work with local communities to oppose environmental destruction. Campaigns targeting a specific local issue can be very effective. Community based environmental management can also be organised by environment groups.

2. Approaches to environmental protection

Organisations may take a conservation based approach, or a rights-based approach.

Conservation based

A conservation based approach prioritises the protection of ecosystems, and endangered species. These are considered to be more important than humans.

Rights based

Another approach is the environmental justice approach. This involves protection of the environment while also struggling for social equality, democracy, and human rights. Generally environmental groups from developing countries such as East Timor and Indonesia take the second approach. The Indonesian based environment group that I work with, WALHI, takes such a rights-based approach.

Protection of the environment can also be approached in terms of indigenous rights. As already discussed, the approach of management of the environment and natural resources by the

community can also be very effective

3. My recommendations for the agenda here:

- Monitor government policy and law making, both of UNTAET, and of the soon to be elected Timorese Parliament.
- Monitoring of donors, such as USAID, UNDP, ADB, and the World Bank as they are likely to cause destruction of our environment.
- Enact new environmental laws—East Timor’s versions, acknowledging indigenous rights.
- Management of the environment by the community—don’t let control of the forests be taken away by corporations. The community

must retain the right to control and possess their forests.

- Watch incoming investors—don’t repeat Indonesian mistakes.
- Watch for corruption—the government will almost certainly be corrupt.
- Struggle for transparency, accountability and participation in democracy.
- Base policies on local customs—do not destroy those local customs, but combine them with a good democratic system.

Act now, while the government is still close to the people, the longer the government is in power, the further away they will become from the people.

Culture and Tradition

M.Olandina J.C. Alves

East Timorese Women Against Violence (ET-WAVE)

We often hear the words CULTURE and TRADITION being spoken. Culture and tradition are often used to justify violence towards others. In fact, many of us do not actually know or understand about CULTURE and TRADITION.

I would like to thank the organising committee for the opportunity to speak, and also to thank those participants who have come from the districts to attend this conference.

I have been invited by the organising committee today to present a paper about CULTURE and TRADITION in the context of the theme of this conference—Sustainable Development.

The time that is available is very limited, so I cannot cover everything in detail about CULTURE and TRADITION now. Thus I do not want to talk from a paper here today because that will not be useful. I would only like to remind everyone in this room, the organising committee, the participants and the speakers, that if we talk about development in East Timor we must not forget that development of our nation is occurring now. That is why we are all here. Do not let the East Timorese people once again become spectators in our own country. Do not think that what is being done is the best for the East Timorese people. It is still assumed that the East Timorese people cannot do anything. We have to put an end to all such assumptions—only then can we speak fervently about development. Even that is not enough if the people of East Timor themselves are not involved in development that is actually for them.

It is important to remember that East Timorese people have our own culture and traditions—

distinct from the cultures of other peoples.

For 450 years the Portuguese colonised East Timor bringing their customs with them. During that time, East Timorese people endured the imposed culture as if it was their own. Then the Indonesians came with their culture. East Timorese people were forced to not only follow but also to acknowledge Indonesian culture as their own. Even more devastating, there were some East Timorese people who complied with the assertion that the two cultures were one; that we had returned to the earth mother after such a long time being separated by colonisers. Such people forgot that the Indonesians were also colonisers, differing only by the colour of their skin. More saddening still, development was only for the benefit of Indonesians; they never consulted the East Timorese people, and never invited us to work together with them in our own country.

Now everything has changed and the time has arrived for Timorese people to be included in the planning and development of our beloved East Timor. Our own CULTURE and TRADITION will no longer be ignored.

As a message to all participants, let us delve into and study in more detail our CULTURE and TRADITION so that other people will not say again that we do not have our own CULTURE and TRADITION. And more importantly: other people and the world must know and recognise that we have our own CULTURE and TRADITION. Now that we are an independent nation, anyone who comes here is obliged to respect our CULTURE and TRADITION.

How can International Environmental Law assist East Timor?

Lisa A. Ogle

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Of what relevance is the international environmental legal framework to the emerging nation of East Timor? How can it be of use? Achieving sustainable development is a global problem and the principles for sustainability are therefore reflected in many international treaties. East Timor can make use of the work already carried out on sustainability at the international level. It should consider whether it wishes to adopt sustainability principles and environmental rights in its Constitution of basic rights. It should also consider how it could implement these principles in its new environmental laws. East Timor may also be able to obtain financial, technical and legal assistance under some treaties and through joining some regional environmental networks to help it develop and implement a new environmental legal framework.

Introduction

Why do we have international environmental law?

Over the past 20 years, the international community has recognised that development around the world has not been sustainable. Globally, we are depleting our natural resources such as fish, forests, soils and fresh drinking water very quickly. Biodiversity is threatened. Pollution from one country crosses the boundary into another. For example, carbon dioxide pollution generated in one country will contribute to the warming of the entire planet.

The causes of environmental degradation are also similar around the world; excessive consumption and development, rising population pressures, poverty, hunger and armed conflict. There is a need for the international community to address the causes of poverty and to ensure that wealth and technology are shared fairly between countries.

The response from the international community has been to develop international laws that provide the framework for ecologically sustainable development (ESD) to take place. International environmental law is aimed at eradicating poverty, and improving economic, social and cultural conditions *while conserving biodiversity and the environment*. This is done by ensuring that the environment is considered in all decisions about development (International Covenant on the Environment and Development, Article 13).

What is international law?

International laws on the environment are found in a range of documents including treaties, conventions, covenants and declarations of principles.

Like human rights law, one of the primary weaknesses of international environmental law is that it relies on countries to adopt the treaty into their own domestic law for it to be enforceable.

Why is international environmental law of interest to East Timor?

1. Several international treaties identify the principles for sustainable development. East Timor should consider:

- a) whether it wishes to adopt environmental rights and the principles for sustainability in its Constitution (e.g. "The right to a clean and healthy environment"); and
- b) how it can include the principles for sustainability in its new environmental laws (such as following the precautionary principle in making decisions about development).

2. Participation in international treaties may also facilitate assistance from the international community in the following areas:

- a) assessment of environmental issues, e.g. surveys of biodiversity;
- b) financial or "in kind" assistance;
- c) environmental management assistance, eg. in managing special areas, such as nature reserves and wetlands;
- d) assistance in preparing legislation;
- e) transfer of technology.

Ecologically sustainable development and international law

Key documents

The key international documents which set out the general principles for sustainable development are:

- *Rio Declaration (1992)*. A statement by the international community of general principles for sustainable development.
- *Agenda 21 (1992)*. An Action Plan for sustainability which builds on the Rio Declaration.
- *International Covenant on Environment and Development*. This document is intended to go one step further, by giving effect to the provisions of the Rio Declaration and Agenda 21 in the form of a binding treaty. It will be a sort of “Declaration of Human Rights” for the environment. It has no official status at present.

What are the main principles of ESD in international law?

These documents refer to five main principles for ecological sustainable development. These are listed below, along with an example as to how each principle could be applied to a new mineral resource development, such as the extraction of oil in the Timor Gap, to ensure that it is environmentally sustainable:

- *Intergenerational equity*. Fairness between generations. The present generation has an obligation to pass natural resources on to following generations in a state that lets them have the same opportunities physically and ecologically, as well as for economic development.

Example: Will the mineral resource to be mined, such as gold, copper or oil, be available for the next generation? If not, how can the benefits of mining be made available to future generations?

- *Intragenerational equity*. Fairness within each generation. Development should not impact unfairly on those who are socially or economically weak. All members of the community should have the same opportunity to influence decisions about development and the environment.

Example: Will the mine unfairly affect one part of the community more than another? Mines often dump their contaminated waste into rivers. This can ruin the river for people who live downstream and use the river to fish or for clean water. Similarly, dumping mine waste in the ocean can kill a coral reef, and make it harder for communities that rely on the reef to catch fish.

- *Precautionary principle*. Even if it is not certain that harm to the environment will occur, steps should be taken to avoid or limit any possible damage.

Example: The toxic chemical cyanide is often used

in gold mines. The mining company might say that it is safe to use cyanide because the waste will be collected in a dam. But what if the dam breaks? Then the impacts on the river will be very serious. Applying the precautionary principle may mean that the mining company should not be permitted to use cyanide.

- *Conservation of biodiversity* We should avoid species becoming extinct, not only for their own sake but also because they provide us and future generations with food, medicine, industrial products, and contribute to a healthier environment.

Example: Has an assessment been made of the impact that the mine will have on plants and animals? Does the law in East Timor prohibit development that may result in a species becoming extinct?

- *The user should pay the full environment costs* The developer should not only pay the full financial cost of exploiting natural resources, such as timber, oil or minerals. They should also pay the full cost of any damage they cause to the environment, such as pollution, as well as for remediation measures.

Example: Will the mine pay a fair price for the gold or copper? Will the mine have to pay for all damage that the pollution causes to the environment and to people?

Other general environmental principles in international laws

In addition to ESD principles, some other general principles for sustainable development in international law include:

- the right to a healthy and productive life and environment;
- the right of the community to participate in decisions made about the environment;
- the right for the community to access remedies through the government and the courts;
- the right to information about development;
- the need for environmental impact assessment (EIA) to be carried out for all new development;
- the right of women to fully participate in decisions about the environment.

Question: East Timor should consider whether it wishes to adopt environmental rights, the principles of ESD and the other general principles set out in international law in:

- its Constitution; and
- each of its environmental laws?

Example: East Timor’s Constitution could provide that: “All people have the right to a clean and healthy environment”.



Specific International treaties for East Timor to consider

Most treaties will have a Secretariat that can assist parties with advice, financial support and environmental expertise to implement the terms of a treaty (eg. World Heritage Committee, the Ramsar Bureau to assist in protecting wetlands).

Specific treaties which East Timor may want to consider becoming a signatory to include:

- Climate change – Framework Convention on Climate Change (1992);
- Endangered species – Biodiversity Convention (1992). Requires countries to protect species through legal and institutional mechanisms. The Global Environment Facility (GEF) provides financial assistance to developing countries under this Convention, such as funds to carry out biodiversity assessments;
- *Convention on the International Trade in Endangered Species 1973 (CITES)*. Controls trade in endangered species by requiring permits to import and export those species.
- Pollution–*Basel Convention on the Transboundary Movement of Hazardous Wastes and their Disposal (1989)* Regulates the movement of hazardous wastes between countries.
- Treaties to protect special areas in East Timor – *World Heritage Convention (1972)*. Special areas of outstanding cultural or natural heritage can be listed for protection under this treaty. Example: the Great Barrier Reef is listed in Australia. A Fund for the protection of World Heritage sites is established under the Convention to support the conservation of World Heritage sites and sites which are threatened by development.
- *Convention on the Wetlands of International Importance 1971 (Ramsar Convention)*. Wetlands of international importance can be listed for protection under this Convention, particularly those where birds breed. Expert assistance to manage wetlands can be obtained from the Ramsar Bureau, and there is a limited fund to assist developing countries.

Assistance through international and regional associations

East Timor should consider which global and regional organisations it wishes to participate in that relate to the environment. Financial assistance, training and development, and environmental expertise may be available through these networks.

United Nations organisations

- *UN Environment Program*. The Division of

Environmental Policy Development and Law can provide assistance with preparing policies and drafting laws to assist in the adoption of international laws.

- *UN Development Program*
- *World Bank*. The International Environmental Law Division of the World Bank can provide assistance in drafting legislation to implement international laws.
- *Global Environment Facility*. Provides grants for projects, technical assistance and research to benefit developing countries to implement Agenda 21, Biodiversity Convention and Climate Change Convention.

Regional inter-governmental organisations to consider

- The Association of South East Asian Nations (ASEAN) has an Environment Programme to assist Member States. It also has an important Agreement on the Conservation of Nature and Natural Resources (1985), although this is not yet in force.
 - South Pacific Regional Environment Program (SPREP). This is based in Western Samoa. The organisation was created in 1993 and has 27 members, including all of the Pacific Island countries. The purposes of SPREP are to:
 - promote cooperation between member countries in the South Pacific region;
 - provide assistance to protect and improve its environment; and
 - ensure sustainable development for present and future generations.
- It may be possible for East Timor to join SPREP, although this would require SPREP to extend its geographical coverage.

Global non-government organisations

- The IUCN (*International Union for the Conservation of Nature*) has an Environmental Law Program that could provide assistance and advice in drafting and implementing international environmental laws.

Conclusion

The international legal framework has worked on developing the principles for ecologically sustainable development to address this issue of global concern. These principles should assist East Timor in considering how it wishes to develop its own legal and environmental management system to achieve sustainable development.



Indonesian National Environmental Law

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Indonesian Centre for Environmental Law (ICEEL)

This discussion will focus upon the Indonesian experience in the field of environmental law. This discussion can be seen as a warning to other countries, such as East Timor, in the field of environmental law and the environment in general, to not repeat the mistakes of Indonesia in the environmental sphere.

I will also propose several measures which I believe can be used to prevent the same problems that occurred in Indonesia from occurring in East Timor.

Currently Indonesian laws and transitional regulations are in place in East Timor. **Indonesian National Environmental Law involves:**

- General Environmental Law (GEL);
- Sectoral Environmental Law (SEL);
- Environmental Conventions that have been ratified.

General Environmental Law at the current time in Indonesia includes:

- Law No. 23/1997 UUPH (Conservation of the environment legislation);
- Regulation No. 27 1999 AMDAL (Environmental Impact Assessment);
- Regulation No. 18/1999 > PP 85/1999 B3 (Hazardous waste management);
- Regulation No. 20/1990 (Water pollution control);
- Regulation No. 41/1999 (Air pollution control).

Sectoral Environmental Law includes:

- Law No. 11/1967 (mining management);
- Law No. 5/1984 (industry);
- Law No. 41/1999 (forestry);
- Law No. 8/1971 (oil and gas).

Problems with Indonesian environmental law

There are a number of problems associated with Indonesian environmental law. These include problems with the legislation itself, as well as inadequate implementation and enforcement.

In terms of the legislation, there are inconsistencies between GEL and SEL. A further problem is that both GEL and SEL are very centralised, and their legal mandate has not yet been devolved to local areas.

The record of implementation and enforcement of environmental laws in Indonesia

is poor. This is due to the inadequate human resources capacity of environmental investigators and supervisors, and a limited budget for program implementation.

Further factors that result in poor implementation and enforcement of environmental laws include:

- capacity and effectiveness of civil society in carrying out the function of public control is weak. (This involves NGO's, institutions of higher learning, the mass media, and society);
- bureaucracies lacking in integrity, responsiveness and professionalism;
- questionable capacity of the government (both central and district) to implement transparency, public participation and accountability in management of public natural resources;
- the independence of the judiciary must be struggled for;
- the districts do not yet possess enforcement and adherence strategies (there should be a multi-approach process).

Other significant problems associated with environmental laws in Indonesia are:

- lack of political will in the development paradigm in supporting measures for the protection of ecosystems;
- lack of a solid legal framework that supports the concept of environmental sustainable development;
- no conflict resolution mechanism.

Criteria for legislative good governance

The following points address criteria for legislative good governance:

1. Empowerment, community participation and public access to information;
2. Transparency;
3. Democratic decentralisation;
4. Recognition of the limited carrying capacity of ecosystems, and the importance of protecting them;
5. Recognition of the rights of indigenous/local people;
6. Consistency and harmony;
7. Clarity;
8. Enforceability.

The prerequisites for good governance are outlined below:

1. Effective representative system;
2. Independent judiciary that is professional, and free from interference/ corruption from the executive;
3. A government apparatus (bureaucracy) that is professional with strong integrity;
4. A strong civil society that is able to carry out the role of public watchdog and apply pressure;
5. Decentralisation and strong local representation, that is supported by a strong local civil society;
6. Conflict resolution mechanisms.

The realisation of environmental governance can be measured in several ways:

1. The extent to which the Constitution includes

- rights related to ecological sustainability and protection of the environment;
2. The extent to which we want to and are able to translate into national policy the sustainable development principles that are incorporated in a number of international declarations, charters and conventions;
3. The extent to which environmental management institutions have effective and efficient operating structures;
4. The extent to which the community is involved in management of the environment and natural resources;
5. The extent to which we are able to follow up neglected environmental cases;
6. The extent to which the environmental budget is allocated equitably.

Environmental Planning and Management

Professor Henry Nix

Centre for Resource and Environment Studies (CRES), Australian National University

Environmental planning and management encompasses a wide range of disciplines and techniques, but must be an integral component of wider national planning and management to be effective. Environment and environmental issues should not be considered as separate from normal government functions, but as central to all. Five key components of the dynamic, interactive, process that services natural resource management and environmental protection are *inventory; evaluation; planning; management* and *monitoring*. These are discussed within a framework of basic principles and practical applications.

Building a sustainable society demands attention to three essential conditions:

- economic viability;
- social equity;
- environmental sustainability.

Each is a necessary, but not a sufficient condition. The first two conditions are highest on the agenda for East Timor but, ultimately, they are unattainable without giving equal consideration to the third condition. Ample evidence exists of widespread degradation of land, water and wildlife in East Timor with concomitant soil erosion, flash flooding and loss of biodiversity. These were not planned outcomes, but the cumulative impact of ordinary people

seeking to make a living using their available resources of land, labour, capital and available technology. But the land resource is finite, the labour force diminished and demoralised, capital severely limiting and the available technology remains at a very basic level.

The challenge then to build a sustainable society might seem insurmountable but people have created the problems and people can solve them. A civil society, whose people are educated to understand the vital connections between land, water and life and whom use this understanding to plan and manage resource use and to protect their environment must be a primary goal. Only with such a broad understanding can appropriate technologies be identified and applied. While responsibility for planning and management must be shared between national, regional and local sectors, the role of the individual, family and local community in managing the environment for sustainability is emphasised.

At the national (and regional) level we can identify five key components of a dynamic, interactive process that services natural resource management and environmental protection; *inventory; evaluation; planning; management; monitoring*. Traditionally, and almost universally, these key functions are separated and fragmented among bureaucratic agencies. Therein lie many of the problems of modern environmental

planning and management. Environment is seen as separate; as something outside those agencies responsible for economic planning, public works, agriculture, forestry, fisheries, education, public health, law enforcement and so on. In fact, it is central to the function of all. How then can we embody environmental/ecological considerations within every function of government?

For a start, we should ensure that everyone, but especially the policy makers, bureaucrats, educators, lawyers and every kind of planner and manager, has a working knowledge of fundamental ecological principles and environmental processes. In the short term, crash courses in consciousness raising of key individuals (a series of focused, relevant, targeted half-day, one-day and two-day workshops) will be essential. In the longer term, such knowledge must be integral to the curricula for schools, colleges and tertiary institutions. In addition to this necessary upgrade of human intellectual capital, very careful consideration needs to be given to the structure and composition of Government and associated management agencies.

Now let us consider responses to the immediate, complex, multiple and seemingly intractable problems of natural resource planning and management in East Timor in terms of the five key functions identified earlier.

(1) INVENTORY

Traditionally, maps and reports documented the natural resource base and the uses made of it. Now, new technologies (Geographic Information Systems, Remote Sensing, Spatial Interpolation Techniques, Simulation and Modelling) make it possible to shift from a static landscape pattern/polygon approach to a parametric approach that focuses on just those primary environmental attributes that are needed to model landscape processes and biological responses. The minimum data set so defined provides essential input to engineering, hydrological, agronomic, silvicultural and ecological models. The result means that the widest possible range of production and conservation options can be evaluated within a common spatial referencing system. Examples of such data base development for developed and developing countries will be provided.

(2) EVALUATION

The use of abiotic data (climate, terrain, substrate) as the basis for evaluating land for agricultural, pastoral and forestry production is long established. More recently, their use in conservation planning and environmental

management has gained momentum. The fact is that both production and conservation options are driven by the same key physical processes and biological responses. Relatively simple models of key processes such as the water balance and plant growth response can yield invaluable information for land evaluation for agricultural development and can be run on a hand calculator where necessary. Even the most sophisticated crop models can be run on a very basic PC. Similar kinds of computational models are used by engineers in assessing the location of infrastructure such as roads, buildings, drainage works and so on. But the price of admission to any of these models is the availability of the basic data needed to run them. Local experience should never be ignored and many land evaluation procedures incorporate simple rules based on this (eg. in this district, slopes > 6 per cent on metamorphic rocks are highly erodible when cleared).

(3) PLANNING

Formal definitions of planning indicate a very wide range of approaches to this essential process. Whatever, to be effective, planning must take into account a whole range of physical, biological, economic, social, cultural, legal and administrative factors. Environmental protection and conservation of biodiversity in many countries, including my own, is viewed primarily as a land allocation process. Inevitably, land allocation for conservation requires assessment of trade offs between competing uses. A number of methods are available that facilitate this process and some make explicit provision for stakeholders participation. However, parks and reserves are a necessary but not a sufficient condition. Inevitably, management of the matrix of land uses within which reserves are embedded must be considered.

(4) MANAGEMENT

Neither a discipline of environmental management nor a profession of environmental manager yet exists but *de facto* professionals can be found in applications ranging from urban and industrial development, mining, agriculture, forestry and ecotourism as well as park and reserve management. Most remain securely bound within the confines of economic rationality through application of technology. Management of the environment is mostly indirect as it seeks to control and regulate the behaviour of producers and consumers, people and institutions. But, environmental management for sustainability must be based on a solid foundation of ecological



principles. Unfortunately, while ecology does provide essential understanding and valuable insights, it rarely provides the level of precision and control that land resource managers, engineers and technologists have come to expect.

The environmental manager for the new millennium will have a rigorous systems training and will operate from a broad knowledge base that includes political, administrative, legal, economic and social as well as scientific components. Most important will be the need to understand the linkages between component subsystems, the need to balance inputs from diverse stakeholders and the need to communicate effectively.

(5) MONITORING

Last, but not least, management cannot succeed without effective monitoring of system performance, whether this is for a whole country, province, local government area or a specific production system. While major financial

institutions and industrial corporations recognise this, not all governments and their agencies do. The collection of relevant statistical data is frequently given lower priority in times of fiscal stringency. But then how can success/failure of key government programs and expenditure be evaluated?

Unquestionably, modern technologies such as remote sensing coupled with geographic information systems and strategic ground-based sampling can make the task of monitoring much more cost effective. Also, these can provide a more rigorous framework for community participation in monitoring for ongoing management. Australia has a number of successful examples of local and even continental scale community monitoring of flora and fauna. A nation-wide, voluntary, integrated monitoring system for environmental management and biodiversity conservation is a distinct possibility in a civil society, but remains a challenge for the future.

Environmental Management for Small Island States

Dr. Graham Baines
Environment Pacific

An environmental management administration is likely to be an essential element of governance in East Timor. The scope and magnitude of the tasks faced is considerable and includes both national and international responsibilities. Pacific island countries faced similar needs at Independence. Their individual efforts, coupled with support from a South Pacific Regional Environment Programme are useful examples despite their qualified success. Some of the factors and issues that hindered success are identified. It is suggested that East Timor begin with a modest and focused programme as a first phase of an environmental management administration, with a view to later extension.

East Timorese face many environmental problems arising from years of neglect and mismanagement for which a wide range of new policies, laws and practices are needed. Any environmental management institution will need to embrace a wide range of functions and technical expertise.

Some of the issues to be addressed have an international dimension; particularly in relation to environment and natural resources shared with Australia and Indonesia and this adds to the

workload. As East Timor enters the global community, in an environmental sense it will be expected to "think globally and act locally". This means acting on local and environmental issues but with reference to the global context of which local issues are but a part. United Nations member countries have assumed a number of international environmental obligations through conventions. By becoming party to these conventions East Timor will be able to tap financial and technical support for management of biodiversity and environment. However, the responsibilities of membership of these conventions are very demanding for small island states. With few trained staff even for priority local issues, a significant amount of valuable staff time will be at risk of being diverted to meet the reporting requirements of Convention Secretariats overseas. A careful analysis of the relative costs and benefits for East Timor of becoming party to these conventions is advisable.

Pacific island countries faced the same choices, contradictions and dilemmas at Independence. Their similarities of circumstance and needs in environmental management and biodiversity conservation led to the establishment of a South

Pacific Regional Environment Program (SPREP). This has been of some assistance to Pacific island governments. However, SPREP's effectiveness has been hindered by its transformation from a "low key" support unit into a "big and glossy" regional organisation geographically and, to some extent, conceptually distant from its clients. It was never intended that SPREP assume all environmental management roles of member countries. Each island nation has still had to establish some form of environmental management unit. Their forms and their level of success vary and none has been able to meet the ideals envisaged at Independence.

Factors and issues which have diminished the effectiveness of environmental management agencies and staff in Pacific island countries include¹:

- The wide range of subject matter requires that officers be "multi-tasked". This dilutes their effectiveness and they find little opportunity for field work. Governments cannot afford to employ environmental field staff, but no effort has been made to address this deficiency through cooperative arrangements with agriculture, fisheries and forestry agencies.
- Very small staff numbers means that absences while training, and while attending conferences, incur a significant loss of conservation effort at home.
- Development assistance agencies rightly require local counterparts for projects. In small island countries this places even more demands on the time of the multi-tasked, minimally supported, often absent for training or conferences, local staff.
- While it has been reassuring to see conservation policy spelled out in the five year economic development plans of several island countries, this has not been reflected in the way governments undertake development activities.
- Some excellent environmental legislation has been introduced, but has often been rendered ineffective through absence of support for implementation, or through the enactment of later legislation that overrides environmental controls.
- Environmental management and biodiversity protection functions are among the first to be curtailed when governments face budgetary difficulties. Unlike in "developed democracies", there is weak public support that might be translated into voter pressure on governments.
- Since environment and conservation work has been regarded as secondary to mainstream

development, work in this area has offered limited career development opportunities in rigid public service structures and this has discouraged some of the better quality officers.

- Liberal offerings by donors of funds to support islander participants in overseas conferences has led to a tendency for recipients to accept all offers without first ascertaining which conferences are truly relevant to their needs. Every conference attended has a cost in terms of home-based conservation effort.
- Competition and rivalry between government agencies weakens environmental management administration. Special effort is required to forge cooperative linkages.
- National environmental agencies have developed a strong sense of territoriality. They tend to see conservation initiatives by others as competition rather than support. Little effort has been made to encourage environmental management at lower levels of government, but there are some efforts to support village communities in this respect.
- It has taken a long time for Government agencies to feel "comfortable" with NGOs and this has hindered the contribution that NGOs can make to national conservation efforts. This problem has arisen from misunderstandings on both "sides".
- No conservation or environmental management initiative in rural areas of any Pacific island country has been successful except where local communities were engaged and closely involved.
- All Pacific island conservation agencies face an acute problem of inadequate information for conservation action and for environmental management. Part of the problem lies in the absence of a framework to guide the return of meaningful data from research undertaken by outsiders.

East Timor could act to pre-empt or minimise these problems, and might consider a *phased approach to the establishment and development of an environmental management administration*. A first, short term phase might focus on a selected range of the tasks needed, introduce priority "minimalist" forms of legislation (to be used as a basis for more comprehensive legislation at a later time), contract out (with donor financial support) much of the fieldwork (surveys and status reports will be urgently needed), while ensuring that these contracts provide for meaningful in-service training for East Timorese (government, NGO and community).

¹ More detail is to be found in: Baines, G.B.K., 1990. Conservation policy and practice in the South Pacific island region. Theme Paper, in *Proceedings, Fourth South Pacific Conference on Nature Conservation and Protected Areas*.



Institutions Workshops

Civil Society Workshop

Issues Identified: Lack of human resources • How to strengthen civil society? • Public awareness about political, social, and environmental problems • There is no concept of policies of a people's economy • Government is not participatory, business is doing their own thing, government is self-righteous • There is low community participation in the development process, it seems that it is government that must always implement the development projects • Civil society groups are not aware that they have power to influence the decision making process – and are not aware of their role in influencing the private/corporate sector • Political parties in remote areas already exist, but civil society is yet to be developed. In these areas, political society exists, but not yet civil society • Lack of political education and political leadership at the grass roots levels.

PRIORITY ISSUES	STRATEGIES
Lack of human resources	<ul style="list-style-type: none"> • Train the trainer programmes • Community/NGO exchange with other countries • Introduce formal subjects on civil society into schools • NGOs develop syllabus on civil society
Weak civil society	<ul style="list-style-type: none"> • Empower NGOs in districts and provide direct links to donors for rural NGOs • Lobby UNTAET to improve communication, postal service & transport to districts • Encourage INGOs to conduct needs assessments first • Identify new targets for resistance movement (eg: political parties, government, multi-national corporations)
Lack of political education in civil society	<ul style="list-style-type: none"> • Use community radio and traditional means to communicate with grassroots • Education on political rights • Organise town/village meetings • Popular theatre • History workshops for writing local history of East Timor
Lack of participation in development process	<ul style="list-style-type: none"> • Lobby National Council to use participatory approach • Create mechanism for consultation beyond National Council • Lobby World Bank to change wealth generation policy and to “provide fishing rod not fish” • Lobby multinationals not to create monopolies/use resources unsustainably • Emphasise to community importance of “cooperative” labour

Environmental Law Workshop

Issues Identified: Access to info regarding environmental law • Lack of human resources • Acknowledgement of traditional law regarding the environment • Low level of awareness regarding environmental law and regulation • Laws should reflect local needs and the local situation – what makes the laws work? • Poor leadership • Environmental education and resource regeneration policy • No institution or apparatus responsible for monitoring or enforcement • Confusion regarding ownership of land and resources • Public participation and consultation • Scale of priority for resource exploitation, “environment versus development” • Lack of coordination between government institutions.

PRIORITY ISSUES	STRATEGIES
Information and awareness for all stakeholders	<ul style="list-style-type: none"> • Rural seminars and workshops • Industry seminars • Independent government/industry watchdog
What makes the law work? Recognition of 'adat' and public participation	<ul style="list-style-type: none"> • Research elements of <i>adat</i> (traditional law) and incorporate into national law (including the questionnaire) • Consultation drafts for the constitution and proposed environmental regulations
Human resources and poor leadership	<ul style="list-style-type: none"> • Place environmental issues on school curriculums • Promote cooperation between UNTAET and CNRT in the transitional stage

Environmental Management Workshop

Issues Identified: Pollution • Forest fires • Air pollution • Logging • Low education • Erosion and flooding • Loss of wildlife • Overgrazing • Shifting cultivation • Need for regulations • Foreign experts • Roadside stalls and litter • Administration for the environment • Energy alternatives • Lack of government control • International conventions • Lack of policy • Lack of experts • Need for training in; agriculture, economists, administration, environment, mining, finance.

PRIORITY ISSUES	STRATEGIES
Low education and awareness	<ul style="list-style-type: none"> • A strong education system is required (ie. focus on schools and curriculum) • There is a need for educational facilities (equipment, tools, infrastructure) • A public awareness campaign is necessary • The government must endorse and support the need for education and awareness • The community must strongly support the process
Lack of technical training	<ul style="list-style-type: none"> • There is a need to technical training programmes in environmental management for professional staff within the administration • There is a need for training facilities (equipment, tools, infrastructure) • There is a need for other associated resources (funding and expertise)
Lack of government control	<ul style="list-style-type: none"> • There is a need for a clear government structure for environmental management from top to bottom • Environmental issues must be integrated into policy development in a range of key areas including agriculture, health, economy and education • The government must participate closely with the community in environmental management • Development of an appropriate legal framework for environmental management
Lack of regulation	<ul style="list-style-type: none"> • There is a need for intensive training within the administration and public on the content and means of applying environmental regulations • There must be a clear process for involving civil society in the development of environmental policies and regulations • Environmental regulations must be made realistic and relevant to the East Timor context, to be achieved via community involvement and consultation • The government needs to be well intentioned in the implementation of its policies and regulations

Traditional Culture

Issues Identified : Institute government laws regarding environmental protection • Process from traditional culture to modern culture • Threats from outside cultures • Children don't know their culture and are embarrassed, such as having to wear traditional clothes on traditional days • Lack of skills to build traditional houses • Threat of church religion from *adat* (traditional laws) • Traditional law and loss of traditional language/culture • Decision-making process in traditional culture • Constitutional protection for traditional culture • Elements of traditional culture which are not beneficial, e.g. bride price.

PRIORITY ISSUES	STRATEGIES
Threats from outside to East Timorese culture	<ul style="list-style-type: none"> • Education – formal and informal • Institute laws • Establish a cultural institute • Research culture and language (regional) • Utilise mass media
Lack of awareness about and reluctance to follow traditional East Timorese culture	
Protection in the constitution of East Timorese traditional culture	
Changes to elements of traditional culture	<ul style="list-style-type: none"> • Research by women's organisations • Advocacy • Agreements between all players e.g. bride price – alter cost according to ability to pay



Governance Workshop

Issues Identified: Unequal distribution of resources/unequal bargaining power • Recognition of CNRT at the village level by UNTAET • Lack of understanding by the people of UNTAET/CNRT structure/function • UNTAET's priorities are not compatible with the people's priorities, resulting in incomplete programs • Too much expectation from the people about UNTAET • Nepotism • Lack of transparency from UNTAET about taxes • Lack of coordination between CNRT/UNTAET • How to ensure genuine participation • CNRT/UNTAET centralised administration • Community does not understand the regulations and emergence of political parties in East Timor • Inherited bureaucratic structure • Corruption • Conference as an example of centralisation – districts do not participate • UNTAET/CNRT not sensitive to social issues • UNTAET has appointed district chiefs in a non-democratic way • Indigenous system of representation versus western forms of representation.

PRIORITY ISSUES	STRATEGIES
How to ensure genuine participation	<ul style="list-style-type: none"> • Community empowerment through consensus, training for government and non-government people. • More direct participation in development plans and policies • People decide which decisions should be made by higher levels
UNTAET/CNRT are not sensitive to local issues	<ul style="list-style-type: none"> • Housing: improve cooperation among local and international NGOs, and use local materials. • Education: provide free education and give priority to disadvantaged children • Health: strengthen the community health system (eg training, fix clinics)
UNTAET appointment of district chiefs in a non-democratic way	<ul style="list-style-type: none"> • Inform the community that there will be an election • Make regulations for the elections in a democratic way • Have discussions to reach consensus on the election process
UNTAET / CNRT excessive centralisation	No time to discuss



District Outreach Program

*Manatuto, Baucau, Viqueque, Los Palos, Aileu, Maubisse,
Ainaro, Same and Maliana*

District involvement in the conference was considered to be vital. A district outreach program was designed to facilitate discussion in the districts about sustainable development and the environment, and to bring representatives from the districts to attend the conference in Dili. The aim was to build strong networks between Dili and the districts and to ensure district participation in the conference so that conference outcomes reflected the needs and issues facing rural communities in East Timor. Relationships established through this program will provide important links between the Task Force on Sustainable Development and the districts.

The District Outreach Program involved:

- Workshops that were held in five districts before the conference;
- Attendance at the conference by more than 25 rural representatives from eight districts;
- Post-conference workshops.

One-day workshops were held in five districts during the week prior to the conference; in Manatuto, Baucau (including Los Palos and Viqueque), Aileu, Maubisse (including Same and Ainaro), and Maliana. There were close to 100 participants in the five workshops from a wide range of district and community organisations.

The workshops were organised by representatives from local groups. These were; Hak Foundation in Baucau, OMT in Manatuto, OMT in Aileu, Hak Foundation in Maubisse (covering Same and Ainaro) and Renetil in Maliana. The workshops introduced and tackled sustainable development concepts.

The workshops began with an introduction to the conference, and to the history and principles of sustainable development. The participants were able to discuss and share ideas about the environment and the importance of sustainable development for East Timor. The workshops highlighted the need to understand current environmental conditions and to protect natural resources for future generations. This included discussion about the causes of environmental degradation and how environmental conditions can be improved. Part of this discussion included how the community can preserve the environment with current customary laws and how they can enforce these themselves.

The workshops served to highlight the importance of community participation in policy and program development and implementation, and the need for action in order to improve environmental conditions.

The pre-conference workshops received a very positive response from participants as they were the first environment and development workshops to be held in the districts.

Priority environmental issues were identified by each workshop. The issues raised by each district are included below. To ensure that these issues were brought to the conference and that conference outcomes were brought back to the district, each workshop chose representatives to attend the conference. These chosen representatives travelled to Dili and participated in the whole week of the conference. They were provided with an allowance for travel, meals and accommodation.

More than 25 district representatives attended the conference. While the pre-conference workshops ensured participation of those districts, participants were also invited from other districts. Almost all districts were represented.

During the conference, district representatives met to discuss their experiences, ideas and specific issues. On the concluding day of the conference a district representative, Francisco dos Santos from Radio Communicade in Los Palos, made a presentation about the issues of concern and relevance for the rural areas.

The main points raised by the districts related to education and health. Education is a priority for the districts, where schools lack even basic facilities. For example, most students are still sitting on the floor. The issue of shortage of universities was also raised. There is only one university in East Timor thus access to education for rural youth is limited. It is hoped that universities will be established in the districts.

Health was raised as a key concern for the districts. All people in the districts (especially in villages) have inadequate health facilities. Some villages are isolated, without vehicle access and therefore medical services do not reach them. The service provided by hospitals is inadequate, and some districts, for example Viqueque, do not even have hospitals. There is also a shortage of medical staff, and staffing depends greatly on volunteers. While there are other important issues in the

districts, such as deforestation, education and health were considered to be the two most important issues.

After the district presentation on the concluding day, the summary of workshop outcomes, conference recommendations and a proposal for a Task Force on Sustainable Development were presented and discussed. All of these documents were endorsed by conference participants. Participants received draft copies of all of the above conference outcomes and of full workshop outcomes. They were therefore able to take conference outcomes back to their communities.

Post-conference workshops

Post-conference workshops were held in the districts to share conference results and to help ensure that the Task Force on Sustainable Development has an initial relationship to the districts. The workshops discussed how relationships could be maintained. It was agreed by the workshop participants that there should be representation from each district on the Task Force. However, representation should be neutral. District members of the Task Force should not represent a political party, business or particular interests. The workshops each identified a contact person from each as an initial point of contact while the Task Force is being established.

The workshops also discussed the formation of environment teams to work on local as well as national issues. Such groups may in time be able to establish environment centres. It is planned that an environment alliance will be formed between the eastern groups based in Baucau, Los Palos and Viqueque. The Maliana workshop recommended the formation of an environment team and the groups in Maliana are committed to making this happen.

One poignant outcome of the conference is a story told at the Maliana workshop by one of the conference delegates. On her return to Maliana after the conference, she showed the conference outcomes to one of the schools. The excitement that this engendered led to action. The school was inspired to plant trees: they planted two hectares of teak on the outskirts of Maliana.

While such initiatives can clearly achieve a lot, it comes as no surprise that the district outreach program identified the need for both resources and funding for sustainable development and the environment in the districts.

Following are the priority issues that were identified by the workshops that were held in the districts.

Environmental priority issues in the districts

Maubisse District:

- Climate change and consequent environmental degradation (due to the clearing of forests and the use of agricultural chemicals);
- Protection of the remaining natural forests on the south coast;
- Waste management systems.

Baucau District:

- Climate Change;
- Permission to clear forests. Government policy permitting forest clearance has led to the greatest general environmental degradation;
- The top-down system of policy making without community participation;
- Education.

Maliana District:

- To limit the use of agricultural chemicals by finding alternatives that protect the natural environment;
- Protection of natural resources;
- Reforestation is vital due to the impacts of shifting agriculture and illegal herding;
- Deforestation and land clearing that are caused by a weak legal system and ignorance of existing customary laws.

Aileu District:

- Government policies represent the largest opportunity for environmental degradation;
- Need for education about the environment in school curriculums (primary and secondary);
- Urban planning is needed, and decisions need to be made regarding the location of industry. The waste management system must reflect the community's needs, and use of natural resources must be within the carrying capacity of natural systems;
- Protection and conservation of natural resources;
- Prohibition of waste importation;
- Economic development must not make the environment a victim because nature is unable to sustain long term exploitation;
- Community participation in decision making.

Manatuto District:

- Forest clearing is a clear cause of environmental degradation;
- The government has ignored customary laws which are in place in the community and which are indirectly able to protect the environment;



- Waste management systems;
- Illegal herding of cattle;
- Use of chemicals to catch ocean fish;
- Climate change/global warming.

Long term sustainability

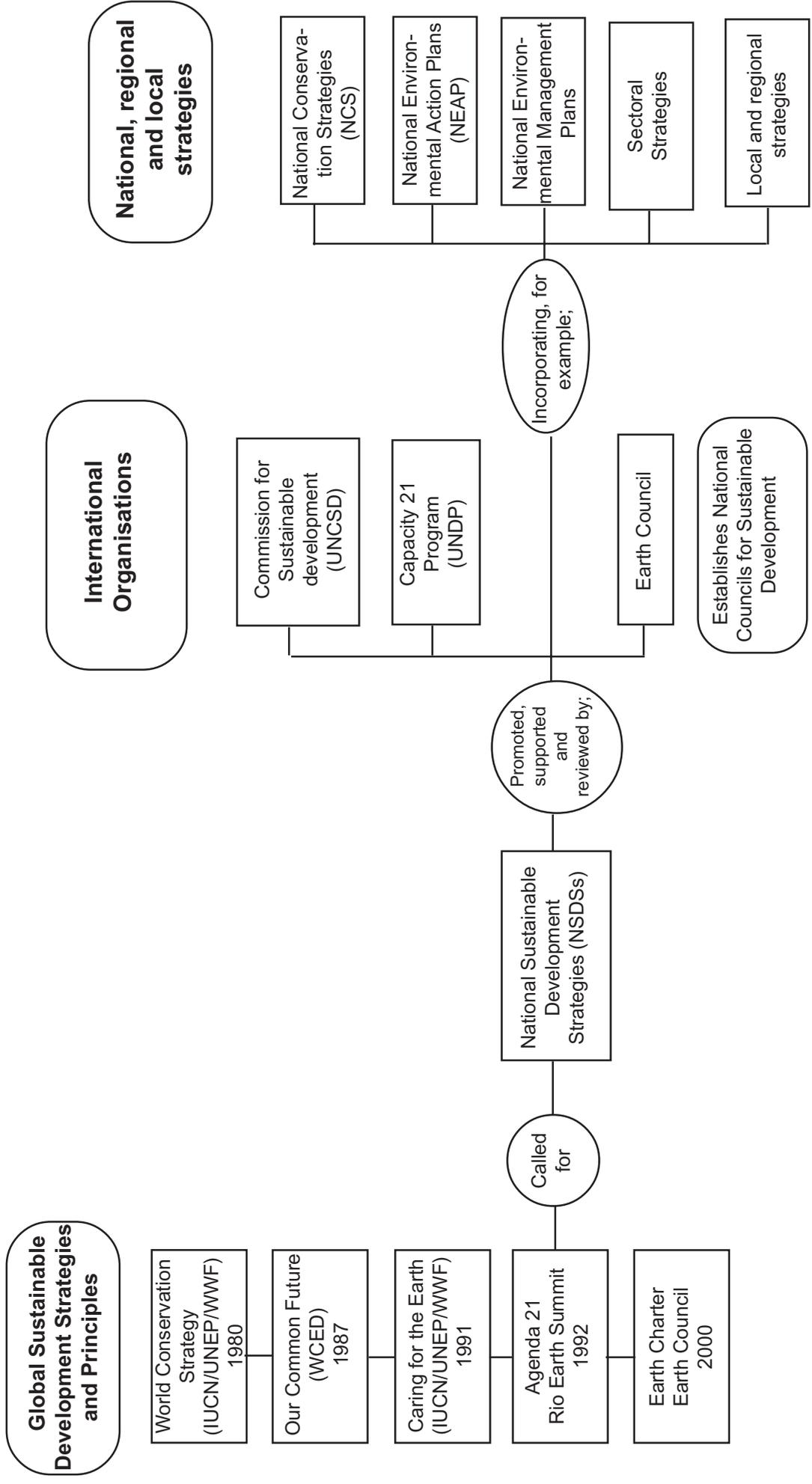
The outcomes of the conference indicate a strong desire and need for community participation in the planning and implementation of development programs. The communities that were involved in the sustainable development workshops raised the important issues of environmental degradation, the need for transparent policies and the need for education.

There is a need for commitment to education, as part of the process of building awareness and strengthening communities. Community education is vital for sustainable development. This will rely on distribution of information equally between the district communities and the city centre as well as on development of facilities for comprehensive education and training.

This book of conference proceedings will be distributed to the districts. It is hoped that it will be a useful handbook for education and development planning in the rural areas of East Timor.



National Sustainable Development Strategies in the context of Global Strategies and International Organisations



Sustainable Development Organisations, Strategies and Directories

Many organisations around the world work towards sustainable development. This list, while by no means comprehensive, provides useful contacts and starting points for those seeking information, funding, project support and networking opportunities for environmental and sustainable development work. This list largely reflects the many organisations that supported and participated in the Conference on Sustainable Development in East Timor. A Website and Email address are provided for most organisations.

Organisations

East Timorese NGOs

The East Timor NGO Forum (FONGTIL) is an umbrella organisation for the many national NGOs in East Timor. A list of East Timorese NGOs and their contact details, including those working on environment and sustainable development can be found at:

<http://www.geocities.com/etngoforum/nngo.html>

or <http://www.pcug.org.au/~wildwood/linksindig.htm>

Email: NGO Forum: etngocentre@hotmail.com

Amnesty International

<http://www.amnesty.org/>

Email: amnestyis@amnesty.org

Amnesty International is a worldwide campaigning movement that works to promote all the human rights enshrined in the Universal Declaration of Human Rights and other international standards.

Australian Centre for Renewable Energy (ACRE)

<http://acre.murdoch.edu.au/>

Email: acre@acre.murdoch.edu.au

The Australian Cooperative Research Centre for Renewable Energy (ACRE) seeks to create an internationally competitive renewable energy industry.

Australian Conservation Foundation (ACF)

<http://www.acfonline.org.au/>

E-mail: acf@acfonline.org.au

The ACF is a national non-government, non-profit environment organisation. ACF campaigns on matters needing urgent action and has a vision for long-term reform and accountable and ecologically sound management of cities, industries and natural heritage.

Both Ends (Netherlands)

<http://www.bothends.org>

Email: info@bothends.org

Both Ends supports inspiring environment initiatives all over the world, primarily in

developing countries and central and eastern European countries.

BP Solar

<http://www.bpsolar.com>

Email: info@bpsolar.com

BP Solar and its extensive network of distributors and dealers provide solar electric power solutions for industrial, commercial, and residential customers throughout the world.

Ecological Architects Association (EAA)

Email: [<tonyedye@magna.com.au>](mailto:tonyedye@magna.com.au)

[<gareth@archinet.com.au>](mailto:gareth@archinet.com.au)[<dbaggs@netspace.net.au>](mailto:dbaggs@netspace.net.au)

The Ecological Architects Association (EAA) is a Sydney based association of architects concerned with ecologically sustainable design.

Earth Council

<http://www.ecouncil.ac.cr/>

Email: eci@ecouncil.ac.cr

The Earth Council is an international NGO that helps countries implement sustainable development. The Earth Council operates in partnership with governments or organisations to assist countries to establish National Councils for Sustainable Development (NCSDs).

Environmental Defenders Office (Australia) (EDO)

<http://www.edo.org.au/>

Email: edonsw@edo.org.au

The National EDO Network consists of nine independently constituted and managed community environmental legal centres spread across Australia. Each EDO office is dedicated to protecting the environment in the public interest.

Environmental Technology Centre, Murdoch University (Western Australia) (ETC)

<http://www.wies.murdoch.edu.au/etc/>

Email: anda@essun1.murdoch.edu.au

The aim of the ETC is to research, develop and demonstrate environmental technologies,

conduct education and training, provide consultancy services to industry, and raise community awareness of environmental technologies. The Centre includes an integrated operational display of technology for sustainable development.

Friends of the Earth International (FoEI)

<http://www.foei.org/> (FoE Australia: <http://www.foe.org.au/>)

Email: foei@foei.org (FoE Australia email: foe@foe.org.au)

Friends of the Earth is the world's largest federation of environmental groups, uniting close to one million activists worldwide. FoEI's member organisations, in 68 countries and 13 affiliate groups, campaign on the most urgent environmental and social issues of our day.

Greenpeace International

<http://www.greenpeace.org/>

Email: supporter.services@ams.greenpeace.org

Human Rights Watch

<http://www.hrw.org/>

Email: hrwnyc@hrw.org

Human Rights Watch is dedicated to protecting the human rights of people around the world.

Indonesian Centre for Environmental Law (ICEL)

Email: icel@indosat.net.id

ICEL advocates for and develops environmental policy and legislation. ICEL works with other environmental NGOs and supports community groups with the aim of ensuring that development is ecologically sustainable and based on democracy, defence of human rights and the rule of law.

Institute for Sustainable Futures, Australia (ISF)

<http://www.isf.uts.edu.au/>

Email: isf@uts.edu.au

ISF works in partnership with industry, government and the community to develop programs that provide an active and practical response to current issues of economic, social and ecological sustainability.

International Federation of Organic Agriculture Movements

<http://www.ifoam.org/>

Email: HeadOffice@ifoam.org

The International Federation of Organic Agriculture Movements is the worldwide umbrella organisation of the organic agriculture

movement, with about 740 member organisations and institutions in some 103 countries all over the world.

International Institute for Environment and Development (IIED)

<http://www.iied.org/>

Email: mailbox@iied.org.

IIED aims to provide expertise and leadership in researching and achieving sustainable development at local, national, regional and global levels.

International Institute for Sustainable Development, Canada (IISD)

<http://iisd.ca/>

Email: info@iisd.ca

IISD works to make development sustainable by putting forward policy recommendations, based on careful analysis, on international trade, economic instruments, climate change and natural resource management.

International Council for Local Environmental Initiatives (ICLEI)

<http://www.iclei.org/> (Australia and New Zealand <http://www.iclei.org/anz>)

Email: iclei@iclei.org (Australia and New Zealand Email: anz@iclei.org)

ICLEI is an association of local governments dedicated to the prevention and solution of local, regional, and global environmental problems through local action. Over 300 cities, towns, counties, and their associations from around the world are members of ICLEI.

La'o Hamutuk (Walking Together)

<http://http://www.etan.org/lh/default.htm>

Email: laohamutuk@easttimor.minihub.org

La'o Hamutuk is a joint East Timorese-international organisation that seeks to monitor and to report on the activities of the principal international institutions present in East Timor.

Mineral Policy Institute, Australia (MPI)

<http://www.mpi.org.au/>

Email: mpi@mpi.org.au

MPI monitors and campaigns on the extensive environmental and social impacts of the minerals industry in the Asia-Pacific region.

Organic Federation of Australia (OFA)

<http://www.ofa.org.au/>

Email: info@ofa.org.au

The OFA is the peak industry body for the Australian organic and biodynamic industry. It actively lobbies for increased resources for



sustainable agriculture and provides information and advisory and extension services and resources to its members, the public and government.

Oz GREEN

<http://www.ozgreen.org.au/>

Email: ozgreen@ozgreen.org.au

Oz GREEN is a NGO that offers environmental education programs. It is part of the Global Rivers Environmental Education Network, an international network committed to actively improving and sustaining the planet's water.

Pacific Concerns Resource Centre (PCRC)

<http://www.pcrc.org.fj>

Email: pcrc@is.com.fj

The PCRC serves as the secretariat for the Nuclear Free and Independent Pacific (NFIP) movement. PCRC's objective is to educate the peoples of the Pacific regarding their environment, political and economic equity, and justice and peace in their region.

Protimos Foundation

<http://www.protimos.org/>

Email: protimos@aol.com

The Protimos Foundation is an organisation of practising and academic lawyers and environmentalists which aims to provide assistance to creating and improving legal and institutional methods for equitable use of biodiversity resources.

Regional Community Forestry Training Centre (RECOFTC)

<http://www.recoftc.org/>

Email: ftcsss@ku.ac.th

The Regional Community Forestry Training Centre for Asia and the Pacific is an international organisation which works to actively support community forestry development in the region.

South Pacific Regional Environmental Programme (SPREP)

<http://www.sidsnet.org/pacific/sprep/>

Email: sprep@sprep.org.ws

SPREP is a regional organisation established by the governments and administrations of the Pacific region to look after its environment. The members of SPREP are all 22 Pacific island countries and territories and Australia, France, New Zealand and the United States of America.

United Nations Commission on Sustainable Development (CSD)

<http://www.un.org/esa/sustdev/>

Email: dsd@un.org

The Commission on Sustainable Development was created in December 1992 to ensure effective follow-up of the Rio Earth Summit and to monitor and report on implementation of the Earth Summit agreements at the local, national, regional and international levels.

United Nations Development Program (UNDP)

<http://www.undp.org/>

<http://www.undp.east-timor.org/>

Email: registry.tp@undp.org,

aboutundp@undp.org,asia-pacific@undp.org

UNDP is the UN's principal provider of development advice, advocacy and grant support. The East Timor Web site includes publications and information about East Timor.

United Nations Environment Program (UNEP)

<http://www.unep.org/>

Email: ipainfo@unep.org

UNEP works with governments to promote environmentally sound forms of development, and coordinates global action for development without destruction of the environment.

Wahana Lingkungan Hidup Indonesia (WALHI)

<http://www.walhi.or.id/>

Email: WALHI@walhi.or.id

WALHI is a forum established by civil society groups and is composed of NGOs and environment groups. WALHI aims to achieve the sustainable management of the environment and natural resources by emphasising principles of justice, community participation, and democracy.

World Conservation Union (IUCN)

<http://www.iucn.org/>

IUCN works through a worldwide partnership of states, government agencies, NGOs, affiliates, scientists and experts to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that use of natural resources is equitable and ecologically sustainable.



Worldwatch Institute

<http://www.worldwatch.org/>

Email: worldwatch@worldwatch.org

Worldwatch is a non-profit public policy research organisation dedicated to informing policymakers and the public about emerging global problems and trends and the complex links between the world economy and its environmental support systems.

World Wide Fund For Nature (WWF)

<http://www.panda.org/>

Email: w-panda@client-mail.com

WWF is the world's largest private international conservation organisation. It promotes public awareness of conservation problems and works to protect threatened species and environments.

Women's Environment and Development Organisation (WEDO)

<http://www.wedo.org/>

Email: wedo@wedo.org

WEDO is an international advocacy organisation that seeks to increase the power of women worldwide as policymakers at all levels in governments, institutions and forums to achieve economic and social justice, a healthy and peaceful planet, and human rights for all.

World Resources Institute

<http://www.wri.org/wri/>

Email: front@wri.org

The World Resources Institute provides information, ideas, and solutions to global environmental problems.

Publications and Strategies

A number of influential documents have been published to help ensure the global achievement of sustainable development. In 1980, IUCN, UNEP and WWF published the *World Conservation Strategy*. Ten years later, the same three organisations published *Caring for the Earth*, which builds on all that has been learned in the last decade about the complexity of the problems and shows how radical and far reaching are the actions and objectives needed to meet them. The text of ***Caring for the Earth*** can be found at:

<http://coombs.anu.edu.au/~vern/caring/caring.html>

The report of the World Commission on Environment and Development ***Our Common Future*** was published in 1987. *Our Common future* examines critical environment and development problems on the planet and puts forward realistic proposals to solve them.

Agenda 21

<http://www.igc.org/habitat/agenda21/>

<http://www.un.org/esa/sustdev/agenda21.htm>

The Rio Earth Summit in 1992 resulted in a major sustainable development strategy – Agenda 21. Agenda 21 set out to specify the issues and topics that need to be dealt with in any attempt to achieve sustainability. It addresses poverty, hunger, disease, illiteracy and environmental degradation as a set of interrelated issues. Agenda 21 requires each country to draw up a national strategy for sustainable development.

National Councils on Sustainable Development (Earth Council)

<http://www.ncsdnetwork.org/>

Email: info@ncsdnetwork.org

The Earth Council operates in partnership with governments or organisations to assist countries to establish National Councils for Sustainable Development (NCSDs) to promote and implement sustainable development at the national level.

Strategies for National Sustainable Development

A Handbook for their Planning and Implementation by Jeremy Carew-Reid, Robert Prescott-Allen, Stephen Bass and Barry Dalal-Clayton

<http://www.iucn.org/themes/ssp/natmain.html>

A handbook for people who are or expect to be involved in developing and implementing National Sustainable Development Strategies (NSDSs) or other multi-sectoral national strategies.

Social and Economic Conditions in East Timor

Editors: Jon Pedersen and Marie Arneberg,

Project Director David L. Phillips

<http://sipa.columbia.edu/ICRP/easttimor.html>

This report was published in November 1999. It provides base-line data of socio-economic conditions in East Timor at the time of the UN-sponsored referendum on autonomy for East Timor (August 1999).

UN Common Country Assessment (East Timor)

<<http://www.undp.east-timor.org/CCA.PDF>>
This report was published in November 2000 by all UN agencies in East Timor to provide an analysis of development needs. It provides baseline data and highlights a number of key development issues that need to be addressed to achieve socio-economic development that is human oriented, equitable and sustainable.

Assessing Environmental Needs and Priorities in East Timor: Issues and Priorities

by Odd Terje Sandlund, Ian Bryceson, Demetrio de Carvahlo, Narve Rio, Joana da Silva, Maria Isabel Silva
<http://www.undp.east-timor.org/Factsheets/I&P-report.pdf>
A report published in 2001 that outlines the major environmental issues facing East Timor today, and addresses the main environmental priorities.

Directories

Environmental Defenders Office, Australia (EDO)

<http://www.edo.org.au/>
Email: edonsw@edo.org.au

This website includes links to: Australian Commonwealth, State and Local Government environmental information; Australian legal resources; information for environmental lawyers; Australian environmental NGOs and groups; an Australian environmental activist legal resource page; and select international environmental legal links.

Green Pages

<http://www.eco-web.com>
A global directory for environmental technology – a guide to the full spectrum of environmental products & services, featuring 6,633 suppliers from 129 countries.

IISD Linkages

<http://www.iisd.ca/linkages/>
A multimedia resource for environment and development policy makers.

Sustainability Web Ring

<http://sdgateway.net/webring/default.htm>
Email: webring@iisd.ca

This Internet tool allows users to navigate easily between Websites that deal with the principles, policies, and best practices for sustainable development.

World Wide Web Virtual Library on Sustainable Development

<http://www.ulb.ac.be/ceese/meta/ORGANISATIONS>
Email: bkest@ulb.ac.be

A comprehensive list of internet sites dealing with sustainable development, including organisations, projects and activities, electronic journals, libraries, references, documents, databases and directories.

Abbreviations

ADB	Asian Development Bank
ANU	Australian National University
APACE	Appropriate Technology for Community and Environment
ASEAN	Association of Southeast Asian Nations
AusAID	Australian Agency for International Development
CAFOD	Catholic Fund for Overseas Development (UK)
CDM	Clean Development Mechanism
CEO	Chief Executive Officer
CNRT	<i>Conselho Nacional da Resistancia Timorese</i> (National Council of Timorese Resistance)
CNRT/CN	<i>CNRT/Congresso Nacional</i> (CNRT/National Congress)
CRES	Centre for Resource and Environment Studies (ANU)
EFZ	Exclusive Fishing Zone
EPA	Environment Protection Agency
EPU	Environment Protection Unit, ETTA
ESD	Ecologically Sustainable Development
ETFOG	East Timor Forestry Group
ETTA	East Timor Transitional Administration
ET-WAVE	East Timorese Women Against Violence
FONGTIL	<i>NGO Forum Nasional Timor Lorosa'e</i> (East Timor NGO Forum)
GHG	Greenhouse gas
HIVOS	Humanistic Institute for Cooperation with Developing Countries (Netherlands)
ICEL	Indonesian Centre for Environmental Law
IISD	International Institute for Sustainable Development
INGO	International Non-Government Organisation
INTERFET	International Forces in East Timor
IUCN	International Union for Conservation of Nature
NGO	Non-Government Organisation
NSW	New South Wales
NZODA	New Zealand Official Development Assistance
OMT	<i>Organizacao Mulher Timor</i> (Timorese Women's Organisation)
PAS	<i>Prontu atu Serbi</i> (ready to serve)
RECOFTC	Regional Community Forestry Training Centre (Thailand)
REDE	Feto Timor Lorosa'e (East Timorese Women's Network)
RMIT	Royal Melbourne Institute of Technology
TROCAIRE	Irish Catholic Agency for World Development
UN	United Nations
UNCSD	United Nations Commission for Sustainable Development
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNFCCC	United Nations Framework Convention on Climate Change
UNICEF	United Nations Children's Fund
UNTAET	United Nations Transitional Administration in East Timor
UNTIL	<i>Universitas Nasional Timor Lorosa'e</i> (National University of East Timor)
USAID	United States Agency for International Development
WALHI	<i>Wahana Lingkungan Hidup Indonesia</i>
WCED	World Commission on Environment and Development
WFP	World Food Program
WHO	World Health Organisation
WWF	World Wildlife Fund
WTO	World Trade Organisation