

# THE TIMOR-LESTE COASTAL / MARINE HABITAT MAPPING FOR TOURISM AND FISHERIES DEVELOPMENT PROJECT

## PROJECT NO 2

### Coastal and Marine Ecotourism Values, Issues and Opportunities on the North Coast of Timor Leste

### Final Report

Edyvane, K., McWilliam, A., Quintas, J., Turner, A., Penny, S., Teixeira, I., Pereira, C., Tibirica, Y., Birtles, A.

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# Coastal & Marine Ecotourism Values, Issues & Opportunities on the North Coast of Timor Leste – Final Report

**Date:** October 2009

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Karen Edyvane (NRETAS), Andrew McWilliam (ANU), Jose Quintas (Directorate of Tourism), Ann Turner (Directorate of Tourism), Shane Penny (NRETAS), Inacia Teixeira (Directorate of Tourism), Carmen Joela Pereira (Directorate of Tourism), Yara Tibirica (James Cook University), Alistair Birtles (James Cook University).



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Karen Edyvane (NRETAS).



# EXECUTIVE SUMMARY

Project Title: Coastal & Marine Ecotourism on the North Coast of Timor Leste

Project Leaders: Karen Edyvane (NRETAS), Andrew McWilliam (ANU), Jose Quintas (Directorate of Tourism)

Other Project Participants: Ann Turner (Directorate of Tourism), Shane Penny (NRETAS), Inacia Teixeira (Directorate of Tourism), Carmen Joela Pereira (Directorate of Tourism), Yara Tibirica (James Cook University), Alistair Birtles (James Cook University)

## *Introduction*

Well-managed coral reefs have the potential to provide significant economic benefits for Timor Leste. Within South East Asia (SEA), the potential value of coral reef fisheries is 38.5% of the global total of US\$5.7 billion, while the potential value of tourism is 50% of the global total of US\$9.6 billion. This reflects the continued high dependence of countries within the SEA region on coral reefs for food security and increasing tourism related revenue.

Located within the Coral Triangle region and adjacent to a major migratory wildlife corridor (Wetar Strait-Savu Sea) and an 'oceanic hotspot' for pelagic and migratory wildlife - Timor-Leste has significant potential for coastal-marine ecotourism development. Further nearshore, accessible deepwater habitats refreshed by upwellings, brings both marine predators and prey to within reach of the coast. Together with accessible fringing coral reefs, this provides excellent conditions for dive tourism, particularly along the north and east coast of Timor Leste. To date, coastal and marine ecotourism is under-developed in Timor-Leste, with limited tourism operations, infrastructure, capacity and the lack of a strategic approach to regional coastal tourism planning. Despite this, there are significant opportunities for growth and development of marine-based tourism.

The primary objective of the project is to identify coastal-marine ecotourism opportunities and management issues along the northern coast of Timor Leste, between Dili and Jaku Island. It was agreed that the focus area of the project should be extended to include the coastal and marine areas of the declared Marine Park (adjacent to the Nino Conis Santana National Park). The project included undertaking a (i) natural-cultural coastal heritage survey of the north coast; (ii) case study on dive-based coral reef tourism (Masters study by Yara Tibirica) and (iii) a 2-day ecotourism stakeholder's workshop to present results and identify management issues, challenges and directions. The project integrates with coastal-marine mapping/surveys (Project 1); megafauna surveys (Project 3); Nino Konis Santana Marine Park (Project 4)

## *Coastal Heritage Field Survey*

1. Department of Tourism (Jose Quintas) participated in a field reconnaissance trip along the north coast of Timor Leste (August 27-29, 2007) with NRETAS (K Edyvane).
2. Andrew McWilliam completed a preliminary report on '*Sites of Natural, Historical or Cultural Interest, in the Dili to Jaco Island region*'. The report highlighted a range of locations along the north coast of East Timor (east of Dili) and extending southwest

of Jaco Island to Lore to coincide with the proposed western boundary of the Marine Protected Area. The report was a starting point for more detailed field assessment planned for September 2008.

3. A heritage field survey was undertaken of the north coast and hinterlands of Timor Leste (25-30 September 2008) by NRETAS (K Edyvane) and ANU (A McWilliam). Key coastal-marine ecotourism sites, values, infrastructure and issues along the north coast were identified. Over 150 sites of cultural significance were identified, recorded and mapped including:
  - sites of religious significance and ceremonies (eg. churches, shrines, grottos, graveyards)
  - sites of traditional or indigenous significance (eg. ancestral alter posts, *mani me*, shrines, sacred sites or *lulics*, cave paintings, traditional graves)
  - sites of customary harvest and indigenous festivals (eg. natural/man-made fish traps, customary harvest of *Meci* or sea worms, fish)
  - sites of architectural significance (traditional houses, Portugese forts, Portugese colonial offices, manors, houses)
  - sites of political significance and 'resistance history' (eg. Indonesian military posts, graffiti, Fretilin outposts or safe houses, sites of massacres)
  - sites of natural significance (eg. geological features/landscapes).
  - sites of scenic or aesthetic significance (eg. scenic drives, mountain vistas, coastal vistas).

Spatial maps are currently being produced of key natural, cultural values, and relevant ecotourism infrastructure – and data needs to be integrated with existing cultural mapping undertaken by the Directorate of Culture.

#### *Case-Study – Coral Reef Tourism*

- A targeted study was undertaken by Yara Tibirica (James Cook University) to assess the potential for coral reef dive tourism in Timor Leste. The study (Masters project) included, a desktop review, targeted interviews with coral reef dive operators and tourism stakeholders and a SWOT analysis to assess potential dive tourism opportunities.
- “The potential for sustainably managed SCUBA diving tourism to assist in both community development and coral reef conservation in developing countries - with a focus on a case study from Timor Leste (East Timor)” (Masters Thesis, Yara Tibirica, James Cook University)

#### *Coastal-Marine Ecotourism Stakeholder Workshop*

- The results of the TL Coastal Heritage Survey conducted in September 2008, was formally presented to relevant government and industry ecotourism stakeholders in Timor Leste at a 1-day coastal ecotourism workshop (Dili, April 29 2009), organised with the Directorate of Tourism and also, the Directorate of Culture (in consultation with the Ministry of Agriculture and Fisheries). This forum's primary aims were: (a) to identify the key coastal-marine natural and cultural heritage values of Timor Leste; (b) to identify potential coastal-marine ecotourism sites, themes and opportunities for



Timor Leste; (c) to identify key issues, priorities, needs and directions for the development of a sustainable, coastal-marine ecotourism in Timor Leste.

- This workshop enabled strong engagement and input from relevant and key government stakeholders (tourism, culture, environment and fisheries) and also, local tourism industry stakeholders in discussions and priority-setting for coastal ecotourism development and marine-terrestrial park tourism – prior to the completion of the final report identifying opportunities for coastal and marine ecotourism development in Timor Leste.

#### *Capacity-Building and TL Engagement*

- Department of Tourism (Jose Quintas) participated in the field reconnaissance trip along the north coast of Timor Leste (August 27-29).
- Directorate of Tourism organised the coastal ecotourism workshop (29 April 2009), in consultation with the Directorate of Culture, Environment and Ministry of Agriculture and Forestry. A total of 36 representatives from government, industry and NGO organisations attended the workshop.

#### *Emerging Issues & Priorities*

1. There are a significant number of sites and opportunities for ecological and cultural tourism and development along the north and east coast of Timor Leste. Sites of cultural significance would ideally complement sites of recognised natural significance.
2. Religious and political tourism are strong potential cultural ecotourism themes in TL.
3. Religious sub-themes include the history of Catholicism in TL (esp. Franciscan and Dominican) and also, very strong and intact Indigenous culture and customary practices (esp. Fatuluku culture).
4. Strong political tourism sub-themes include sites of Portugese colonisation, Indonesian occupation and also, Fretilin resistance history and events.
5. Coastal-marine biodiversity, especially coral reef diving and interactions with marine wildlife (i.e. whales, dolphins, dugongs, turtles & manta rays) – offer significant potential for ecotourism development in TL.
6. Given the large number of whales (esp. pilot whales, humpbacks) visiting the north coast, in very close proximity to the shoreline – and the number of nesting turtle sites - priority consideration should be given to the development, promotion and management of whale-watching and turtle tourism in Timor Leste.
7. Community-based ecotourism (e.g. eco-villages) provide significant opportunities for regional and local economic development, with the potential to combine nature-based tourism and cultural tourism.
8. Need to assess and integrate current natural and cultural data and mapping – with previous mapping undertaken by the Directorate of Culture.

9. Infrastructure and quality of accommodation and tourist services in TL are limited and generally, of poor quality. Further, development of an eco-tourism sector in TL is highly dependent on a stable and peaceful political environment.
10. Integration of ecotourism planning is urgently required with the planning of Nino Konis Santana National Park and Marine Park (established in 2007). It is essential that ecotourism planning and Marine Park planning be integrated, as the Marine Park management plan will likely form the major planning instrument for managing the natural and cultural values in the region. As such, eco-tourism planning needs to be integrated with wider land use zoning consultation process for future management arrangements of the Park.
11. All available cultural and natural spatial information collected through this project also needs to be integrated within a broader, coastal-marine GIS database or decision support system (managed within a land-use and planning agency, ie. ALGIS) – and include relevant socio-economic data (eg. coastal infrastructure, land tenure, etc.) - to assist with future coastal planning, management and sustainable development in Timor Leste.

Following consultation with key government, industry and coastal-marine ecotourism stakeholders (29<sup>th</sup> April 2009, 4-5 June 2009), the report outlines a total of 33 specific management issues and recommendations to assist the GoTL in ecotourism promotion, planning and development; coastal-marine cultural heritage management; and coastal-marine natural heritage management.

Títulu Projetu: Eko-turizmu Tasi-Ibun & Tasi-laran iha Timor-Leste nia Kosta Norte

Líder sira projetu nian: Karen Edyvane (NRETAS), Andrew McWilliam (ANU), Jose Quintas, (Direisaun Nasional Turizmu)

Projetu nia Partisipante sira seluk: Ann Turner (Direisaun Nasionál Turizmu), Shane Penny (NRETAS), Inacia Teixeira (Direisaun Nasionál Turizmu), Carmen Joela Pereira (Direisaun Nasionál Turizmu), Yara Tibirica (James Cook University), Alistair Birtles (James Cook University)

### *Introdusaun*

Bainhira ita halo jestaun di'ak ba *recifes de corais* (au-ruin) nia sai potencialidade ida ne'ebé fó benefísiu boot ba Timor-Leste. Iha Sudeste Aziátiku nia laran (South East Asia, SEA) valór potenciál au-ruin ninian representa 38.5% husi totál globál dólar amerikanu biliaun lima pontu hitu (US\$5.7), enkuantu ke valór potenciál turizmu ninian representa 50% husi totál globál dólar amerikanu biliaun sia pontu neen (US\$9.6). Ida-ne'e hatudu katak nasaun sira iha SEA nia laran depende maka'as ba au-ruin hodi bele garante seguransa ai-han nian no hasa'e rendimentu ne'ebé iha relasaun ho turizmu.

Hela iha rejaun Coral Triangle nia laran no besik korredór fauna migratória ninian (Wetar Strait-Savu Sea) no 'oceanic hotspot' ba *pelágicos no fauna migratória* - Timor-Leste iha potencialidade boot ba dezvoltimentu eko-turizmu tasi-ibun no tasi-laran. Iha besik liu tasi-ninin, *habitat* sira iha bee-kle'an ne'ebe asesivel, lori animal aat sira tasi nian no vítima sira mai to'o besik iha tasi-ninin. Hamutuk ho au-ruin sira ne'ebé asesivel, nia oferese kondisaun ida di'ak tebes ba turizmu-luku nian (dive tourism), liliu iha kosta norte no sul Timor-Leste nian. To'o ohin, eko-turizmu tasi-ibun no tasi-laran iha Timor-Leste la hetan dezvoltimentu ida di'ak (subdesenvolvido), ne'ebé operasaun turizmu, infraestruturá no kapasidade limitadu no laiha abordajen (approach) estratéjiku ba planeamentu turizmu tasi-ibun ninian. Maski nune'e, iha oportunidade signifikativu ba kreximentu no dezvoltimentu turizmu iha área tasi nian.

Objetivu prinsipál projetu ne'e ninian mak atu identifika oportunidade kona-ba eko-turizmu tasi-ibun no tasi-laran no kestaun sira kona-ba jestaun iha kosta norte Timor-Leste nian, entre Dili ho Illa Jaku. Konkorda ona katak sei haluan tan projetu ne'e nia foku hodi inklui área tasi-ibun no tasi-laran sira husi propostu Parke Tasi nian (besik Parque Nacional Nino Konis Santana). Projetu ne'e buka mós atu halo (i) peskiza kona-ba patrimóniu natural no kulturál iha kosta norte; (ii) kazu-estudu kona-ba turizmu-luku iha au-ruin (estudu diretór husi Yara Tibirica) no (iii) hala'o workshop ida iha loron rua nia laran ba parte sira ne'ebé iha interese kona-ba eko-turizmu hodi apresenta rezultadu sira no identifika kestaun sira jestaun ninian, dezafiu no matadalan ka orientasaun. Projetu ne'e integra mapeamentu (mapping) tasi-ibun no tasi-laran (projetu 1); peskiza mega-fauna (projetu 3); Parque Marinho Nino Konis Santana (Projetu 4).

Peskiza iha Kampu kona-ba Patrimóniu Tasi-Ibun nian

1. Departamentu Turizmu (Jose Quintas) halo vizita rekoñesimentu ba kosta norte Timor-Leste nian (27-29 Agostu 2007) hamutuk ho NRETAS (K Edyvane).

2. Andrew McWilliam ramata relatóriu preliminar kona-ba '*Sites of Natural, Historical or Cultural Interest, in the Dili to Jaco Island region*'. Relatóriu ne'e hatudu fatin lubuk ida iha kosta norte Timor-Leste nian (parte loromunu Dili nian) no husi parte sudoeste (southwest) Illa Jaku nian ba to'o Loré atu bele tuir proposta fronteira osidental Area Protejida Tasi nian. Relatóriu ne'e hanesan pontu partida ida hodi bele halo avaliasaun ida ho detalle boot liu tan, ne'ebé atu halo iha Setembru 2008.
3. NRETAS (K Edyvane) no ANU (A McWilliam) hala'o ona peskiza kona-ba patrimóniu iha kosta norte no parte interior Timor-Leste nian (25-30 Setembru 2008). Identifika ona fatin prinsipál sira eko-turizmu tasi-ibun no tasi-laran ninian, valór sira, infraestruturá no problema sira iha kosta norte. Identifika ona fatin liu 150, halo ona rejistu no mapeamentu, ne'ebé inklui:
  - Fatin sira ne'ebé iha signifikadu relijiozu no serimoniál (ezemplu igreja, santuáriu, gruta, rate sira)
  - Fatin sira ne'ebé iha signifikadu tradisionál (ezemplu, fatin altar bei'ala sira nian, *mini-me*, santuáriu sira, fatin sagradu sira ka lulik, pintura, rate tradisionál sira)
  - Fatin kaer ikan no festival rai-na'in sira nian (ezemplu, lasu naturál ba ikan ka ne'ebé ema mak halo, kaer Meci ka ular oan sira tasi nian, ikan, tuir lisan tradisionál)
  - Fatin sira ne'ebé iha signifikadu arkiketura nian (uma tradisionál sira, *forte* sira Portugés ninian, eskritóriu sira Portugés ninian, xefe tradisional sira, uma)
  - Fatin sira ne'ebé iha signifikadu polítiku no 'istória rezisténsia nian' (ezemplu, postu militar sira Indonesia nian, pintura, Fretilin nia postu avansadu sira ka fatin-subar nian, fatin sira masakre ninian)
  - Fatin sira ne'ebé iha signifikadu naturál (ezemplu, karaterístika jeolójika no *paisagem* sira)
  - Fatin sira ne'ebé iha signifikadu *cênico ou estético* (ezemplu, vista foho ninian, tasi-ibun ninian, *cênico*).

Oras ne'e halo daudaun mapa espasiál kona-ba valór natural, kulturál prinsipál sira no infraestruturá eko-turizmu relevante sira – no presiza integra dadus sira iha mapeamentu kulturál ne'ebé iha husi Diresaun Nasionál Kultura.

#### *Kazu-Estudu - Turizmu Hau-Ruin*

- Yara Tibirica (James Cook University) halo estudu ida hodi halo avaliasaun kona-ba potencialidade turizmu-luku bazeia ba au-ruin iha Timor-Leste. Studu ne'e (projetu diretór) inklui revizaun *desktop* ida, entrevista ba operadór sira kona-ba luku iha au-ruin no parte sira ne'ebé iha interese iha área turizmu no análise SWOT ida hodi atu halo avaliasaun ba oportunidade turizmu luku nian.
- 'Potencialidade ba turizmu luku SCUBA ne'ebé hala'o ho sustentabilidade hodi fó asisténsia ba dezenvolvimentu komunitáriu no konsersasaun ba au-ruin iha nasaun hirak ne'ebé mak foin dezenvolve an – ho atensaun ida ba kazu-estudu husi Timor-Leste (East Timor)' (Teze Diretór, Yara Tibirica, James Cook University)

#### *Workshop ba Parte Interesadu sira kona-ba Eko-Turizmu Tasi-Ibun no Tasi-Laran*

- Rezultadu husi peskiza ba patrimóniu tasi-ibun TL nian, ne'ebé hala'o iha Setembru 2008, apresenta ona formalmente ba governu relevante no parte intersadu sira eko-

turizmu ninian iha Timor-Leste durante workshop lora ida kona-ba eko-turizmu tasi-ibun nian (Dili, 29 Abril 2009), ne'ebé organiza hamutuk ho Diresaun Nasionál Turizmu nian no mós Diresaun Nasionál Kultura nian (liu husi konsulta ho Ministériu Agrikultura no Peska). Workshop ne'e nia objetivu prinsipál mak: (a) atu identifika Timor-Leste nian valór iha área patrimóniu kulturál no natural tasi-ibun no tasi-laran nian; (b) atu identifika fatin potenciál sira tasi-ibun no tasi-laran nian, temas no oportunidade sira ba Timor-Leste; (c) atu identifika kestaun sira, prioridade, nesidade no orientasaun ba dezvoltimentu ba eko-turizmu tasi-ibun no tasi-laran ida ne'ebé sustentavel iha Timor-Leste.

- Workshop ne'e loke dalan ba parte interesadu relevante no prinsipál sira iha governu nia laran (turizmu, kultura, meu-ambiente no peska) no mós parte interesadu sira iha indústria turizmu nian atu partisipa maka'as iha diskusaun no definisaun prioridade ba dezvoltimentu eko-turizmu tasi-ibun no parke turizmu rai-tasi – molok atu ramata relatóriu finál ne'ebé identifika oportunidade sira ba eko-turizmu iha tasi-ibun no tasi-laran Timor-Leste nian.

### *Kapasitasaun no Timor-Leste nia Partisipasaun*

- Departamentu Turizmu (Jose Quintas) halo vizita rekoñesimentu ba kosta norte Timor-Leste nian (27-29 Agostu).
- Diresaun Nasionál Turizmu organiza workshop ida kona-ba eko-turizmu tasi-ibun nian (29 Agostu 2009), liu husi konsulta ho Diresaun Nasionál Kultura, Meu-Ambiente no Ministériu Agrikultura no Floresta. Representante hamutuk ema na'in 36 husi governu, indústria, NGO sira, mak partisipa iha workshop ne'e.

### *Kestaun sira ne'ebé mosu no prioridade sira*

1. Iha fatin lubun boot ida no oportunidade barak ba turizmu ekolójiku no kulturál no dezvoltimentu iha tasi-ibun norte no leste Timor-Leste nian. Dí'ak liu se fatin sira ne'ebé iha segnifikadu kulturál komplementa fatin sira ne'ebé iha segnifikadu naturál.
2. Turizmu relijiozu no polítiku representa tema eko-turizmu kultural ne'ebé iha potencialidade maka'as iha Timor-Leste.
3. Sub-tema relijiozu inklui istória katolisizmu ninian iha TL (esp. Franciscanos) no mós hahalok tradisionál no kulturál ema rai-na'in sira nian ne'ebé sei tomak hela no maka'as (esp. Kultura Fatuluka).
4. Sub-tema maka'as kona-ba turizmu polítiku inklui fatin sira kolonizasaun Portugal nian, okupasaun Indonesia nian no mós istória no akontesimentu sira husi rezisténsia Fretilin nian.
5. Bio-diversidade tasi-ibun no tasi-laran nian, liliu kona-ba luku iha au-ruin no ligasaun ho animal fuik sira tasi nian (ezemplu, baleia, golfiñu (ikan-lemur), kelembeli, lenuk & *manta rays*) – oferece potencialidade boot ida ba dezvoltimentu eko-turizmu iha Timor-Leste.
6. Tanba número boot baleia ninian (esp. baleia-pilotu, *humpbacks*) ne'ebé mai iha tasi-ibun norte, to'o besik kedas tasi-ninin, no número fatin ne'ebé lenuk sira tolun

ba – tenke fó konsiderasaun boot ida ba dezenvolvimentu, promosaun no jestaun atu oinsá tau matan ba baleia sira no turizmu lenuk nian iha Timor-Leste.

7. Eko-turizmu ne'ebé bazeia ba comunidade (ezemplu, eko-vila) oferese oportunidade boot ba dezenvolvimentu ekonómiku lokál no rejionál, ho potencialidade atu kombina turizmu ne'ebé bazeia ba natureza no turizmu kultural.
8. Presiza halo avaliaun no integra mapeamentu no dadus kultural no natural ne'ebé iha – ho mapeamentu ida uluk ne'ebé Diresaun Nasionál Kultura halo.
9. Infraestruturá no kualidade akomodasaun no servisu turizmu iha TL oras-ne'e limitadu no jeralmente kualidade la di'ak. Alende ne'e, dezenvolvimentu setór eko-turizmu iha TL depende maka'as tebes ba ambiente polítiku ida ne'ebé estavel no pasifiku.
10. Presiza halo lalais integrasaun planeamentu eko-turizmu ho planeamentu Parke Nasionál Nino Konis Santana no Parke Tasi nian (ne'ebé harii iha 2007). Importante katak planeamentu eko-turizmu ho Planeamentu Parke Tasi nian integra malu, tanba planu jestaun kona-ba Parke Tasi nian bele forma instrumentu planifikasaun boot liu atu halo jestaun ba valór kultural no natural iha rejiaun ne'e. Nune'e, planeamentu eko-turizmu presiza integra iha prosesu luan kona-ba uza rai ninian atu bele uza hodi halo arranju ba jestaun ba Parke ne'e iha futuru.
11. Informasaun espasiál natural no kulturál ne'ebé halibur husi projetu ida-ne'e presiza integra iha banku-dadus GIS ka sistema apoiu ba desizaun (ne'ebé maneja iha ajénsia kona-ba planeamentu no uza rai nian, ezemplu ALGIS) – no inklui dadus sósiu-ekonómiku relevante sira (ezemplu, infraestruturá iha tasi-ibun no tasi-laran, rai na'in sira, no seluk tan) – atu fó assisténsia ba planeamentu, jestaun no dezenvolvimentu sustentavel ba tasi-ibun iha loran-aban iha Timor-Leste.

Bainhira halo tiha konsulta ho parte interesadu prinsipál sira husi governu, indústriá eko-turizmu tasi-laran no tasi-ibun nian (29 Abril 2009, 4-5 Juñu 2009), relatóriu ne'e apresenta kestaun spesífika tolunulu resin tolu (33) husi jestaun no lia-menon atu tulun GoTL halo promosaun, planeamentu no dezenvolvimentu ba eko-turizmu; jestaun ba patrimóniu kulturál tasi-laran no tasi-ibun nian; no jestaun ba patrimóniu naturál tasi-laran no tasi-ibun nian.

Título do Projecto: Ecoturismo Costeiro e Marinho na Costa Norte de Timor-Leste

Líderes do Projecto: Karen Edyvane (NRETAS), Andrew McWilliam (ANU), José Quintas (DN Turismo)

Outros Participantes no Projecto: Ann Turner (DN Turismo), Shane Penny (NRETAS), Inácia Teixeira (DN Turismo), Carmen Joela Pereira (DN Turismo), Yara Tibirica (James Cook University), Alistair Birtles (James Cook University)

### *Introdução*

Os recifes de corais, quando bem geridos, têm o potencial de fornecer benefícios económicos significativos a Timor-Leste. Dentro do Sudeste Asiático (SEA), o valor potencial das pescas em recifes são 38.5% do global total de 5.7 mil milhões de dólares americanos, enquanto o valor potencial do turismo é de 50% do global total de 9.6 mil milhões de dólares americanos. Isto reflecte a alta dependência contínua dos países da região SEA dos recifes de coral para a segurança alimentar e aumento das receitas provenientes do turismo.

Localizado na região do Triangulo de Coral e adjacente a um grande corredor migratório de vida selvagem (Estreito de Wetar – Mar de Savu) e um hotspot oceânico de vida selvagem marinha pelágica e migratória, Timor-Leste tem um potencial significativo para o desenvolvimento do ecoturismo costeiro e marinho. Mais próximo da linha de costa, existem habitats acessíveis, de águas profundas renovadas por afloramento costeiro, que põem ao alcance da linha costeira tanto predadores marinhos como as suas presas. Em conjunto com recifes em franja, proporcionam condições excelentes para o turismo de mergulho, especialmente ao longo das costas Norte e Este de Timor-Leste. Até à data, o ecoturismo costeiro e marinho, encontra-se subdesenvolvido em Timor-Leste, com um número limitado de operadores turísticos, infra-estruturas, capacidade e ausência de uma abordagem estratégica ao planeamento do turismo costeiro regional. Apesar disto, existem oportunidades significativas para crescimento e desenvolvimento do turismo marinho.

O primeiro objectivo deste projecto é identificar oportunidades de turismo marinho e costeiro, e problemas de gestão ao longo da costa Norte de Timor-Leste, entre Díli e a ilha de Jaco. Foi acordado que a área de estudo do projecto deveria ser alargada de modo a incluir as áreas marinhas e costeiras do Parque Marinho declarado (adjacente ao Parque Nacional Nino Konis Santana). O projecto incluiu (i) um levantamento do património natural e cultural costeiro na costa Norte; (ii) estudo sobre o turismo de mergulho em recifes de coral (estudos de Mestrado de Yara Tibirica); e (iii) um seminário de dois dias com todos os interessados para apresentação de resultados e identificação de questões, desafios e direcções de gestão. O projecto está integrado com os projectos de mapeamento costeiro e marinho (Projecto 1); levantamento de megafauna (Projecto 3); Parque Marinho Nino Konis Santana (Projecto 4).

### *Levantamento do Património Costeiro*

1. A Direcção Nacional do Turismo (José Quintas) participou numa viagem de reconhecimento no campo ao longo da costa Norte de Timor-Leste (27-29 de Agosto de 2007) com o NRETAS (K. Edyvane).

2. Andrew McWilliam completou um relatório preliminar sobre “Locais de Interesse Natural, Histórico ou Cultural na Região entre Dili e a Ilha de Jaco”. O relatório sublinhou uma variedade de localizações ao longo da costa Norte de Timor-Leste (a Este de Dili) e que se estende para Sudoeste da ilha de Jaco até Loré, de modo a coincidir com a fronteira oeste da Área Marinha Protegida. O relatório foi um ponto de partida para um levantamento no campo mais detalhado planeado para Setembro de 2008.
3. Foi feito um levantamento no campo, do património na costa Norte e nas regiões interiores de Timor-Leste (25-30 de Setembro de 2008) pelo NRETAS (K. Edyvane) e pela ANU (A. McWilliam). Foram identificados os principais locais de interesse, valores, infra-estruturas e problemas do turismo marinho e costeiro ao longo da costa Norte. Mais de 150 locais de interesse cultural foram identificados, gravados e mapeados, incluindo:
  - Locais de interesse religioso e cerimonioso (e.g. igrejas, santuários, grutas, cemitérios)
  - Locais de interesse tradicional ou indígena (e.g. antigos postes de altar, *mani me*, santuários, locais sagrados ou *lulic*, pinturas rupestres, sepulturas tradicionais)
  - Locais de colheitas tradicionais e de festivais indígenas (e.g. armadilhas de peixe naturais ou feitas pelo Homem, colheita tradicional de *Meci* ou poliquetas marinhos, e de peixe)
  - Locais de interesse arquitectónico (casas tradicionais, fortes Portugueses, escritórios coloniais Portugueses, mansões, casas)
  - Locais de interesse político e de história da Resistência (e.g. postos militares Indonésios, graffiti, postos ou esconderijos da FRETILIN, locais de massacres)
  - Locais de interesse natural (e.g. particularidades geológicas, paisagens)
  - Locais de interesse cénico ou estético (e.g. roteiro cénico, paisagens de montanha, paisagens costeiras)

Neste momento, estão a ser produzidos mapas espaciais dos principais locais de interesse natural e cultural e das infra-estruturas turísticas relevantes – e estes dados têm de ser integrados com o mapeamento cultural existente levado a cabo pela Direcção Nacional do Turismo.

#### *Estudo – Turismo associado a recifes de coral*

- Yara Tibirica (James Cook University) efectuou um estudo para avaliar o potencial do turismo de mergulho em recifes de coral em Timor-Leste. O estudo (projecto de Mestrado) incluiu uma revisão de bibliografia, entrevistas com operadores de mergulho em recifes de coral e outros interessados e uma análise SWOT para avaliar as potenciais oportunidades de turismo de mergulho.
- “O potencial para turismo de mergulho gerido de forma sustentável, para apoio ao desenvolvimento comunitário e à conservação dos recifes de coral em países em vias de desenvolvimento – com particular incidência num estudo em Timor-Leste” (Tese de Mestrado, Yara Tibirica, James Cook University)



### *Seminário de Ecoturismo Costeiro e Marinho*

- Os resultados do levantamento de património costeiro efectuado em Setembro de 2008, foram formalmente apresentados às agências governamentais relevantes e à indústria do turismo em Timor-Leste num seminário de 1 dia de ecoturismo costeiro (Díli, 29 de Abril de 2009), organizado com a Direcção Nacional do Turismo e também pela Direcção Nacional da Cultura (em colaboração com o Ministério da Agricultura e Pescas). Os principais objectivos deste fórum foram: (a) identificar os principais valores patrimoniais naturais e culturais costeiros e marinhos de Timor-Leste; (b) identificar potenciais locais para ecoturismo costeiro e marinho; (c) identificar os principais problemas, prioridades, necessidades e orientações para o desenvolvimento sustentável do ecoturismo costeiro e marinho em Timor-Leste.
- Este seminário permitiu um forte envolvimento das principais agências governamentais relevantes (turismo, cultura, ambiente e pescas) e também, da indústria turística local, em discussões e definição de prioridades para o desenvolvimento do ecoturismo costeiro e turismo do parque marinho e terrestre – antes da conclusão do relatório final que identifica as oportunidades para desenvolvimento do ecoturismo costeiro e marinho em Timor-Leste.

### *Capacitação e Envolvimento de Timor-Leste*

- A Direcção Nacional do Turismo (José Quintas) participou na viagem de reconhecimento ao longo da costa Norte de Timor-Leste (27-29 Agosto).
- A Direcção Nacional do Turismo organizou o seminário de ecoturismo costeiro (29 de Abril de 2009), em colaboração com a Direcção Nacional da Cultura, Direcção Nacional do Ambiente e com o Ministério da Agricultura e Pescas. Um total de 36 representantes do governo, indústria e ONG's participaram neste seminário.

### *Problemas Emergentes e Prioridades*

1. Existe um número significativo de locais e oportunidades para turismo ecológico e cultural e desenvolvimento ao longo das costas Norte e Este de Timor-Leste. Idealmente os locais de interesse cultural complementaríamos os locais de reconhecido interesse natural.
2. O turismo religioso e político são fortes temas potenciais para o ecoturismo cultural em Timor-Leste.
3. Subtemas religiosos incluem a história do catolicismo em Timor-Leste (especialmente Franciscanos e Dominicanos) e também, a cultura indígena e as práticas tradicionais muito fortes e intactas (especialmente a cultura Fataluku).
4. Subtemas do turismo político incluem os locais da colonização Portuguesa, ocupação Indonésia e também a história e eventos da Resistência da FRETILIN.

5. A biodiversidade costeira e marinha, especialmente o mergulho em recifes de coral e a interacção com vida marinha (i.e. baleias, golfinhos, dugongos, tartarugas e mantas) – oferece um potencial significativo para o desenvolvimento do ecoturismo em Timor-Leste.
6. Dado o grande número de baleias (especialmente baleias-piloto, baleias-de-bossa) que visita a costa Norte, muito perto da linha de costa – e o número de ninhos de tartaruga – deve ser dada prioridade ao desenvolvimento, promoção e gestão de observação de baleias e turismo de tartarugas em Timor-Leste.
7. O ecoturismo comunitário (e.g. *eco-villages*) oferece oportunidades significativas de desenvolvimento económico regional e local, com o potencial de combinar turismo de natureza com o turismo cultural.
8. Necessidade de avaliar e integrar os dados e mapas naturais e culturais – com mapas anteriores produzidos pela Direcção Nacional da Cultura.
9. As infra-estruturas e a qualidade de alojamento e dos serviços turísticos são limitados e, geralmente, de baixa qualidade. Para além disto, o desenvolvimento de um sector de ecoturismo em Timor-Leste é altamente dependente de um ambiente político estável e pacífico.
10. É urgente integrar o planeamento do ecoturismo com o planeamento do Parque Nacional Nino Konis Santana (declarado em 2007). É essencial que o planeamento do ecoturismo seja integrado com o planeamento do Parque Marinho, uma vez que o plano de gestão do Parque Marinho será provavelmente o maior instrumento de planeamento para a gestão dos valores naturais e culturais da região. Assim, o planeamento do ecoturismo tem de ser integrado com um processo de consulta alargado para a definição de zonas consoante o uso para futuros planos de gestão do Parque.
11. Toda a informação cultural e natural disponível colectada por este projecto também necessita de ser integrada dentro de uma base de dados de SIG costeiro e marinho alargada, ou sistema de apoio à tomada de decisões (gerida dentro de uma agência de ordenamento do território, i.e. ALGIS) – e incluir informação socioeconómica relevante (e.g. infra-estruturas costeiras, posse das terras, etc.) – para, no futuro, apoiar o planeamento, gestão e desenvolvimento sustentável da orla costeira em Timor-Leste.

Após consultas com os principais interessados do governo, indústria e do ecoturismo costeiro e marinho (29 de Abril de 2009 e 4-5 de Junho de 2009), o relatório resume um total de 33 questões específicas de gestão e recomendações para apoiar o Governo de Timor-Leste na promoção, planeamento e desenvolvimento do ecoturismo, gestão do património cultural costeiro e marinho, e gestão do património natural costeiro e marinho.

# 1 INTRODUCTION

## 1.1 Value of Coastal-Marine Ecotourism

Coastal-marine ecotourism has the potential to generate significant incomes and alternative sustainable livelihoods in some of the poorest countries in Southeast Asia. Southeast Asia (SEA) is not only a region of high cultural diversity, but it is also a region of global significance for tropical marine biodiversity - containing some of the most extensive coastlines and diverse coral reefs in the world, with Indonesia, Malaysia and the Philippines (together with Papua New Guinea) forming the centre of global coral diversity; the Indo-Malayan or Coral Triangle. The potential economic value of well-managed coral reefs in the SEA region is estimated at 42.5% of the global total of US\$29.8 billion attributed to coral reef values (Wilkinson 2004). In particular, coral reefs are a major source of potential economic wealth for marine tourism and fisheries in the region, with the potential value of coral reef tourism estimated to be 50% of the global total of US\$9.6 billion, while the potential value of fisheries has been estimated to be 38.5% of the global total of US\$5.7 billion (Wilkinson 2004). This reflects the continued very high dependence of SEA countries on coral reefs for food security and increasing tourism related revenue.

The SEA region is also home to over 30 species of marine mammals and six out of seven of the world's turtle species (listed as vulnerable, endangered or critically endangered on the IUCN Red List of Threatened Species), providing important nesting and foraging grounds, as well as important migration routes at the cross roads of the Pacific and Indian Oceans. More than one third of all known whales and dolphin species (collectively called cetaceans) can be found in the region, including the Whale Shark (*Rhincodon typus*) and the rare and endangered Blue Whale (*Balaenoptera musculus*). The cetacean diversity of the region (particularly the Alor Solor region) is illustrated by the local communities' long-standing tradition of whale hunting (Reeves 2002, Lundberg 2003). Reef fish diversity also follows a similar trend, with more than half of global reef fish species found in SEA. While marine megafauna tourism is not well-established in the SEA region, world-wide it is rapidly growing sector of the tourism industry. A recent global review of whale watching has estimated that, in 2000, the industry involved 9 million participants and generated over one billion dollars of income to whale-watcher operators and supporting infrastructure (such as accommodation, restaurants and souvenirs), a 5 fold increase over the decade of the 1990's (Hoyt 2001).

## 1.2 Coastal Tourism in Timor Leste

The significant potential for tourism (and the need for tourism development) has been identified as major strategy in the reconstruction of Timor Leste (Ximenes & Carter 2000, Anderson & Deutsch 2001, Carter *et al.* 2001, GERTiL 2001). To-date however, the tourism industry in Timor-Leste is still in its early stages of development (Weaver 2008). In 2004, tourism accounted for only 0.37% (35 businesses) of all licensed, registered businesses in the Timor Leste – representing an estimated total lodging capacity of 1,329 rooms (of which over 90% are located in Dili), and directly employing an estimated 1,638 people in the industry (Pedi 2007). Significantly, the industry is also very reliant on the large number of international workers in Timor Leste, with a majority of international visitations to the country being work (not leisure) based - providing a significant market for week-end tourism (Weaver 2008). Out of 36,000 international arrivals in 2005, only 3000 were estimated to be tourists (mainly from Australia, Portugal, Japan and China) (Pedi 2007).

Timor-Leste has a coastline of 706 km, however, the extent and status of its' coastal and marine resources are poorly known. Despite this, there are significant opportunities for coastal and marine-based tourism. Fringing reefs, (reefs which closely follow the shoreline), form an almost continuous (and accessible) strip along the coast of Timor-Leste (Monk *et al.* 1997). The topography of fringing reefs along the north coast of Timor-Leste ranges from gentle slopes to sheer walls. Significantly, Timor-Leste's north coast sits on the edge of an underwater precipice, the Wetar Strait, a marine trench approximately 3 km deep, which provides a corridor for pelagic and migrating marine megafauna (ie. whales, dolphins, turtles, tuna, sailfish, rays) that patrol offshore. Timor-Leste's coastal coral reefs sit at the heart of the Indo-Pacific 'coral triangle' and are constantly refreshed by deep-water, nutrient-rich upwellings that bring both predators and prey to within reach of the coast. These accessible 'nearshore-yet-deep water' habitats and their megafauna, provides conditions for some of the world's best diving and marine wildlife interactions. Dolphins are common in the waters all around Timor-Leste, particularly in Manatutu district, Carimbala, Likisá district and Tutuala in Lospalos. Resident grazing dugongs, mantas and eagle rays are known at Dollar Beach. Whale sharks, orcas and mantas are known from the roadside site of Whale Shark Point (also known as Lone Tree) during the months of August-November. Large groups of dolphins and migrating whales are often seen in the deep waters between Ataúro Island and Dili.

Several studies have highlighted the potential tourism value of the coastal and marine environments of Timor Leste (Ximenes & Carter 2000, GERTiL 2001, Bock 2006). These studies highlight the countries accessible, relatively intact coral reefs (and hence, diving and snorkelling opportunities)

and white sandy beaches (particularly along the north coast), underwater caves, offshore surf, and also, cetacean watching (particularly in the Savu Sea) (Ximenes & Carter 2000, GERTiL, 2001, Bock 2006). To this end, the Government of Timor Leste has identified sustainable ecotourism and the development of a niche market for nature-based tourism, as central to the development of a responsible tourism industry (RD'TL 2007a).

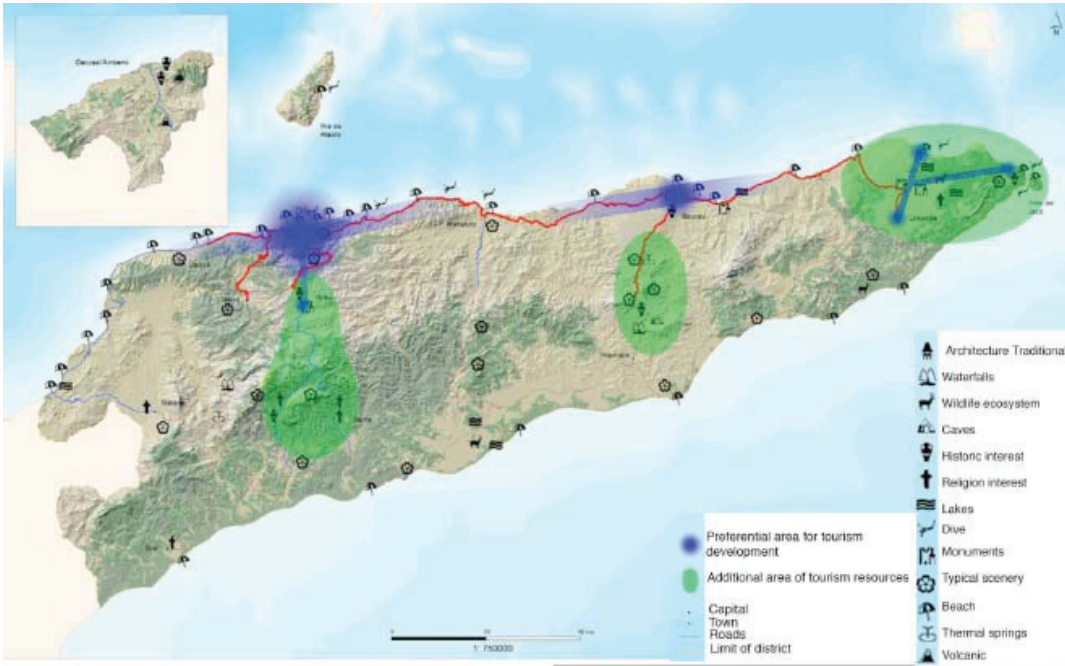
While the significant potential for coastal and marine ecotourism of Timor Leste has been identified, it is under-developed, with limited tourism operations, infrastructure, and capacity. Outside of Dili, coastal tourism infrastructure is primarily confined to several low-budget eco-lodges at Valu Beach and Ataúro Island, homestay accommodation at Com and some middle-class, colonial style hotels in major towns (Bock 2006). Dive tourism (snorkelling, SCUBA) is relatively recent (<5 years) (Harasti 2007, Tibirica 2007) and small-scale in Timor-Leste. There are only 3 established diving companies (Dive Timor Lorosae, The Free Flow, Dili Dive) running scuba safaris to sites in Dili, Ataúro Island, Tutuala and Jaku Island. There is only one established tourism boat charter operation (Island Charters, which operates from Dili to Atauro Island). Similarly, whale watching and dolphin watching activities are not well established. Despite this, several successful community-based, coastal-marine ecotourism development projects (ie. eco-village, diving/snorkelling and fishing activities) currently exist at Atauro Island, but are primarily run by the NGO, Roman Luan, supported by Australian conservation agencies (ACF, MCCN). Similarly, in recent times, this village-based approach to coastal ecotourism development has also been successfully extended to the Tutuala and Jaku Island region, with the development of an eco-village (and snorkelling and fishing activities) at Valu Beach, through the national NGO, the Haburas Foundation (Haburas Foundation 2007a).

### **1.3 Coastal Ecotourism Planning**

Although under-developed, tourism (with a focus on ecotourism) has been identified as a key economic sector in the reconstruction and future of Timor Leste. Significantly, in development planning, it has been identified as an important component of sustainable development and also, the development of the local economy (Anderson & Deutsch, 2001; Carter, Prideaux, Ximenes, & Chatenay 2001; GERTiL, 2001, 2006; Ximenes & Carter 2000, Tibirica 2007). Much of this planning has highlighted both, the great potential for tourism and the current insufficient human or financial resources and also, the critical issues that need to be addressed for sustainable tourism development in Timor Leste: political instability, language issues, rudimentary infrastructure, human capacity, financial resources, negative image due to the war period, crime and malaria, health problems, food supply, and strategic planning for natural resources use (Ximenes & Carter 1999).

However, the need for effective governance and a strategic approach to regional (as well as national) coastal tourism planning are also key issues that need to be addressed in developing a sustainable tourism industry in Timor Leste.

The Ministry of Tourism, Trade and Industry is currently responsible for developing tourism in Timor Leste. While there is currently no legislation to regulate the planning and management of the industry, the IV Constitutional Government Program 2007-2012 (RD'TL 2007a) envisions the creation of specific legislation for the sector and the official adoption of a National Tourism Strategic Plan (Weaver 2008). The Ministry also receives support from the WTO and UNDP with tourism policy development (Basiuk 2006) and also, the Portuguese Group, GERTiL. Since 1999, GERTiL has worked to assist Timor Leste with sustainable tourism development and planning through the *Programa Indicativo de Cooperação Portugal-Timor* (IPAD) and *Programa de Desenvolvimento Turístico* (PROTUR) (GERTiL 2006).



**Figure 1:** Map of preferred areas for tourism development according to the project ‘ProTUR’ (Source: Instituto Português de Apoio ao Desenvolvimento (IPAD 2007). [Legend translated and adapted by Yara Tibiriçá, 2007].

Significantly, GERTiL (2006) has mapped the main attractions in Timor Leste and prioritised the main key regions for tourism development, albeit at a broad-scale (see Figure 1). The Nino Konis Sanatana National Park in the Com-Lospalos-Tutuala region was identified as a major focal point for nature-based and cultural tourism, with Dili and Baucau being identified as major tourism nodes (ie. with facilities, attractions, travel corridors) for accessing inland and remote mountain regions. This program (and also, other tourism development studies) have also highlighted the north coast’s

suitability for developing the ‘3-S’ (Sun, Sand, Sea) beach tourism due to its better infrastructure and accessibility, and more suitable climate (shorter wet season) (GERTIL 2001). In contrast, the south coast has been identified as not suitable for the ‘3-S’ tourism due to the presence of crocodiles and more turbulent coastal waters (which are not suitable for snorkelling and water-based activities).

#### 1.4 Ecotourism & Pro-Poor Tourism (PPT)

In this study, we have adopted the Ecotourism Australia (2006) definition of ecotourism:

“ecologically sustainable tourism with a primary focus on experiencing natural areas that foster environmental and cultural understanding, appreciation and conservation” (Ecotourism Australia 2006). However, in developing countries like Timor Leste, widespread poverty and the need for human survival is often the main threat to environmental conservation. As such, ecotourism needs to assist not only those people directly involved in ecotourism, but must also provide an economic alternative to unsustainable activities and create secondary opportunities. This can be achieved through community-based ecotourism (CBET) (Luttinger 1997; Raymundo 1998) and also, pro-poor tourism (PPT).

‘Pro-poor tourism’ encompasses a range of strategies to alleviate poverty and was developed in the late 1990’s in response to the urgent need to minimize poverty worldwide and to improve the benefits for poor communities (United Nations 2002). Pro-poor tourism is defined as “tourism that generates net benefits to the poor” (Bennett *et al.* 1999, p.396). These ‘benefits’ include economic, environmental, cultural and social benefits (Gutierrez *et al.* 2005). Significantly, pro-poor tourism differs from sustainable tourism, because PPT puts poverty alleviation as its first objective, while sustainable tourism often focuses on the environment (Ashley *et al.* 2000). Jamieson *et al.* (2004) explain that a tourism product or service is classified as PPT if it provides:

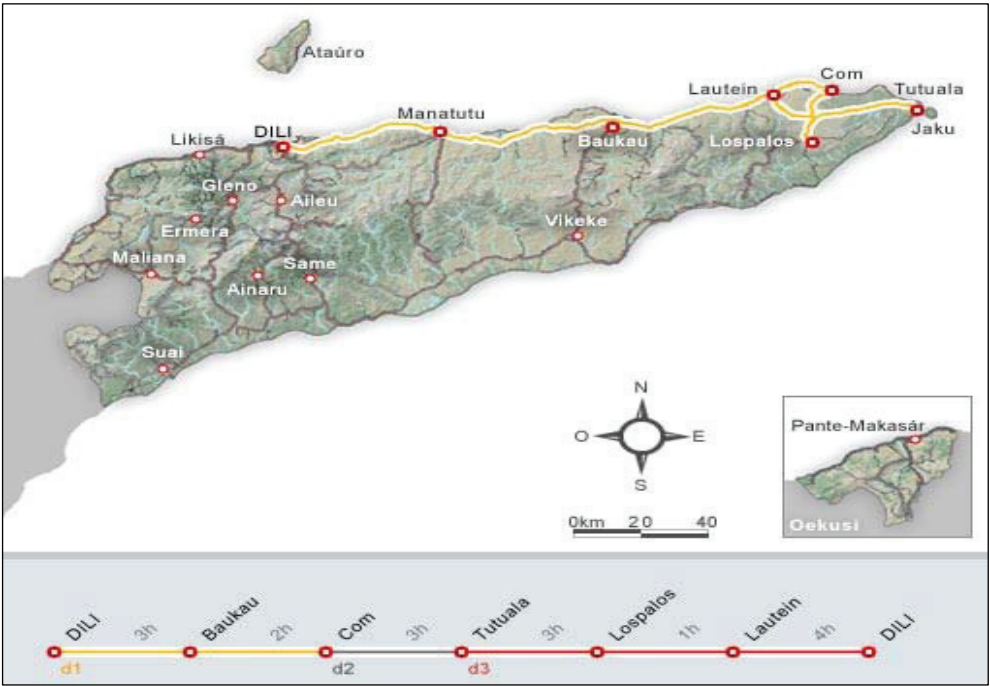
- (b) *“Economic gain through the creation of full or part-time employment or the development of SME opportunities through sales to tourism businesses or to tourists;*
- (c) *Other livelihood benefits such as access to potable water, roads which bring benefits to poor producers through, for example, improved access to markets, improved health or education, etc.; and*
- (d) *Opportunities and capacity for engagement in decision-making in order that the poor are able to improve their livelihoods by securing better access to tourists and tourism enterprises.”*

To address the key issues of poverty reduction, pro-poor tourism in Timor Leste also requires the development of an educated and empowered local leadership, especially around planning, decision making, analyzing, organizing, mobilizing and structuring community development projects. This

includes enabling Timor-Leste’s ability to comply with the Millennium Development Goals (MDGs), including progressing MDG 1 to eradicate extreme poverty and hunger, MDG 3 to promote gender equality and empower women, MDG 4 to reduce child mortality and MDG 5 to improve maternal health (RDTL 2005). Specifically, this includes supporting the government of Timor-Leste’s priorities for 2009 in the areas of rural development, human resources development and effective and clean government through poverty reduction, income generation activities and training for youth and women and the strengthening of local infrastructure and governance structures for sustainable development.

### 1.5 Project Aims & Objectives

The primary aim of this project was to investigate coastal and marine ecotourism (and pro-poor tourism) opportunities, management issues and priorities along Timor-Leste’s north coast (ie. Dili to Jaku Island) (see Figure 2). Following consultation with the government stakeholders, it was agreed that the focus area of the original project should be extended to include the coastal and marine areas of the proposed Marine Park (adjacent to the Nino Konis Santana National Park).



**Figure 2:** The coast road of northern Timor Leste, the proposed area of study.

Specifically, the key objectives of the project were: (1) to undertaken a preliminary assessment of coastal and marine, natural and cultural heritage values along the north coast of Timor Leste; (2) to



identify potential coastal-marine ecotourism sites, themes and opportunities; and (3) in consultation with key ecotourism stakeholders (government, industry, non-government), identify identification of key issues, priorities, needs and directions for the development of a sustainable coastal-marine ecotourism in Timor Leste. The project also recognised the need to integrate the current project with other relevant and complementary coastal-marine projects/activities being undertaken in the region, particularly coastal-marine habitat mapping and surveys (Project 1); marine megafauna aerial surveys (Project 3); and assessment and planning of Nino Konis Santana Marine Park (Project 4).

## 1.6 Physical Coastal Setting

The maritime estate of Timor-Leste, encompasses over 700 km of coastline (and the islands of Atauro and Jaco), within a region of globally-significant tropical marine biodiversity.

Topographically, the north coast is rocky and steep along most of its shoreline. The continental shelf is narrow, with coastal plains virtually non-existent or very narrow, except for around areas such as Manatuto and Dili, with numerous white sandy beaches with interspersed rocky outcrops are scattered along the coast. The north coast is characterised by karst geology and uplifted ancient coral reefs (see Audley-Charles, 2004; Hamson, 2004; Keep, *et al.*, 2009). The dominant vegetation type along most of the coast is arid woodland (RDTL & CDU 2006).

Along the northern coastline narrow fringing reefs and coral reefs can be found, as well as seagrass meadows. The sheltered waters on the north coast, adjacent to the Banda Sea (or *Tasi Feto*) are calmer, deeper and clearer than on the south coast. In contrast, the exposed waters of the south coast, adjacent to the Timor Sea (or *Tasi Mane*) are rougher, shallower and more turbid – resulting in long stretches of sandy beach with heavy waves and surf (Sandlund *et al.* 2001). As opposed to the low profile, extensive coastal margin and plains of the southern coast, the northern nearshore littoral zone is steep and very narrow - with the sea floor on the north coast dropping off sharply into a 3 km deep marine trench at approximately 20 km from shore (RDTL & CDU 2006; Keep *et al.* 2009).

The ocean current systems and nearshore, deepwater trenches and habitats that surround Timor Leste are increasingly being recognised as a global hotspot and migratory pathway for many species of marine megafauna including cetaceans, sharks and other fishes (Kahn 2005). Megafauna assemblages are highly diverse, with over a third of all known whale and dolphin species recorded in the region (Dethmers *et al.* 2009). Additionally, other types of marine megafauna such as whale sharks (*Rhincodon typus*) and manta rays (*Manta birostris*) are also known to inhabit the region.

## **1.7 Socio-Cultural Coastal Setting**

The coastal zone focus for the current study extends in a band eastward from Dili to the eastern end of Lautem district in Tutuala. While the potential for coastal-marine ecotourism is also likely to be significant in other littoral areas of Timor Leste, it has not been investigated as part of the present study. As such, the project area includes the coastal margins of four districts, Dili, Manatuto, Baucau and Lautem. The coastal corridor presents a diverse mix of rural settlements and agricultural activity. Many of the villages line the main highway that winds along the coastal fringe. Larger townships and administrative centres are also linked by this road. They include towns such as Manatuto, Lalacia, Vemasse, Bucoli, Baucau, Laga and Laivai. These towns are also associated with irrigated rice production and extensive livestock grazing of goats and buffaloes in favourable areas. Many of the communities along the highway, already take advantage of passing traffic to sell local produce from roadside stands (textiles in Com, salt in Laga, fish and food in Laivai and Vemasse, basketry in Metinaro, fruit in Baucau). Bus services that ply the roads between Dili and the hinterland provide transport services between towns in the region.

Many coastal communities supplement agricultural livelihoods with artisanal fishing from dug-out canoes and opportunistic reef gleaning at low tide on shallow rock platforms. Fishing is an important component of the domestic economy of many small coastal settlements with most produce being consumed or sold locally.

## **2 METHODS**

The project comprised 3 major activities a (i) natural-cultural coastal heritage survey and assessment of the north coast; (ii) a 2-day coastal-marine ecotourism stakeholder's workshop (April 2009) to present the survey results and identify management issues, challenges and directions for coastal-marine ecotourism in Timor Leste; and (iii) a case study on dive-based, coral reef tourism (Masters study by Yara Tibirica, James Cook University of North Queensland).

### **2.1 Coastal Heritage Field Survey**

A heritage field survey was undertaken of the north coast and hinterlands of Timor Leste (25-30 September 2008) by NRETAS (K Edyvane) and ANU (A McWilliam). The primary aim of the coastal-marine heritage survey was a preliminary assessment and demonstration of the diversity (and scope) of prospective coastal ecotourism (natural, cultural) opportunities along north coast of Timor Leste (see Plate 1). Key coastal-marine ecotourism sites, natural and cultural values and

infrastructure along the north coast were identified, including a preliminary assessment of ecotourism potential (ie. themes, focal points) and strategic management issues and priorities. Cultural values included historical, socio-cultural and indigenous values. The survey recognised the existing PROTUR broadscale tourism assessment and also, relevant information from existing coastal surveys.

The field survey encompassed a coastal corridor from Dili to Tutuala (see Figure 2), and was undertaken in close proximity to established roads, focussing on publicly and easily accessible coastal sites. Identified 'sites' were highly variable, from small well-defined infrastructure, to landscapes. All sites were mapped using GPS, photographed and where possible, local interviews conducted.

Natural values recorded on the field survey included aesthetic values (viewsheds, scenic drives, mountain vistas, coastal vistas) and geological values (geological features, landscapes), while cultural values included a wide attributes, including:

- sites of religious significance and ceremonies (eg. churches, shrines, grottos, graveyards)
- sites of traditional or indigenous significance (eg. ancestral alter posts, *mani me*, shrines, sacred sites or *lulics*, cave paintings, traditional graves)
- sites of customary harvest and indigenous festivals (eg. natural/man-made fish traps, customary harvest of *Meci* or sea worms, fish)
- sites of architectural significance (traditional houses, Portugese forts, Portugese colonial offices, manors, houses)
- and sites of political significance and 'resistance history' (eg. Indonesian military posts, graffiti, Fretilin outposts or safe houses, sites of massacres).

Following the coastal heritage field survey, spatial maps were produced in ArcGIS 9 (ESRI) of key natural and cultural values and sites along the coast. This included collation of additional, existing spatial data on natural values from other relevant, complementary coastal-marine projects, ie. coastal-marine habitats (Project 1) and marine wildlife surveys (Project 3). A complete list of the coastal heritage themes/categories used in the field survey and heritage assessment of the north coast of Timor Leste is presented in Table 1.



**Plate 1:** Cultural values and opportunities for coastal ecotourism along the north coast of Timor Leste.

Categories of Natural Values	Categories of Cultural Values
Aesthetic Values <ul style="list-style-type: none"> <li>• View-sheds</li> <li>• Scenic drives</li> </ul> Geological Features Coastal-marine Habitats <ul style="list-style-type: none"> <li>• Coral reefs</li> <li>• Mangroves, Estuaries</li> </ul> Marine Wildlife <ul style="list-style-type: none"> <li>• Turtles</li> <li>• Dolphins, Dugongs, Whales</li> <li>• Sharks, Rays</li> <li>• Crocodiles</li> </ul>	Indigenous <ul style="list-style-type: none"> <li>• Traditional – Houses, Villages, Communities</li> <li>• Sacred Sites</li> <li>• Rituals, Customary Events</li> <li>• Ancestral Myths</li> </ul> Historical <ul style="list-style-type: none"> <li>• Portugese</li> <li>• Catholicism</li> <li>• World War II</li> <li>• Indonesian</li> </ul> Significant Persons, Events <ul style="list-style-type: none"> <li>• Resistance leaders</li> <li>• Religious leaders</li> </ul>

**Table 1:** Key themes/categories of natural and cultural values identified for the coastal-heritage field survey and heritage assessment of the north coast of Timor Leste (Dili – Tutuala).

## 2.2 Coastal-Marine Ecotourism Stakeholder Workshop

A coastal-marine ecotourism stakeholder workshop was held in Dili, on 29 April 2009 to identify coastal-marine ecotourism opportunities in Timor Leste (see Plate 2, Appendix 1). This included the following key workshop goals:

1. To identify the key coastal-marine natural and cultural heritage values of Timor Leste.
2. To identify potential coastal-marine ecotourism sites, themes and opportunities for Timor Leste.
3. To identify key issues, priorities, needs and directions for the development of a sustainable coastal-marine ecotourism in Timor Leste.

The workshop was attended by a total of 35 participants including, staff from relevant Government of Timor Leste agencies (tourism, culture, environment, fisheries), tourism industry stakeholders and also, non-government agencies (international development agencies, NGOs) (see Appendix 1).



**Plate 2:** Scenes from the Timor Leste coastal-marine ecotourism stakeholder workshop, held in Dili, 29<sup>th</sup> April 2009.

## 2.3 Coral Reef Dive Tourism – Case Study

Opportunities for coral reef dive tourism along the north coast of Timor Leste were explored through a focussed case study (see Appendix 2). This was undertaken through a Masters of Tourism (Ecotourism) in the School of Business at James Cook University of North Queensland:

- **Thesis Title** – *The potential for sustainably managed SCUBA diving tourism to assist in both community development and coral reef conservation in developing countries - with a focus on a case study from Timor Leste (East Timor)*'
- **Masters of Tourism (Ecotourism) Student** - Yara Tibirica.
- **Project Supervisor** – Dr Alistair Birtles (School of Business, James Cook University of North Queensland).

A copy of the thesis abstract is provided in Appendix 2. A copy of the thesis (submitted in March 2007) was forwarded to the National Directorate of Tourism. Additional copies can be obtained from the university library at James Cook University.

## 3 RESULTS

A total of 145 heritage 'sites' were recorded and documented (in preliminary detail) on the coastal route and corridor from Dili to Tutuala. Of these sites, approximately 52 (35.8%) were sites associated with Catholicism (churches, cemetaries, shrines, etc.) (see Table 2).

Key Coastal Ecotourism Themes/Categories	Sites Recorded (% Total)
• Natural & Coastal Landscape Values	36 (24.8)
• Indigenous Sites	28 (19.3)
• Churches, cemetaries & other catholic sites	52 (35.8))
• Historical Sites – Colonial, WWII & 'Resistance' History	28 (19.3)
Total Number of Heritage Sites	145

**Table 2:** Summary of coastal-marine cultural and natural heritage sites recorded in the Dili –Tutuala region.

This inventory however, excluded sites within and around the major townships of Dili, Baucau and Lospalos – including key cultural locations and recognised focal points (ie. Baucau markets, Com, Tutuala, Ili Kerikeri), key dive spots (Atauro, Secret Garden, K41, Jaku Island, Dili Rock,) and also, several indigenous archaeological complexes and sites in the Com-Tutuala region, particularly the relatively well-documented ancient rock art, occupation and cave sites in the Ilequereque region (O'Connor *et al.* 2002, O'Connor 2003, O'Connor & Veth 2005, Veth *et al.* 2005, Pannell & O'Connor 2005, O'Connor & Oliveira 2007). Appendix 3 contains regional maps of natural and cultural heritage sites mapped on the coastal survey. As such, these maps need to be up-dated to include known coastal archaeological sites and heritage within existing tourism focal points (ie. Baucau, Com, Lospalos).

While significant further investment, documentation and assessment is required to assess the full coastal heritage values of the north coast of Timor Leste (Dili – Tutuala) region - below is a preliminary assessment of the key heritage values (for ecotourism potential), based on existing knowledge, literature and the results of the coastal heritage field survey. This overview of historical and cultural heritage within the northern coastal zone of Timor Leste highlights the range and diversity of prospective natural and cultural tourism opportunities. These provide a highly complementary set of ecotourism opportunities that could be progressively developed to offer natural, cultural and historical tourism packages around guided and or self-guided activities.

### **3.1 Coastal-Marine Natural Heritage Values**

#### **3.1.1 Aesthetic**

The coastal landscapes of the north coast of Timor Leste are highly diverse, dramatic, and with high aesthetic values (see Plate 3). This is primarily due to the mountainous nature of the north coast, the steep coastal gradients and the presence of numerous, isolated white sandy beaches, interspersed with rocky headlands. Topographically, the north coast is rocky and steep along most of its shoreline. Over 40% of the country has extremely steep slopes of 40%, while the Ramelau mountain range (which divides the country into north and south) reaches 2,963 m ASL (above sea level) (UNDP & RDTL 2007). Along this dramatic northern coastline (and coastal hinterland), the following key aesthetic values were identified:

- **Fractal Mountains Coastal Drive** - the Fractal Mountains coastal drive is one of the most spectacular coastal drives in Timor Leste. This is primarily due to the very steep gradients (and



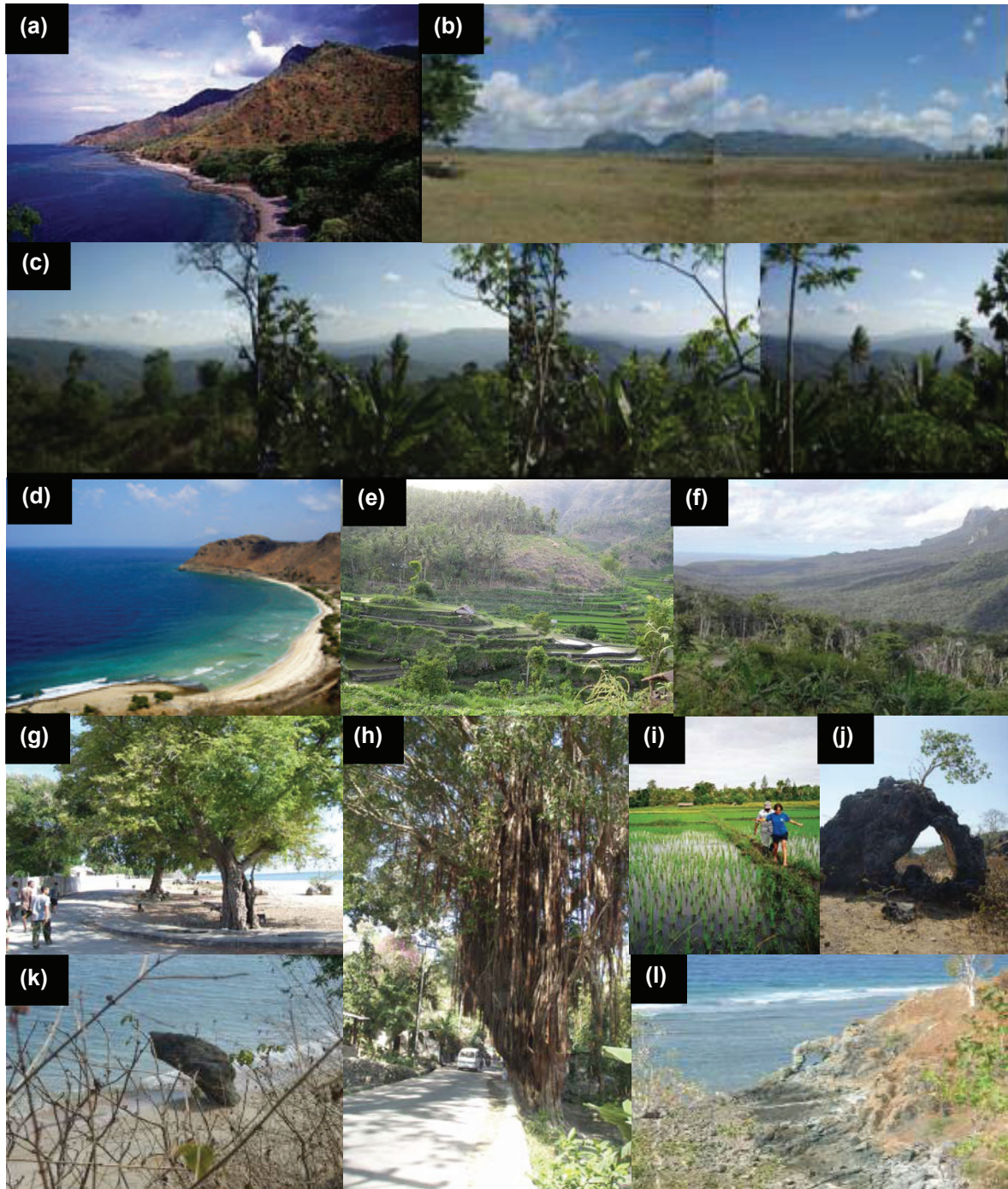
narrow, sinuous road), together with the spectacular coastal views of mountains, fringing coral reefs and unspoilt, sandy beaches (see Plate 3).

- **Nino Konis Santana National Park** – the coastline of the Nino Konis Santana National Park and Marine Park contains natural viewsapes or vistas, relatively undisturbed by recent human settlements or developments (ie. roads, buildings). The coastal landscapes also include dramatic ‘wilderness’ coastlines, mountains-sea viewsapes (ie. including the rugged limestone Paitxau Range), densely forested landscapes and extensive karst landforms (sinkholes, freshwater springs, caves). The wide range of wilderness views within the National Park also has the opportunity to attract professional and amateur wilderness photographers.
- **Jaco Island** – Jaco Island, at the easternmost tip of Timor Leste is a small, flat, vegetated islet (in the Nino Konis Santana National Park) surrounded by coral reefs and on its north side, by a spectacular white beach. Photographs of the island (and beach) are highly popular with tourists and are usually taken from the elevated headland of Tutuala. As an iconic beach (in a National Park) – Jaco Island has significant opportunity to promote both beach and wilderness tourism (similar to the Wineglass Bay, in Freycinet National Park in Tasmania).
- **‘Mountains-to-Sea’ Drives** – the highly mountainous terrain of the north coast also provides opportunities for tourism drives from the mountains to the coast, with scenic (and photographic) opportunities for appreciating mountain and coastal views, rural landscapes and villages. For instance, the drive, from the township of Baucau to the coast, provides opportunities for views of rice terraces, villages and spectacular coastal views (see Plate 3).

Professional nature photography is critical in promoting and marketing aesthetic values – particularly coastal landscapes and mountains. In particular, popular photographic publications showcasing Timor Leste’s coastal vistas and landscapes (and also, lifestyles, culture, and people) - for instance, Timor Leste’s first photographic ‘coffee table’ book, ie. *Timor Leste – Land of Discovery* (Groshong & McMillan 2006) - are an integral component of international ecotourism marketing, and should be further considered and supported in tourism development strategies.

### ***3.1.2 Geological***

The north coast of Timor Leste (particularly in the east) is characterised by karst geology and uplifted ancient coral reefs (see Audley-Charles 2004; Hamson 2004; Keep, *et al.* 2009). This karst landscape presents considerable opportunities for cave tourism. Significantly, within the Nino Konis Santana National Park (in the Com-Tutuala-Lore region), major sites of indigenous art and occupation (O’Connor 2003, Pannell & O’Connor 2005, O’Connor & Oliveira 2007), and World



**Plate 3:** Examples of coastal aesthetic values, heritage trees and sites of geological interest in the Dili – Tutula region: (a) coastal mountains (Fractal Mountains); (b) view of the Matebian Mountains; (c) mountain views in Nino Konis Santana National Park; (d) beach views (Dollar Beach); (e) rice terrace; (f) Nino Konis Santana National Park cliffs; (g) heritage trees at Com; (h) heritage trees in Baucau; (i) rice paddies; (j) – (l) sites of geological interest.

Heritage karst and cultural landscapes provide an outstanding opportunity for both cave tourism and also, indigenous art and pre-history - similar to the caves, rock art and indigenous occupation sites of northern Australia (ie. Kakadu National Park). The extensive karst systems, include caves, freshwater springs and sinkholes, including the permanent flow and dramatic sinkhole disappearance of the Irasequiro River.

In addition to the extensive karst landscapes, several isolated geological limestone features were identified in the coastal heritage survey (see Plate 3). All these important geological values require mapping and further documentation and assessment (including indigenous or customary significance).

### **3.1.3 Coastal-Marine Habitats**

The coastal-marine habitats on the north coast of Timor Leste are limited – with most of the coastal estate being highly linear and narrow in extent (ie. approximately 3km in width, with much of mapping confined to less than 1km in width) (Boggs *et al.* 2009). As such, coastal physiography (particularly the steep coastal gradient and the absence of significant coastal plains) has resulted in a coastline characterised by steep coastal cliffs and rocky headlands, interspersed with pocket beaches and narrow fringing reefs – with limited development of estuaries, mangrove forests (750ha), seagrass meadows (2,200ha) and coral reefs (2,000ha). With increasing pressure on coastal-marine habitats and their resources (for fuel, timber and food) in Timor Leste (Sandland *et al.* 2001) and their limited extent - these habitats are indeed highly vulnerability to further loss and over-exploitation. This underscores the need for precautionary, adaptive approaches to coastal development and also, emphasises the need for urgent progress on implementing integrated coastal planning and management in Timor Leste, including coastal protection, regulations and rehabilitation measures.

The very limited extent of coral reef, seagrass and mangrove habitats on the north coast of Timor Leste, impose strong limits on available marine resources and levels of harvest (particularly reef fisheries, mangroves) and in the light of increasing human resource use, underscore the urgent need for precautionary and effective conservation management.

#### **(a) Coral reefs**

Coral reefs are limited in extent in Timor Leste. Fringing reefs (reefs which closely follow the shoreline), form an almost continuous (and accessible) strip along the coast of Timor-Leste (Monk *et*

*al.* 1997). The topography of fringing reefs along the north coast of Timor-Leste ranges from gentle slopes to sheer walls. While the status of Timor-Leste's coral reefs were predicted to be 'promising' by Hodgson (1999) due to limited commercial exploitation, recent reef fish surveys by Deutsch (2003), Wong and Chou (2004) and Dutra and Taboada (2006), suggest otherwise. While shallow, nearshore coral reef habitat in Timor Leste is limited (~2000ha), with little lagoonal reef flat development (~458ha), there is little evidence of habitat damage (ie. dynamite blasting, coral bleaching) (Boggs *et al.* 2009). Coral-dominated communities tend to dominate the fore reef and escarpment, particularly where the reef flat is narrow, with the most extensive nearshore coral habitats occurring in the Dili to Metinaro-Manututu region (ie. 40km coastline east of Dili) and in the Com-Jaco Island region (Boggs *et al.* 2009).

The nearshore coral reefs immediately east of Dili (Dili – Manututu, K57) are highly accessible and popular for shore-based diving due to the accessibility to steep, reef drop-offs, and have significant potential for ongoing dive tourism development (particularly day tourism, due to their proximity to Dili) (see Plate 4). As such, several well-known diving sites are currently regularly used by local diving companies. Further afield, Atauro Island and the Com-Jaco Island region, have significant potential for regional, coral-based dive tourism, particularly longer-term, dive safaris – particularly if combined with other coastal tourism activities (eg. fishing, recreation, cultural activities).

Dive tourism (snorkelling, SCUBA) is relatively small-scale in Timor-Leste. There are only 3 established diving companies (Dive Timor Lorosae, The Free Flow, Dili Dive) running scuba safaris to sites in Dili, Atauro Island, Tutuala and Jaku Island. There is only one established tourism boat charter operation (Island Charters, which operates from Dili to Atauro Island). In developing coral reef dive tourism in Timor Leste, Ximenes and Carter (1999) identified the following needs, issues and priorities: identification and characterization of dive sites; evaluation of coral reefs and identification of priority areas; creation and adjustment of a protected area system; implementation of poverty alleviation strategies; identification of diving markets and creation of new markets (eg. in association with research volunteer programs, such as 'Reef Check'); professional training; and the creation of a monitoring system (Tibirica 2007).

## **(b) Mangroves, Estuaries**

The north coast of Timor-Leste supports approximately 750ha of mangroves, with more than half of these occurring in an almost unbroken stretch approximately 12 km long in the Metinaro region (see Figure 16). Mangroves generally predominate on the north coast in inlets with calmer, protected

waters, with the largest contiguous block of mangroves found in the Metinaro region (Boggs *et al.* 2009). In contrast, on the wave exposed south coast, mangroves are generally confined to the mouths of the streams, and marshy or swampy regions. Seven species of mangrove were identified and the field survey indicated a clearly defined pattern of zonation, typical in mangroves. Recent detailed coastal habitat mapping (based on aerial photography) identified approximately 20 communities based on structural and floristics characteristics (Boggs *et al.* 2009). The mangrove communities occupying the greatest area includes *Rhizophora* dominated closed forest (+/- *Sonneratia*), *Sonneratia alba* closed/open forest (+/- *Rhizophora*), *Sonneratia alba* closed forest and *Ceriops* dominated low closed forest (+/- *Avicennia/Lumnitzera*).

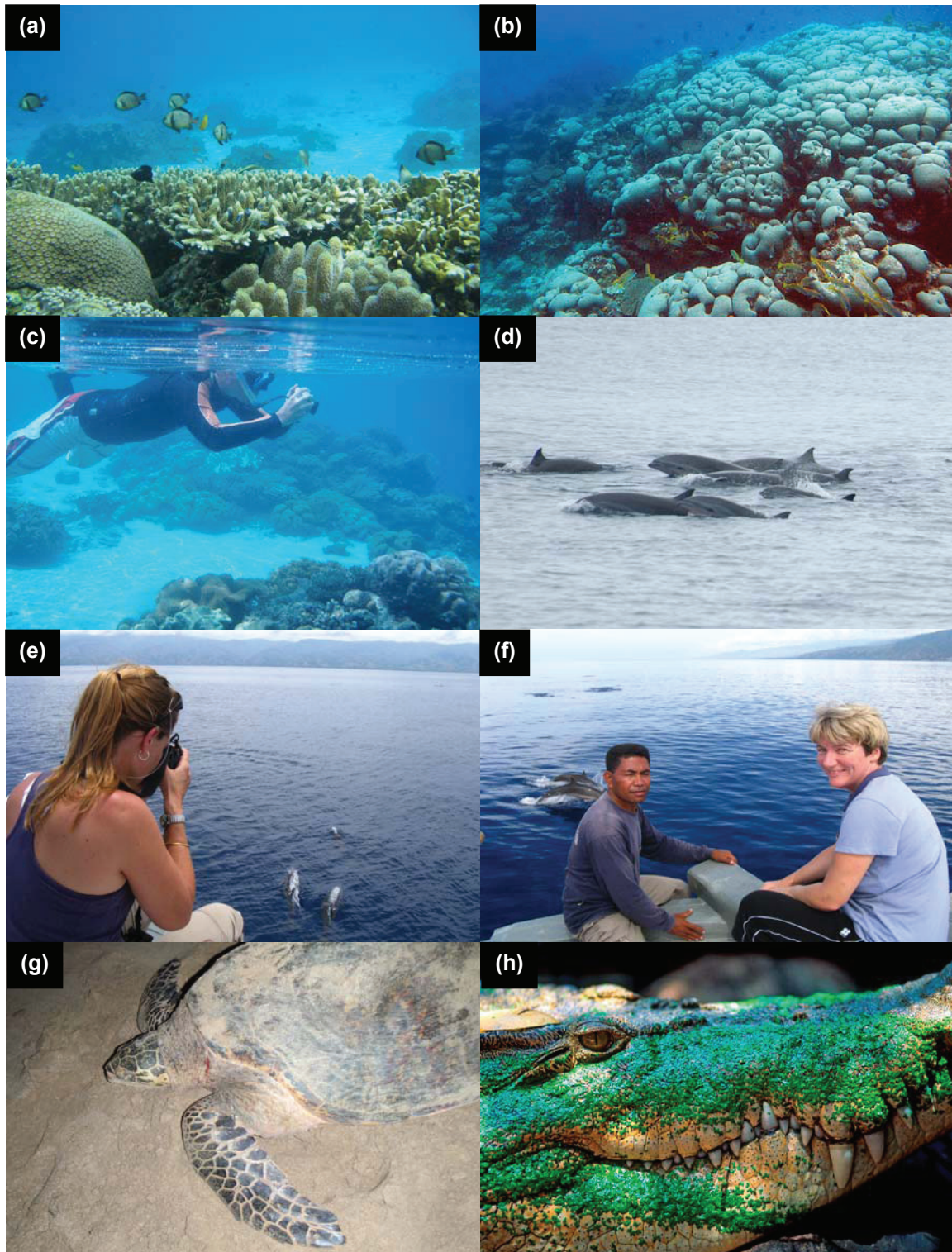
The potential for mangrove tourism in Timor Leste is limited. This is primarily because mangroves occupy only a small area of Timor Leste (1,802ha) when compared with neighbouring regions such as Indonesia (3,062,300ha) and Australia (1,451,411ha) (Boggs *et al.* 2009). The limited extent is due mostly to the coastal configuration and physiography of Timor Leste, which unlike other islands of the Indonesian archipelago and the north coast of Australia, does not include the salient coastal contours, physiographic features and coastal processes, for significant mangrove development (ie. extensive low-lying coastal plains, sheltered waters, sedimentary processes). Further, rivers in Timor Leste flow intermittently and hence, large estuarine systems are generally absent.

While the limited mangrove extent in Timor is not sufficient for ecological tourism (ie. boat charters, cruises), there is potential to incorporate mangrove-estuarine tourism, as part of a broader, eco-cultural tourism experience (ie. the eco-cultural site of *We-ar-un*). At the national level, a community-based education and outreach program (focussing on the ecological benefits, and threats facing mangroves), and a compliance program, is urgently required to combat illegal logging and harvesting.

### **3.1.4 Marine Wildlife**

#### **(a) Turtles**

There are 5 recorded species of marine turtles in Timor Leste: *Eretmochelys imbricata* (Hawksbill turtle), *Dermochelys coriacea* (Leatherback turtle), *Chelonia mydas* (Green turtle), *Caretta caretta* (Loggerhead turtle), *Lepidochelys olivacea* (Olive Ridley turtle) (Sandland *et al.* 2001). The Hawksbill and Leatherback turtle are 'critically endangered', while the Green, Loggerhead and Olive Ridley turtle are 'endangered' (IUCN Red List).



**Plate 4:** Examples of natural coastal and marine biodiversity values in the Com-Tutuala region: (a)-(c) inshore shallow coral reefs; (d) pods of dolphins; (e)-(f) dolphin-watching; (g) turtle nesting; (h) the sacred saltwater crocodile (*Crocodylus porosus*) – the ‘greatgrandfather’ or ancestor of Timor Leste.

In a recent survey of marine megafauna in Timor Leste (Dethmers *et al.* 2009), turtle nesting sites have been recorded along the north coast of Timor Leste (see Plate 4). Aerial surveys indicate increased abundance of large turtles in nearshore waters during November, with the greatest density occurring around the far north-eastern tip of Timor Leste, in the Nino Konis Santana Marine Park region (offshore from the Lautem district and southeast of Jaco Island) (Dethmers *et al.* 2009). While large numbers of turtles were observed foraging in the shallow coastal waters, surprisingly few tracks were sighted on the adjacent beaches during the two additional beach surveys, which were specifically aimed at identifying key nesting areas and periods for turtles and crocodiles (Dethmers *et al.* 2009).

Illegal turtles harvesting remains a major issue in Timor Leste, and also, for the ongoing management of the Nino Konis Santana National Park and Marine Park. Community-based, turtle tourism in Timor Leste, particularly the establishment of turtle hatcheries, has great potential to create alternative livelihoods and shift local villages from illegally harvesting turtles to generating income from turtle ecotourism. The coastal villages of Tutuala, Com and Lore (within the Nino Konis Santana Marine Park) and also, Atauro Island, have significant potential to develop community-based, turtle tourism.

### **(b) Dolphins, Dugongs, Whales**

The near-shore coastal waters of Timor Leste are characterized by an exceptional diversity and abundance of cetaceans (Dethmers *et al.* 2009). This resource provides a significant opportunity for development of ecotourism (e.g. whale and dolphin watching), particularly along the north coast of Timor Leste. Recent aerial surveys of marine megafauna conducted in the nearshore waters of Timor Leste have identified a total of 13 different cetacean species, including the blue whale, sperm whale, Bryde's or Sei whale, short-finned pilot whale (*Globicephala macrorhynchus*), false killer whale (*Pseudorca crassidens*), pygmy killer whale (*Feresa attenuata*), melon-headed whale (*Peponocephala electra*), Curvier's beaked whale (*Ziphius cavirostris*), Risso's dolphin (*Grampus griseus*), Fraser's dolphin (*Lagenodelphis hosei*), spotted dolphin (*Stenella attenuata*), rough-toothed dolphin (*Steno bredanensis*), and the spinner dolphin (*Stenella longirostris*) (Dethmers *et al.* 2009) (see Table 3).

Sightings of marine megafauna, ranging from single individuals to large pods of up to several hundred animals, have been recorded along both, the north and south coast of Timor Leste (Dethmers *et al.* 2009) (see Plate 4). While megafauna are recorded throughout the year, recent monthly aerial surveys recorded a peak in the diversity and abundance of cetaceans during November, when very large pods (several hundreds of animals) were recorded, with highest diversity occurring in north-western coastal waters, west of Baucau (Dethmers *et al.* 2009). The majority of

the large whales (primarily Blue Whales) and whale shark sightings were made in the north-west, near Dili, while most of the large pods of dolphins and small marine mammals were observed along the north coast. In contrast, recorded dugong (*Dugong dugong*) sightings in Timor Leste were relatively rare, with observations only in June (n = 1) and in November (n = 5) (Dethmers *et al.* 2009).

Common name	Scientific name	Indonesian name	IUCN status
Blue Whale	<i>Balaenoptera musculus</i>	Paus biru	EN
Sperm Whale	<i>Physeter macrocephalus</i>	Paus sperma	VU
Sei Whale	<i>Balaenoptera borealis</i>	Paus sei	EN
or Bryde's Whale	<i>Balaenoptera brydei</i>	Paus Bryde	DD
Short-finned Pilot Whale	<i>Globicephala macrorhynchus</i>	Paus sirip pendek	DD
False Killer Whale	<i>Pseudorca crassidens</i>	Paus pembunuh palsu	DD
Pygmy Killer Whale	<i>Feresa attenuata</i>	Paus pembunuh kerdil	DD
Melon-headed Whale	<i>Peponocephala electra</i>	Paus kepala semangka	LC
Cuvier's Beaked Whale	<i>Ziphius cavirostris</i>	Paus paruh Cuvier	LC
Rough-toothed Dolphin	<i>Steno bredanensis</i>	Lumba-lumba gigi kasar	LC
Rissos's Dolphin	<i>Grampus griseus</i>	Lumba-lumba abu-abu	LC
Spotted Dolphin	<i>Stenella attenuata</i>	Lumba-lumba totol	LC
Spinner Dolphin	<i>Stenella longirostris</i>	Lumba-lumba paruh panjang	DD
Fraser's Dolphin	<i>Lagenodelphis hosei</i>	Lumba-lumba Fraser	LC

**Table 3:** Cetacean species sighted during the boat survey and their IUCN status (EN = Endangered, VU = Vulnerable, DD = Data deficient, LC = Least Concern) (from Dethmers *et al.* 2009).

Anecdotal reports indicate that dolphins are common in the waters all around Timor-Leste, particularly in Manatutu district, Carimbala, Likisá district and Tutuala in Lospalos, while large groups of dolphins and migrating whales have often been seen in the deep waters between Atauro Island and Dili. Resident grazing dugongs have also been recorded at Dollar Beach.

Cetacean tourism is a global industry with whale watching trips now available in more than 87 countries around the world (Hoyt 2001). While whale watching and dolphin watching activities are currently not well-established, the abundance and diversity of cetaceans in nearshore waters suggest there is considerable potential to develop community-based cetacean tourism in Timor Leste. While cetaceans occur throughout Timor Leste's waters, the accessible, deep waters between Atauro and Dili and also, the waters of the north-west (west of Dili), offer significant potential for development of cetacean tourism.



### **(c) Whale Sharks, Sharks, Rays, Sailfish, Tuna**

The abundance of recorded cetacean sightings in Timor Leste contrasts with the limited number of recorded sightings of whale sharks and other large elasmobranchs (Dethmers *et al.* 2009). According to Bajo and other fisherman from Roti and Kera Islands, whale sharks occur regularly in the Timor Passage south of Roti Island and also offshore from Suai (south-western Timor Leste), as well as in the coastal waters near Kupang, West Timor and in the Savu Sea between Timor and Flores Islands (Stacey *et al.* 2008). However, in recent monthly aerial surveys for marine megafauna in the nearshore waters of Timor Leste, a total of three whale sharks (*Rhincodon typus*) were observed over three separate surveys (May, June and November) and all were small (<5 m), non-adult individuals (Dethmers *et al.* 2009). This suggests that this species is unlikely to form the basis of an ecotourism industry in Timor Leste.

Rays have been recorded in Timor Leste nearshore waters, from July – November, with peak abundance occurring in November (Dethmers *et al.* 2009). Several groups of five or more individuals were photographed during this month and identified as manta rays (*Manta birostris*). Anecdotal reports have also recorded resident grazing mantas and eagle rays at Dollar Beach, while whale sharks, orcas and mantas have been reported from the roadside site of Whale Shark Point (also known as Lone Tree) during the months of August-November. Several charter fishing operations also target large, deeper water, pelagic fish species, such as sailfish and tuna. These operations are largely confined to the calmer waters of the north coast, particularly Atauro Island and the Com-Tutuala-Jaco region.

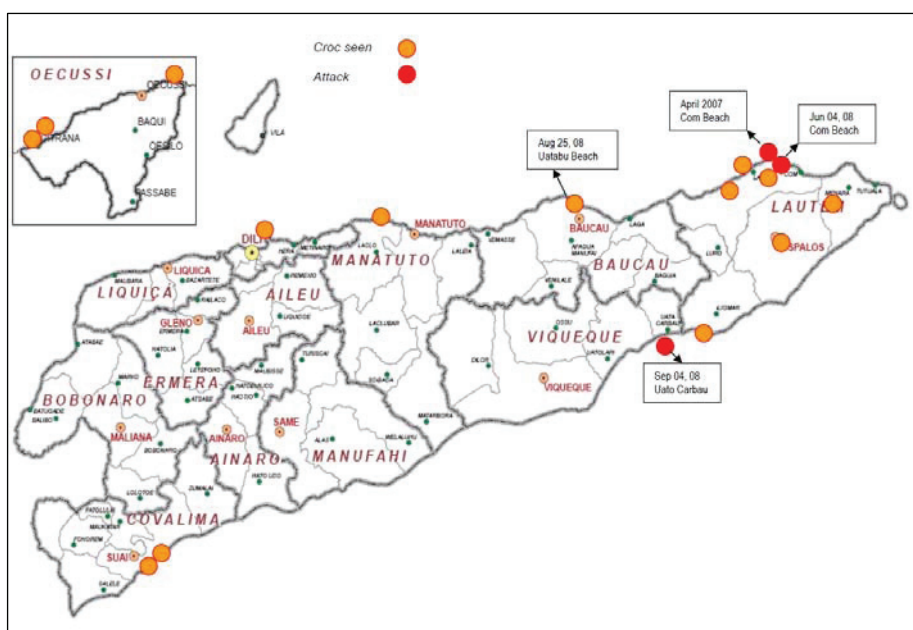
While there may not be scope for whale shark tourism in Timor Leste, there are considerable opportunities for dive tourism focussing on iconic larger fish species (eg. manta rays, eagle rays), small 'iconic' fish and invertebrates species (eg. sea horses, nudibranchs, sea whips, etc.) and also, commercial charter and community-based, targeted, recreational fishing-related tourism (see Lloyd *et al.* 2009). Ideally, these activities should be integrated with the broader scope and development of dive-based tourism and village-based tourism and eco-lodges (ie. Atauro Island, Com, Tutuala).

### **(d) Crocodiles**

The most popular ancestor figure in Timorese culture is the crocodile, which is believed to be the 'greatgrandfather', 'king of the ancestors', 'king of the waters' and 'king of the mountains' (Barrkman 2009) (Plate 4). Specifically, the crocodile is the creation story of Timor. The origin myth of the

island of Timor tells the story of a boy who saved a crocodile from death. In return the crocodile offered to take the boy on its back for an adventure at sea. The crocodile became lost and hungry and wanted to eat the boy, but did not do so as it owed him a debt for saving its life (see Text Box 1). When they reached the place where the sun rises in the east, the crocodile changed itself into the land that is now the island of Timor. The name for Timor-Leste in the Tetum language is *Timor Loro Sae*, meaning ‘Land of the Rising Sun’. The island is thought to be shaped like a crocodile with rugged mountains like crocodile scales.

In Timor Leste, the estuarine saltwater crocodile (*Crocodylus porosus*) inhabits coastal rivers and swamps, as well as the open sea and island shorelines, and is primarily found along the south coast. Recent aerial surveys have recorded animals along the south coast in November (5 tracks, 1 animal) and also, the north coast (in June) (1 track, 2 animals) (Dethmers *et al.* 2009). At least one large crocodile has been sighted in the muddy Malaelada river to the west of Lautem township (Andrew McWilliam, *pers.comm.*).



**Figure 3:** Location of reports of crocodile sightings in Timor Leste (from UNMIT-JMAC 2008). It does not include all locations where crocodiles may exist.

Estuarine crocodile numbers, however, are thought to be increasing in number including in suitable habitats along the north coast (ie. Vermasse, Lautem coast). Crocodile attacks have also been reported in a number of locations in recent years (UNMIT-JMAC 2008) and have prompted the government to post warning signs on some shorefront areas (eg. Com) and also, warnings to international workers (UNMIT-JMAC 2008) (see Figure 3). In recent years (2007-2008), crocodiles have been sighted in the Baucau region (Uatabu Beach, 25 August 2008), Lautem region (Com Beach, Lautem, Parlamento area, between Lautem and Com beach, Ililai, Daudare, Lake Ira

## The Crocodile Mythology

### - the Birth of Timor Leste



One day, a boy came across a baby crocodile struggling to make his way from the lagoon to the sea. As he was very weak, the boy took pity on him and carried him in his arms to the sea.

The crocodile was very grateful and promised to remember the boy's kindness. He told the boy that should he ever want to travel, he should come to the sea and call, and the crocodile would help him.

After a while, the boy remembered the crocodile's promise, and went to the edge of the sea and called out the crocodile three times. The crocodile told the boy to sit on his back and over the years he carried the boy on many journeys.

But, although the crocodile and the boy were friends, the crocodile was still a crocodile, and felt an irresistible urge to eat the boy. However, this bothered him and he decided to ask the other animals for advice. He asked the whale, the tiger, the buffalo and many other animals, who all said, "The boy was kind to you, you can't eat him". Finally, he went to see the wise monkey. After hearing the story, the monkey swore at the crocodile and then vanished.

The crocodile felt ashamed and decided not to eat the boy. Instead he took the boy on his back and together they travelled until the crocodile grew very old. The crocodile felt he would never be able to repay the boy's kindness, and said to the boy, "Soon I'm going to die, and will form a land for you and all your descendents".

The crocodile then became the island of Timor, which still has the shape of the crocodile. The boy had many descendants who inherited his qualities of kindness, friendliness and sense of justice. Today, the people of Timor call the crocodile "grandfather", and whenever they cross a river, always call out, "Crocodile, I'm your grandchild - don't eat me!"



Larolo, Los Palos (Bomeres), Iliomar coastline, Uato-Carbau coastline), Covalima region (Suai Loro, June 2007), Dili region (Cristo Rei), Manatuto (between One-Dollar Beach and Manatuto), Oecussi region (Bausin, eastern border and Citrana, western border) (UNMIT-JMAC 2008). Over this same time period, there have also been 3 attacks and 2 fatalities: one attack and one death at Wesamadara, Uato Carbau sub-district of Viqueque (4 September, 2008), and two attacks and two deaths at Com beach, Lautem District (April 2007, 4 June 2008).

As the key animal totem for Timor, the crocodile has great potential to be a unique cultural icon for ecotourism, similar to the unique, traditional clan house (or *uma lulik*). Crocodile tourism, in Timor Leste, particularly crocodile farming, has great potential to both address critical issues of public safety (through the re-location of dangerous or problem crocodiles), and, also to generate local incomes for villages and communities. Although people express reluctance at the prospect of culling crocodile numbers, relocation programs to a limited number of crocodile farms is likely to be better accepted. As such, there are considerable opportunities to learn and exchange technical expertise and experience with the crocodile farming industry in the Northern Territory and also, the Northern Territory Government Parks and Wildlife Service in crocodile management, survey, monitoring, removal and re-location and also, in crocodile farming.

A comprehensive survey and assessment of crocodile abundance in Timor Leste is an urgent priority, in order to identify potential crocodile problem areas (and public safety issues) and also, to provide essential baseline information for the development of a crocodile management plan. Given the existing and potential for ecotourism development at Com, crocodile management is a major and high priority issue for public safety and coastal ecotourism management.

### **3.2 Historical, Social, Cultural Heritage Values**

While many coastal communities throughout Southeast Asia and the Pacific have a long tradition in sea-faring and strong relationships with the sea, the Timorese have been described as historically being a more landward-oriented people whose interactions with the sea are limited (McWilliam 2002). Nevertheless, coastal communities in Timor Leste have developed their specialized relationships with the coastal and marine environment (McWilliam 2002, 2007, Weaver 2008). In many parts of the country a system of customary law, known as *tara bandu*, regulates the use of natural resources. *Tara bandu* is a form of customary law for community-owned natural resources (including lands and seas), that protects the environment from harmful activities by imposing ritual

prohibition under threat of spiritual sanctions such as non-appearance of fish and food resources, damage to and sinking of boats, drowning or illness of transgressors (McWilliam 2002, Haburas Foundation 2007b).

Even though many of these traditional cultural practices have proven to be highly adaptive and dynamic systems, they have been weakened by a long history of colonization and occupation (McWilliam 2002; Haburas Foundation 2007b). In recent years, the national NGO Haburas Foundation and local NGO's, such as Roman Luan, have been working closely with coastal communities in Timor Leste to revive local knowledge and traditional customs and laws to protect natural resources (Palmer & de Carvalho 2007, Haburas Foundation 2007b, Weaver 2008).

### ***3.2.1 Indigenous Values, Traditions***

#### **(a) Traditional Clan Houses**

The rich diversity of local traditions across Timor Leste represents a vital and enduring cultural heritage with significant potential for cultural tourism development. In the aftermath of the independence struggle, Timorese communities have been gradually rebuilding their lives and livelihoods. One of the important developments in this respect is the reconstruction of traditional Timorese clan houses, known in Tetun, as *Uma lulik*. These structures are both aesthetically distinctive and symbolically significant as repositories of clan heirlooms and traditional knowledge as well as focal sites for clan-based ceremonies and life-cycle events. There are many styles of *uma lulik* across Timor Leste, consistent with the diversity of language communities. *Uma lulik*'s form an iconic and tangible built heritage that continues to provide a focus for social relationships and cultural identity. There are also numerous examples to be found along the northern coastal corridor (see Plate 5).

*Uma lulik*'s provide a tangible and unique, architectural ecotourism icon for Timor Leste. In developing community-based ecotourism, communities need to be encouraged to preserve traditional clan houses (and their surrounds). Surveys are also required to document the distinctive nature and status of existing clan houses, and also, to assess opportunities for community-based ecotourism that combine opportunities for home-stay accommodation and local cultural events.



Dili –

## (b) Traditional Crafts & Cultural Livelihoods

Everyday livelihoods of farmer communities across Timor Leste can also provide another focus for cultural tourism (see Plate 6). In particular, the weaving of baskets, mats and *tais*, has been an important task of the women of Timor for hundreds of years, and provide specific opportunities for community development. Handled sensitively, there are opportunities for visitors to participate vicariously in a range of productive livelihood activities of farmer households. Some examples of these activities could include:

- **Textile production** - Timor Leste society has a long tradition of textile production and the fashioning of tie-dyed woven cloth such as the famous Timor Leste, *tais* which are produced domestically by women using back strap looms (Plate 6). Women in most rural settlements incorporate weaving into their domestic livelihoods, and the textiles are important exchange items used in weddings, funerals and other life cycle events. The *tais* motifs and techniques are handed down from mother to daughter without ever being written down (Barrkman 2009). *Tais* are given as a symbolic gesture of friendship and relationship by placing them around the neck of the recipient, symbolising 'binding people together'. Textiles are also exchanged to maintain relationships between individuals, families, clans and even nations. The various colours, motifs and designs used to decorate *tais* in Timor-Leste indicate various districts and clans (Barrkman 2009).
- **Wood carvings** - The Maquile people of small island of Ataúro, Timor-Leste, have a distinctive tradition of wood carving (Barrkman 2009) (see Plate 6). Originally, male and female figurines and dance masks were made to honour the clan ancestors. Carvings of mermaids and eels reflect the island's fishing culture and its mythical creation from an eel living in the female sea, *Tasi Feto*, north of Timor. These animist themes were later influenced by Portuguese and Catholic attitudes. Over time, cloth was used to cover the genitals of figurines. Christ-like figurines also became popular. Masks are also carved in Ataúro and are sometimes hung from trees to protect gardens from thieves. Timorese warriors traditionally wore masks to hide their identities from their enemies (Barrkman 2009). Wooden masks are still used by men in Timor during ceremonial dances. These and other wood carvings are also sold as souvenirs to tourists or to international aid workers in Dili.
- **Basket weaving** - Old traditions of woven basketry have, in some places like Metinaro, been elaborated and developed for sales to passing traffic (see Plate 6). There is significant opportunity to further expand the designs and patterns of woven containers and mats in selected areas.



**Plate 6:** Examples of traditional indigenous crafts and livelihoods in the Dili -Tutuala region: (a)-(c) traditional *tais* and hand looms; (d) local paintings, traditional and modern (Dili); (e) silverware (Dili market); (f) basket weaving at Metinaro; (g) wood carving by Maquile people of Ataúro island; (i)-(j) wooden figurines and face masks (Dili).



- ***Palm liquor production*** - The complex processes of palm tapping and the production of palm beers and distilled liquors has a long history on Timor with unique associated cultural traditions. Palm liquor (*tuak*) is widely consumed and sold as an important component of domestic economies.

The wide range of traditional craft activities in Timor Leste provides significant opportunities for ecotourism, including the coastal corridor from Dili to Tutuala-Jaco Island (see Plate 6). As such, there is a critical need to integrate current traditional craft and livelihoods development in Timor Leste with broader, community-based ecotourism development and planning.

### **(c) Mythic Landscapes**

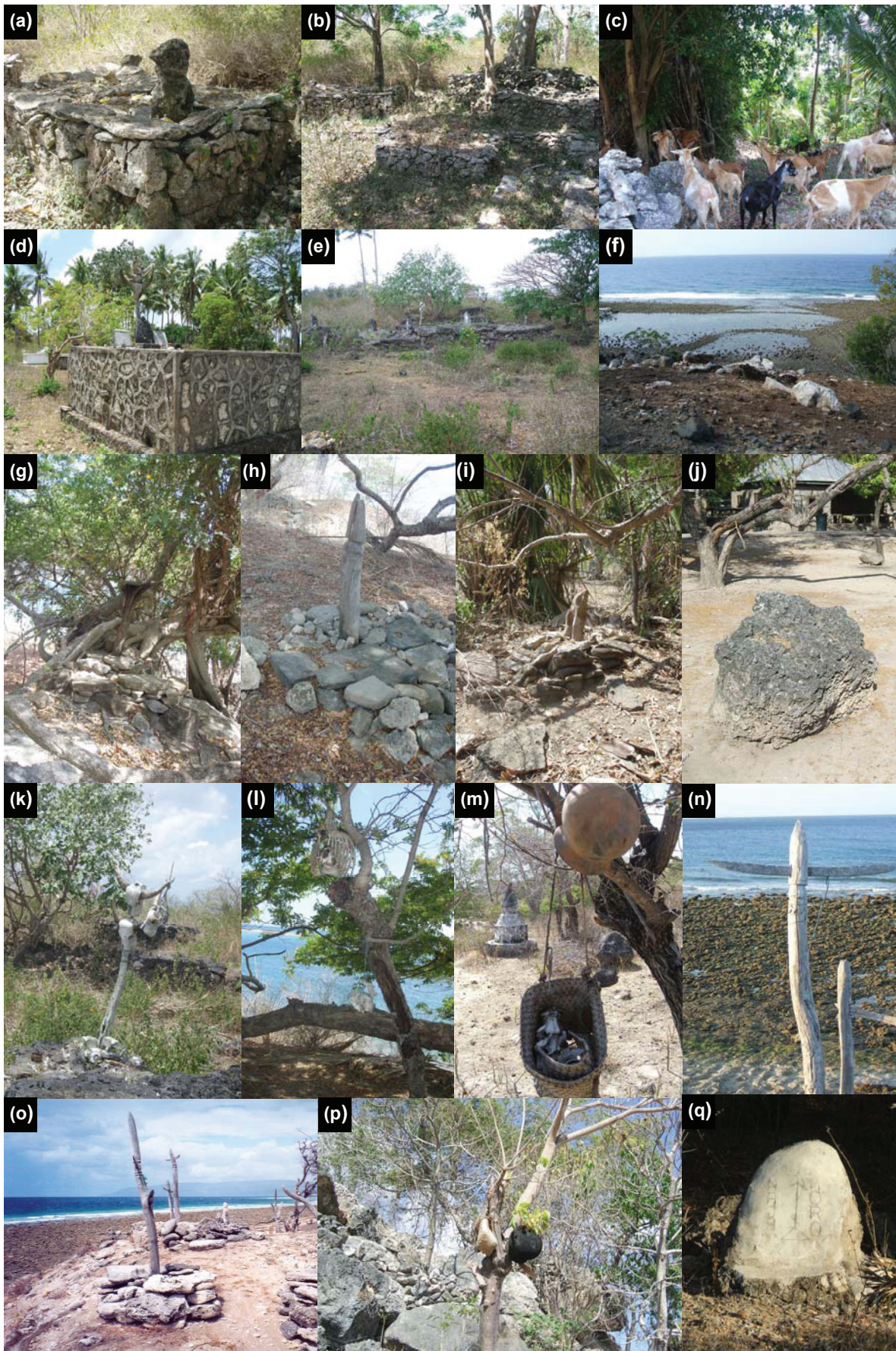
For coastal and rural communities of long standing, histories of settlement and occupation are mapped onto the surrounding landscape and recorded in community narratives and mythic histories of ancestral events and practice. Topographic features across the landscape and the fringing coastal waters and reefs are often accorded cultural significance and meaning among resident clans or house communities.

In Lautem District for example, there is a strong narrative tradition that relates the origins of settled communities to the exploits of sea-faring ancestors who settled the coast of far eastern Timor and left traces of their presence in topographic forms across the landscape (Pannell 2004). Prominent limestone outcrops for example, are said to be the fossilised stone boats (*loiasu mataru*) of ancestors who beached themselves on Timor and sought refuge in fortified settlements on prominent hilltops. The proliferation of local placenames mark sites of ancestral events and the settlement trajectories of the clan over time and space. The memory of their histories is both a record of the past and a basis for many of the customary claims that local communities assert over land and local resources (see McWilliam 2007).

### **(d) Spiritually Significant Sites**

Along the coastal zone are found numerous places and built structures that form part of the narrative landscapes of myth, and which are considered spiritually charged (*lulik*) and for that reason, accorded respect and cautious regard. All local settlements have a range of sites that fall within this category and often represent places of sacrificial invocation and blessing (see Plate 7). Examples of these places include:

- Massive dry stone graves which represent pre-Christian burials.



**Plate 7:** Examples of Indigenous sacred sites and ceremonial sites in the Dili – Tutuala region: (a)-(b), (d)-(e), pre-Christian indigenous dry stone graves and grave complexes; (c) spring *lulik*; (f) stone fish trap; (g)-(i) stone altars and posts; (j) rock *lulik*; (k) ancestral post with buffalo skulls; (l)-(m) *mani me* trees with sacrificial offerings; (n)-(o) ancestral posts and altars; (p) *mani me* tree; (q) clan boundary marker between *Naja* and *Moro* clans.

- Altar posts and other sites of sacrificial veneration.
- Certain springs or water sources may be accorded sacred (*lulik*) status
- Some caves, stones, trees and other topographic features that have mythic or ancestral association. The large fig trees in some settlements, which hold the drying remnants of newborn babies umbilical and afterbirth are cases in point.

Places or objects regarded as *lulik* are treated with caution and respect by local communities because of their potential for causing illness or misfortune to those who transgress the customary proscriptions attached to these sites (Pannell & O'Connor 2004). A range of sites of spiritual significance is found along the Dili – Tutuala coastal corridor (see Plate 7). In particular, communities in the Lautem district (Com-Tutuala-Lore) maintain strong traditional culture (Fataluku), lifestyle and practices, perhaps more vigorously maintained in the area than in other parts of East Timor (MAFF 2006, McWilliam 2007, Palmer & Carvalho 2008). Local lifestyles, including social and economic activities, are imbued with ongoing cultural significance. Distinct locations along the coast are identified as the ancestral homes of the Ratu or noble families of the area, and a number of locations, particularly along the Paitxau Range and the south eastern coast, were formerly occupied by families relocated to current villages *sucos* during Indonesian times (MAFF 2006, McWilliam 2007). Sacred places such as *lulik* forests and Ili Kerekere are of major importance to the ceremonial life of communities, and continued access to (and protection of) these sites is a priority.

#### (e) Ceremonial Activities

One of the striking and seasonal features of coastal Timor Leste is the occurrence of various ceremonial harvesting of the bounty of the land and sea, with traditional rituals and prayers for good harvest and safe return from the sea still practiced by a majority of communities (McWilliam 2002, de Carvalho *et al.* 2007). *Tara bandu* is active in Timor Leste and in some regions such as Bobonaro and Oecusse, estuaries and lagoons seasonally are closed for fishing and only re-opened after a ceremony, while in other parts of the country such as in Doloc Oan (Dili district) mangroves are protected under *tara bandu* (Sandlund *et al.* 2001; McWilliam 2002).

Very often these naturally occurring events are accompanied by ritual sacrifices at designated sites and by authorized traditional authorities, who enjoin their communities to participate in the enthusiastic gathering in of the bounty of nature. There are many examples along the north coast (see Plate 8). The annual public harvesting of the estuary known as *Be Malai* in coastal Bobonaro is a well known case, where fishing and netting is restricted for much of the year under traditional prohibitions.

Another example is the traditional prawn (*boek*) harvest in the Lacleo river mouth at Manatuto. But similar events occur along the coast. Some examples include:

- ***We-ar-un*** - The complex of eco-cultural sites comprising a coastal estuary, vine thicket and permanent spring known as *We-ar-un* (or deepwater) in coastal Vermasse (Plate 8). *We-ar-un* forms a long and narrow estuary little more than 1.5 m deep which is filled on the high tides in January, but for most of the year is cut off from the sea and gradually reduced into shallows thriving with fish, turtles, eels, prawns and occasional crocodiles. The traditional land owner group (known in local Galolien language as *Rea Obon*) are the ritual custodians of the site. Every year on 2 November (all Souls day), the custodians invite the community to attend and participate in the ritual harvesting of the estuary. Sacrificial prayers are made to the *rai nain* – a large snake that inhabits the *lulik* spring that feeds the estuary – and everyone is enjoined to enter the water and scoop out the writhing sea creatures. *We-ar-un* is both an important eco-cultural site and a natural landscape that is yet to receive formal protection under government legislation.

- ***Gassi Isi*** - Another annual event is the salt harvest at the estuary in Laga sub-district known as *Gassi Isi* (Plate 8). The site focuses on a seasonal estuary which becomes cut off from the sea and where white salt deposits form naturally by evaporation over the dry season. When the time for harvesting arrives in October, senior members of the custodial group (*Mua gi guava* – the *Rai nain*, or landlord) who live in the hills above in *Suco Nunira*, descend to make sacrificial offerings and invite local people to gather in the crystal harvest which is later sold in plaited palm leaf cylinders by the side of the road. According to local tradition the salt deposits are said to be a parting gift of two mythic buffaloes that entered the sea at this point.

- ***Metchi*** - A third cultural harvest event is the annual *metchi*, so-called, seaworm (*Eunice virides*) ceremony where local communities in Lautem and Tutuala gather at the coast in darkness, at the time of the new moon in March, to conduct ritual invocations and songs to mark the beginning of a new agricultural calendar (McWilliam 2002). Crowds enter the sea at number of defined coastal sites with burning torches to scan the surface and scoop up the writhing wormlike segments of the *meci* that spawn in great numbers in the shallows. The harvest is a public event and a much anticipated occasion for the gathering of extended families and friends who come to celebrate the abundance and bounty of the environment with which they maintain intimate association (McWilliam 2002, Palmer & Carvahlo 2008).



**Plate 8:** Examples of eco-cultural sites and ceremonies in the Dili – Tutuala region: (a) salt harvest at the estuary in Laga sub-district known as *Gassi Isi*; (b) ceremonial dance; (c) stone fish traps at *Lacló-Ili Mano*; (d) – (e) sacred spring and mangrove estuary at *We-ar-un* (or deepwater) in coastal Vermasse; (f) rice altar stone at *We-ar-un*.

### **3.2.2 Historical**

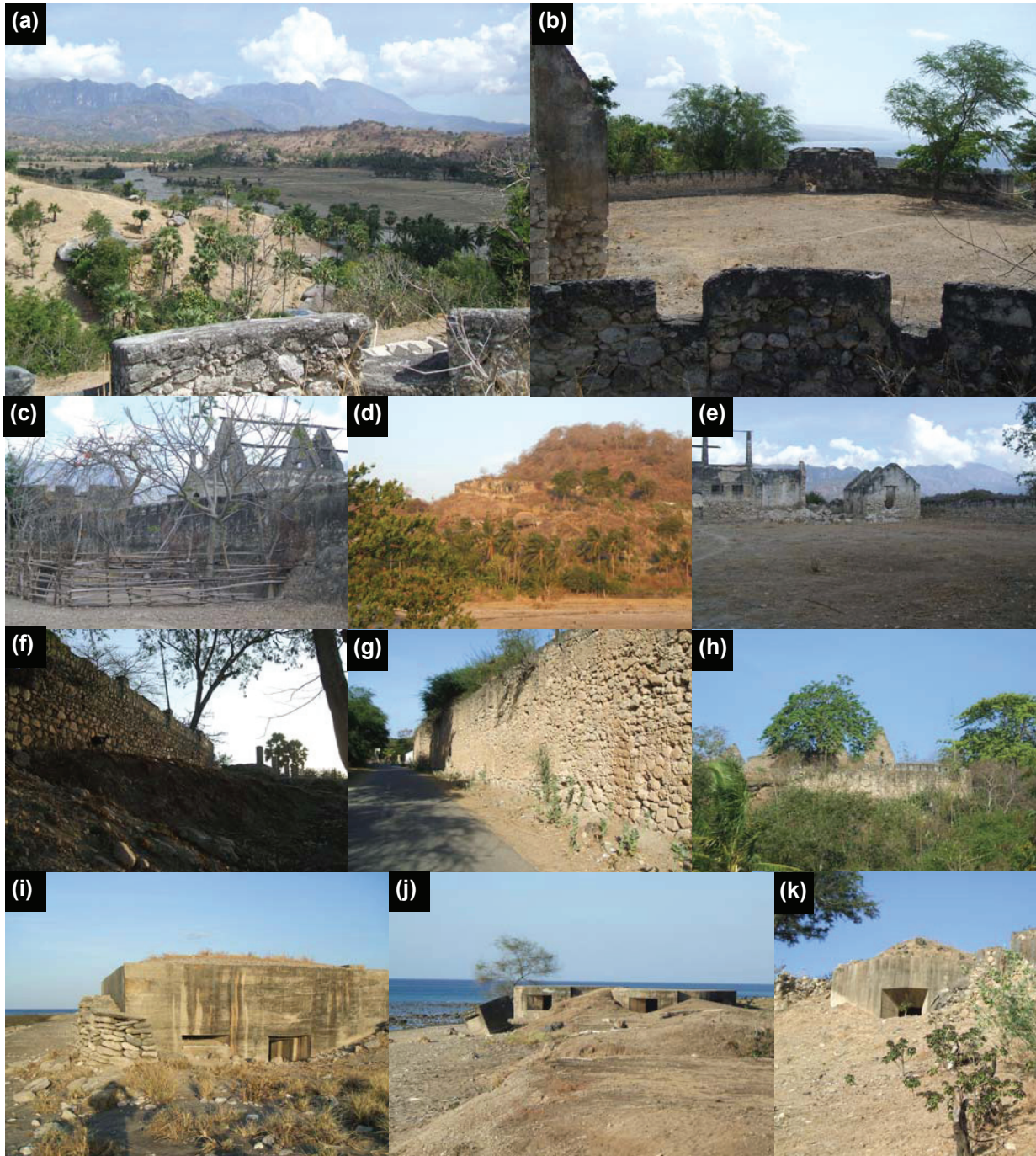
Colonialism has a long and chequered history of engagement in Timor Leste and left a range of built structures and evidence of its presence in the settled landscapes along the coastal zone. Below is a review of the colonial and non-indigenous built heritage along the north coast of Timor Leste (Dili to Tutuala coastal corridor).

#### **(a) Portuguese**

The enduring built heritage of Portuguese colonialism is perhaps best illustrated in the massive, if poorly maintained fortifications (*forte*) that are found along the northern coastline and across the highlands of Timor Leste (Lape 2006) (see Plate 9). They are also expressed in the numerous examples of fine architecture from the late Portuguese colonial period when efforts to promote administration and economic development were intensified.

Imposing stone forts in places like Maubara, Manatuto, Laleia, Baucau, Laga and Lautem are impressive examples of colonial built heritage and speak to a time when warfare and rebellion against Portuguese rule was a common feature of political life in Timor Leste. Some forts, such as the redoubt above the town of Laga, or the massive structure at Lautem have high tourist potential offering impressive surrounding views and facilities that could serve a range of tourist interests and activities. The fort at Laga for instance, offers views from the ramparts and inner structures that extends north over the sea and south towards the Matebian Ranges (Plate 9, a).

More recent examples of Portuguese architecture can be seen in remnants and ruins of early administrative and services buildings (see Plate 10). Many are in a poor state of repair but offer significant scope for restoration. The fine school building at Bucoli is an example as are the grand central buildings of old Baucau town including the market and the now restored Pousada. Old trading warehouses on the coast at Baucau and Lautem remain points of interest as does the (unrenovated) Pousada at Tutuala with its exceptional views. Other crumbling colonial buildings on the north coast of the Nino Konis Santana Park, at Com and Loekere, speak to early twentieth century attempts to implement more direct administrative governance.



**Plate 9:** Examples of Portuguese forts or *fortealezas* and World War II fortifications in the Dili – Tutuala region: (a)-(b) views from the Portuguese *fortealeza* at Laga; (c)-(e) Laga *fortealeza* and outbuildings; (f) fortified walls at Lalaeia; (g)-(h) fortified wall and *fortealeza* at Lautem; (i)-(k) Japanese World War II bunkers.



**Plate 10:** Examples of Portuguese colonial buildings in the Dili – Tutuala region: (a),(g) Baucu beach; (b), (l) Lautem district; (c) school at Bucoli,(d) Baucu township; (e) Pousada (Baucu town); (f),(i) Manatuto foreshore; (j) Laga; (k) Com.



## **(b) Catholicism**

Catholicism accompanied the Portuguese colonial trading interests to the shores of Timor in the late 16<sup>th</sup> century and the religion has been an important influence on the Timorese cultural landscape ever since, even as forms of indigenous religion continued to be practiced into the late twentieth century. To this end, the presence of Catholic heritage is highly visible along the Timor coastal zone.

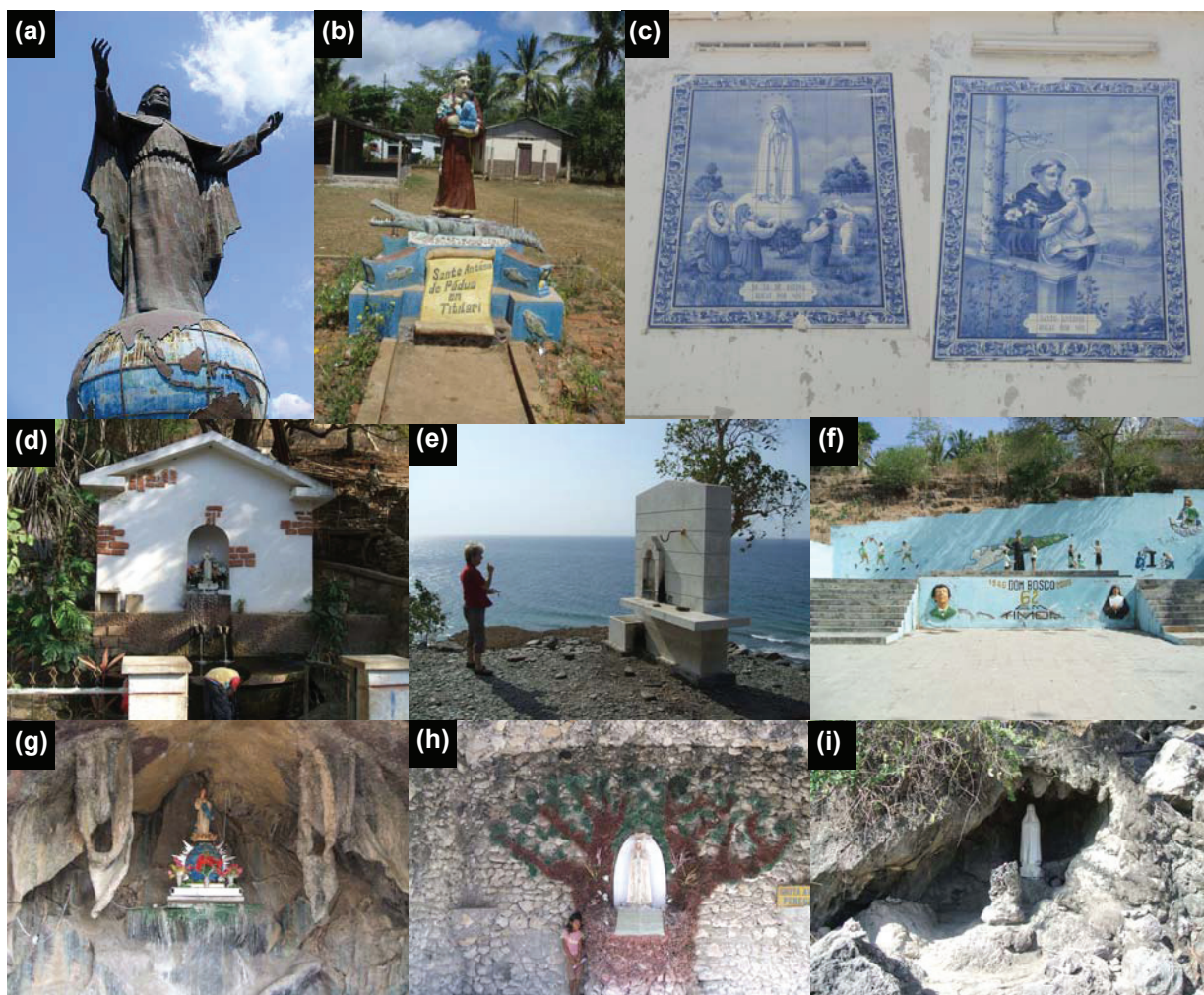
Probably the most iconic Catholic landmark in Timor Leste is Christo Rae, or Statue of Jesus, at Cape Fatumaca (in Dili) (Plate 11). This is the second largest such statue in the world, after the one in Brazil's Rio de Janeiro. It was built as a gift by Garuda Airlines to the Timorese people to celebrate the visit of Pope John Paul II. The current heritage survey (conducted in 2008) found that 52% of recorded sites were associated with Catholicism either as churches, cemeteries, grottos and other religious sites of commemoration and worship. Catholic Churches are a striking features of the north coast highway both in terms of their prevalence and the remarkable diversity of their designs and decorative features. Timor offers a rich heritage of vernacular Church architecture with its own distinctive aesthetic that includes hybrid designs that incorporate indigenous design elements in the formal, often strongly Portuguese influenced structures (see Plate 11). Churches in Lautem for example, often feature a stylised Fataluku roof / steeple in a striking visual integration of local and worldly religious elements. The Church is often the largest structure in Timorese settlements, particularly in villages and hamlets in rural areas and a key focal point for communities of shared faith.

Apart from religious interest, many Churches in Timor Leste are fine examples of historical periods and offer windows onto the past. The distinguished vaulted churches of Manatuto, Lalaçia and Vermasse that date to the 18<sup>th</sup> century are cases in point. Church graveyards and well tended cemeteries are also sites of interest that reflect the great respect afforded the dead in Timor Leste and the elaborate design features of Timorese graves themselves. In places such as Manatuto and Lautem, graveyards provide historical and cultural interest with their separate Chinese cemeteries.

Another significant religious theme along the coastal zone is the importance of Santo Antoniu (de Padua) as a focus for religious iconography and worship. Striking images of the Portuguese religious figure, patron saint of lost things and associated with marriage, the poor, children and the baby Jesus images, are found in numerous Churches and religious sites (see images from the Cathedral in Baucau and the statue in Títulari, Plate 12). Fatima is the female counterpart to this widespread veneration of Antoniu – also linked strongly to Portugal and the revival of Catholicism after the revolution of 1910.



Plate 11: Examples of Catholic churches in the Dili-Tutuala region.



**Plate 12:** Prayer sites and shrines of Catholic significance in the Dili – Tutuala region: (a) statue of Christa Rae, or the Statue of Jesus, at Cape Fatucama (Dili); (b) Santo Antoniu (de Padua) on the island of Timor; (c) Fatima and Antoniu (de Padua), the key patron saints of Catholic worship; (d)-(f) catholic shrines; (g) grotto and shrine at Lalaeia; (h) coral-based grotto and shrine (Gruta Avirgem Peregrina) at Manatuto; (i) grotto and shrine at Com.

### **(c) World War II**

The Japanese wartime occupation of Timor Leste from 1942-1945, has left a legacy of relics and historical heritage of the time. Examples of this legacy include concrete bunkers along the coast which functioned as defensive perimeters and lookouts (Plate 9). There are also cave storage sites in Baucau and a number of examples of Japanese roads that were constructed with corvée labour drawn from local communities. One striking example of this work is the old caminho (road/pathway) that connects Tutuala with the old settlement of Muapitine in the forests of the Nino Konis Santana National Park. The pathway, edged in stone, traverses the zone between the coast and the Paitchao mountain range. Local stories of Japanese wartime occupation are still widely remembered and retold.

More detailed mapping and assessment of Japanese wartime sites and structures in Timor Leste needs to be undertaken to identify potential sites for tourism and heritage protection and management.

### **(d) Indonesian**

A decade on from the turbulent withdrawal of the Indonesian government in Timor Leste, there remains a distinctive and prevalent Indonesian heritage in Timor Leste, one that is closely bound up with the resistance history and the struggle for independence. An excellent example of this period of Timorese history is contained within a Portuguese building in the Fort at Laga (Plate 13). Covering all the internal walls of the building and in a state of remarkable preservation are numerous coloured stencils of former Indonesian Infantry Battalion Insignia (see images: YONIF stands for Batalyon Infantri, Plate 13). The fact that these visual records of pre-1999 occupation remain very largely intact some 10 years later – is a remarkable feat of protection – particularly given that there is little actual security extended to the site. Graffiti and bullet holes along the outer walls complete the picture of this important heritage sites and reveal something of the dramatic events that have unfolded in the recent history of Timor.

There are many other examples of resistance history during the Indonesian period which might form the focus for further elaboration and development. Indonesian cemeteries (TMP) and commemorative structures may be found within the coastal zone. In the district of Lautem, there are numerous cave sites and other refuges in the forests where Falintil resistance fighters sustained their engagement against Indonesian armed forces.



**Plate 13:** Indonesia military sites, sites of significance for the Timorese political ‘resistance’ and Fretilin resistance leaders: (a), (d), (e), (h) Indonesian military outpost, showing Indonesian military battalian insignia, bullet holes, pro-integration graffiti; (b) Fretilin resistance memorial; resistance leaders, Nino Konis Santana (b), Jose Ramos Horta (f), Xanana Gusmao (g); (i) safe house of Xanana Gusmao; (j) Fretilin resistance gravesites.

## **(e) Significant Persons & Events**

With the backdrop of the struggle for independence in Timor Leste, there is considerable opportunity to document and promote the dramatic political history and events of Timor Leste, particularly the political ‘resistance’ and struggle for independence. This includes sites of major battles or massacres and also, Falintil resistance ‘hide-outs’. There is also a significant opportunity in Timor Leste to develop political tourism through the personal stories of significant persons and freedom fighters (see Plate 13). Potential significant persons (among others) could include high profile leaders of the resistance movement, ie. Xanana Gusmao and Nino Konis Santana, and Nobel Peace Prize laureates, Jose Ramos-Horta and Bishop Carlos Filipe Ximenes Belo.

In this regard, investment and promotion of political publications (ie. biographies, histories), also serve to significantly promote and focus international public attention and interest in the dramatic political historical narrative of Timor Leste. Some popular political historical publications and biographies include: *‘To resist is to win!: the autobiography of Xanana Gusmao with selected letters & speeches’* (Gusmao 2000), *‘A Woman of Independence’* (Sword Gusmao & Lennox, 2003), *‘Timor lives! : speeches of freedom and independence’* (Gusmao 2005), and more recently, *‘Balibo’* (Jolliffe 2009).

Within the context of coastal ecotourism along the north coast of Timor Leste, there is not only potential to record and promote sites of major political events (ie. massacres, battles), but also, to develop trails that trace the the coastal (cave, forest and mountains) hide-outs of Xanana Gusmao and other Falintil leaders, particularly within the Nino Konis Santana National Park (particularly around the Paitxau Range and the Irasequiro River). There are also opportunities to develop programs that employ Falintil ‘resistance’ veterans as local tour guides in the re-telling of the dramatic story of the struggle for independence in Timor Leste.

## **4 DISCUSSION**

### **4.1 Key Coastal-Marine Ecotourism Highlights**

The current project has identified a wide and diverse range of natural and cultural heritage values along the north coast of Timor Leste, that have significant potential for ecotourism development. In particular, the following 6 major attributes/assets and opportunities should be considered in promoting and developing coastal ecotourism in Timor Leste, to the region and also, internationally:

1. **Spectacular coastline (mountains-sea)** – coastline is characterised by intact coastal vistas and high aesthetic, mountains-sea landscapes.
2. **Globally significant marine wildlife** – coastal seas are situated on a major marine ‘wildlife corridor’.
3. **Accessible, intact and diverse coral reefs** – coral reefs are high accessible, intact and characterised by high diversity (especially fish).
4. **Rich, diverse, indigenous culture** – highly diverse and ‘intact’ indigenous culture, ceremonies and customary practices, traditional villages and communities.
5. **Highly dramatic social, political history & narrative** – complex, dramatic social, political history of struggle, ‘resistance’ and independence – and the birth of new nation.
6. **Unique socio-cultural influences** – strong socio-cultural influences of Catholicism and Portugese colonisation, unique within the South East Asian region.

## 4.2 Coastal-Marine Ecotourism Themes

The results of the current coastal-marine ecotourism study highlight an impressive diversity of prospective tourism potentials and themes which can provide a focus for future tourism development. Below we offer 3 thematic focal points for further consideration and promotion.

### 4.2.1 *The ‘Spiritual Nation’*

A common theme reflected in the study area, and indeed throughout Timor Leste is the continuing importance of religious worship and practice at sites of veneration. This is evident both in the complex of Catholic religious iconography, performance and built heritage, as well as a whole range of traditional Timorese performance and structures around a heritage of ancestral sacrifice and beliefs in the spiritual agency of the natural environment. Both heritage complexes represent significant opportunities for the development of spiritual tourism and tourist-based engagement and appreciation:

- *Local - Indigenous:* Cultural performances and craftwork, visits to *lulik* sites such as *uma lulik* (houses), ancestral settlements, garden altars, public harvesting ceremonies according to seasonal calendars.
- *Catholicism:* Religious/historical tours of churches and sites of religious worship, participation in Catholic events and performances in accordance with religious calendar, as well as opportunities for local religious merchandising.

#### **4.2.2 ‘Connections to Oceans’**

Coastal-marine based ecological and cultural tourism has great potential in Timor Leste for generating significant local business opportunities, employment and benefits for the wider community. In terms of coastal-marine based activities there are a range of highly prospective ecotourism activities that could be actively developed and promoted by government and private enterprise:

- Diving and snorkelling at a range of coral reef sites along the north coast, especially the Cristo-Rei, Behala, Com and Tutuala-Jaco areas. The latter forming part of the Nino Konis Santana National Park, where small-scale accommodation and marine-based tourism has already been developed.
- Marine megafauna and whale-watching along the north coast and Wetar Strait, with links to Atauro Island and complementary community-based, ecotourism development.
- Sports and charter-based game fishing for sailfish and marlin which could form part of a high-end tourist experience.
- Marine research has identified high number of sea turtle nesting sites on the coast of Timor Leste, particularly within the Nino Konis Santana National Park (Dethmers *et al.* 2009). As such, there are significant opportunities to generate local income and livelihoods, based on community-based, turtle ecotourism and conservation activities.

Timorese coastal communities also maintain significant economic and cultural connections with the coastal and marine environment. As partners in coastal-marine based ecotourism in selected regions there are numerous opportunities for local participation and income generation. Activities could include, low key accommodation development, direct employment and work on ecotourism services including fishing and tour guiding, hospitality events, marketing of local crafts and opportunities for visitors to participate in cultural performances and educational tours to learn about the connections that link Timorese communities to the adjacent marine waters.

#### **4.2.3 The ‘Struggle for Independence’ – Portuguese, Japanese & Indonesian Histories**

The third key theme to emerge from the coastal zone tourism research has been the potential for developing tourism services and opportunities around colonial history and the struggle for independence. A range of tangible and intangible historical heritage around the focal point of the independence struggle would provide attractive cultural tourism options including both, self-guided and guided tours that offer educational experiences and attractions at designated sites.



Of particular interest and potential are the Portuguese colonial forts which have been neglected for many years but which offer excellent venues for further tourist development around accommodation, museums, historical tours and restaurants. Japanese wartime sites and the legacy of Indonesian occupation also provide a range of interesting and nationally significant sites for development and conservation.

### 4.3 Potential Coastal-Marine Ecotourism Focal Points

#### 4.3.1 *Natural Precincts*

The following 3 areas have been identified as precincts or focal points for nature-based tourism development along the north coast of Timor Leste (Dili to Tutuala region):

- **Nino Konis Santana National Park and Marine Park** - The Nino Konis Santana National Park and Marine Park, established in August 2007 (RD/TL 2007b), represents the largest area of coastal and marine habitat and biodiversity currently protected in Timor Leste – and has the potential to become a major national focal point and icon for ecotourism. The park, situated in the Lautem district, encompasses an area of approximately 123,590 hectares, including 67,930 ha of terrestrial habitat (including the largest remaining area of natural forest in Timor-Leste and the island of Timor) and 55,660 ha of marine habitat (de Carvalho *et al.* 2007a, Edyvane *et al.* 2009). The coastal sections of the park include the coastline of Lautem district and the island of Jaco, which is recognised for its “pristine waters and white sand beaches” and abundant coral reefs and marine wildlife (eg. turtles, sharks, rays). The park also includes outstanding cultural heritage values of World Heritage significance, particularly, ancient cave paintings (O’Connor 2003, O’Connor & Oliveira 2007), ancient cave and occupation sites (O’Connor *et al.* 2002, O’Connor & Veth 2005, Pannell & O’Connor 2005, Veth *et al.* 2005), and ancestor tombs in the village of Ilequereque (Bock 2006, MAFF 2006). The marine area of the Natural Park is located within the ‘Coral Triangle’ region (the epicentre of global tropical marine biodiversity), while the terrestrial park links together three Important Bird Areas (IBAs) designated by BirdLife International: Lore; Monte Paitchau and Lake Iralalara; and Jaco Island (BirdLife International 2007). In accordance with IUCN Protected Area Management Category V (Phillips 2002), a collaborative joint management approach (with local communities) is envisaged for the National Park and Marine Park, to protect the rights of use for local communities for sustainable traditional, spiritual and cultural needs, and respect for customary ownership (MAFF 2006, Edyvane *et al.* 2009). Under *tara bandu*, protection and restrictions also apply to sacred places within the park, such as Jaco Island (ie. Jono Beach and Hilapuna Beach), where no fishing,

swimming, diving or going ashore is allowed under customary law (Sandlund *et al.* 2001, de Carvalho *et al.* 2007). However, these prohibitions are frequently violated by domestic as well as international tourists that either disrespect, or are not aware of those restrictions, and by local fishermen that offer transport to the island in pursuit of economic profit. As such, if not managed appropriately, tourism development can have significant impacts and contribute towards erosion of cultural values (Sandlund *et al.* 2001).

Within the proposed multiple-use management framework for the National Park and Marine Park, there is significant scope to plan, build-upon and further develop sustainable coastal-marine ecotourism within the park - in line with the proposed management principles for the park (see MAFF 2006, Edyvane *et al.* 2009). Current coastal tourism development within the park is large confined to Com (Com Resort, guesthouses, fishing/snorkelling activities, local crafts) and Tutuala (eco-village, fishing/snorkelling activities) (see Plate 14). At the community-level, the national NGO, the Haburas Foundation, is actively engaged in facilitating community-based, ecotourism development (including the community-based, eco-village at Valu Beach, Tutuala), and also, involved in a range of projects including mangrove replanting, ecotourism development, catchment rehabilitation and reforestation, environmental education and the strengthening of traditional natural resource management regimes (Haburas Foundation 2007, Weaver 2008).

- **Atauro Island (marine wildlife, coral reefs, fishing)** – The island of Atauro, off the north coast of Timor, also has significant potential to become a major ecotourism destination for Timor Leste. The island has a wide range of beaches, intact coastal vistas, fishing opportunities and recognised diving sites, and significantly, it's geographical location within the deepwater habitats of the Wetar Strait provide accessibility and excellent opportunities for potential whale and dolphin watching, close to shore. The island also has a rich cultural heritage, including intact, customary practices and indigenous sites, World War II heritage sites and a range of local crafts. Community development (particularly improved health and education outcomes) and income generating activities are a major priority for the island, with subsistence fishing and agriculture being the main sources of livelihood on the island (NDFA 2005) - and many of the communities lacking electricity, regular access to clean water and education. Importantly, community-based ecotourism has been identified as major priority for income generation on the island and the local Atauro-based NGO, Roman Luan, has been undertaking a range of ecotourism development projects, including the establishment of an eco-lodge on Vila beach, and the development of a set of guidelines for sustainable eco-tourism (Weaver 2008). All regulations and guidelines were

developed through a consultation process that brought together key stakeholders such as village heads, fishermen's cooperatives, and Dili-based dive tour operators. Roman Luan has also built eco-cabins in two remote areas adjacent their Early Literacy schools (Sean Ferguson Borrell, *pers.comm*). In response to declining fish catches, the fishing communities, with assistance from Roman Luan, have also established 2 community-based Marine Protected Areas (MPAs) (under the Bikeli Marine Management Project), together with regulations (Belo Soares, M., *pers. comm.*), in the Bikeli region of Ataúro Island (Pedi 2007, Weaver 2008). The FAO is currently cooperating with the NDFA to assess the prospects for establishing an MPA on Ataúro Island (dos Santos Silva *et al.* 2007). Other coastal-marine activities undertaken by Roman Luan include a survey of fisheries operations and community workshops on safe fishing practices, and coastal revegetation (Pedi 2007). More recently, the local NGO Ba Futuru, in partnership with Roman Luan, is undertaking a range of community, fisheries and tourism development activities (Sean Ferguson Borrell, *pers.comm.*). This includes development of additional tourism activities for the fishermen's cooperative, renovation of existing ecotourism facilities (including addition of solar panels and furnishings), new tourism events, and the promotion of Atauro as a tourism destination through bilingual (Portuguese and English) tourism promotional materials (including a tourism magazine for Atauro).

The establishment of a large, multiple-use, Marine Park or Marine Protected Area by the NDFA on Atauro Island would provide the necessary legislative, planning and development framework to facilitate both, biodiversity conservation and the development of sustainable, community-based, ecotourism. A critical and priority issue for future ecotourism planning and development (and also, community development), on Atauro Island remains accessibility, ie. regular and affordable transport to and from the island. As such, there is currently only one ferry per week from Dili. There is also one large boat owned by the eco-village, however it is currently not operational and as a consequence, visitation rates to the island, and also local incomes, have dropped dramatically, both in the eco-village and in the surrounding communities (Sean Ferguson Borrell, *pers.comm.*).

- **Nearshore coral reefs (Dili – Manatuto, K57)** – The nearshore coral reefs immediately east of Dili (Dili – Manatuto, K57) are high accessible and popular for shore-based diving due to the accessibility to steep, reef drop-offs, and have significantly potential for ongoing dive tourism development (particularly day tourism, due to their proximity to Dili). As such, several well-known diving sites are currently regularly used by local diving companies. In developing coral reef dive tourism, there is a need to evaluate coral reefs and identify priority areas; identify and characterize dive sites; establish protection and management regimes (ie. Marine Protected Areas); implement poverty alleviation strategies; identify diving markets and create new markets

(eg. in association with research volunteer programs, such as *Reef Check*); and create a monitoring system (Ximenes & Carter 1999, Tibirica 2007). At the national level, the lack of emergency facilities (ie. decompression chamber) remains a major limitation for dive tourism development in Timor Leste. Dive industry stakeholders have also identified the need for dive tourism to contribute directly to local communities, through a tourism levy or small fee, and also, the need to fund the establishment of small-scale infrastructure at dive sites. There is also a high priority need to reduce negative cultural impacts between dive tourists and local communities, through understanding and documentation of local customary laws at current and potential dives sites, particularly customs and restrictions under *'tara bandu'*.

#### **4.3.2 Cultural Precincts**

The following 3 areas have been identified as precincts or focal points for culture-based tourism development along the north coast of Timor Leste (Dili to Tutuala region):

- **Portugese colonial heritage (Manatuto, Baucau)** – the Portugese colonial heritage within the coastal townships of Manatuto and Baucau offer considerable potential for developing cultural tourism precincts or focal points for tourism development. The coastal promenade and colonial buildings on the Manatuto foreshore offer significant potential for high-value accommodation and restaurants, combined with heritage (and religious) tourism.
- **Fort complexes (Laga, Vemasse)** – The massive, fortifications (*forteleza*) that are found along the northern coastline and across the highlands of Timor Leste (ie. Maubara, Manatuto, Lalaicia, Baucau, Laga and Lautem) provide impressive examples of colonial built heritage and significant opportunities for cultural heritage tourism. In particular, the imposing stone forts above the town of Laga, or the massive structure at Lautem have high tourist potential offering impressive surrounding views and facilities that could serve a range of tourist interests and activities (ie. cultural and dance performances, museums). For instance, the fort at Laga, while poorly maintained, not only offers impressive views of the Matebian Ranges down to the sea, but is ideal as an 'open air' theatre for cultural performances (similar to those established in historical buildings and temples in regional cultural centres in Indonesia, ie. Ubud). The adjacent building, with Indonesian Infantry Battalion Insignia provides a unique opportunity to continue the theme of 'resistance' and establish a military or 'resistance' museum dedicated to the compelling narrative of Timor Leste's resistance and struggle for independence. Cultural tourism has significant potential to generate local incomes and livelihoods through tour-guiding and also,

through site-based heritage activities (ie. restoration, management). Documentation, maintenance, restoration and heritage protection and management of the fort complexes in Timor Leste (and integration with tourism development planning) is a high priority for cultural tourism development.

- **Indigenous culture (Com-Tutuala-Lore region)** – The rich diversity of local traditions, customs and practices along the north coast of Timor Leste represents a vital and enduring cultural heritage with significant potential for cultural tourism development. In particular, communities in the Lautem district (Com-Tutuala-Lore) maintain strong traditional culture (Fataluku), lifestyle and practices, perhaps more vigorously maintained in the area than in other parts of East Timor (MAFF 2006). Distinct locations along the coast are identified as the ancestral homes of the Ratu or noble families of the area, and sacred places such as *lulik* forests and Ili Kerekere (e.g. Kwavatxa Nian, Tutuala Nian) are of major importance to the ceremonial life of communities, and continued access to (and protection of) these sites is a priority. Further, seasonal ceremonial harvest festivals in the region (ie. *We-ar-un*, *Gassi Isi*, *Metchi*) accompanied by traditional ceremonies and rituals provide a significant opportunity for cultural tourism and local income generation. While indigenous cultural tourism has the potential to provide significant local economic benefits - planning and development requires a considered and precautionary approach and also, close consultation and collaboration and negotiated agreements with local communities to minimise cultural impacts through visitation.

## 5 EMERGING ISSUES & PRIORITIES

### 5.1 Coastal-marine Ecotourism Development in Timor Leste

Coastal-marine ecotourism, as a labour-intensive industry, has significant potential to generate local incomes and long-term employment for coastal communities in Timor Leste, particularly if the tourism sector adopts community-based, 'pro-poor' approaches to development and the industry is developed in an ecologically sustainable manner (Sandlund *et al.* 2001, Weaver 2008). The development of ecotourism provides opportunities for local communities to benefit directly through accompanying income streams and work opportunities such as tour guides, guest house management, cultural performances and sales of local handicrafts and produce. Cash flow derived from participation in natural and cultural-based ecotourism also has indirect flow-on effects which can benefit the wider community. In this regard, community-based eco-lodges (such as on Ataúro Island and Valu Beach, Tutuala) represent good models of 'pro-poor' tourism development from which local coastal

communities can profit (see Plate 14). However, expansion of the coastal tourism sector in Timor Leste requires careful planning and management to reduce potential environmental and cultural impacts. Increased tourism not only results in increased needs for infrastructure, food provision and public services, but also increased amounts of waste, and potential impacts on coastal landscapes and ecosystems, including loss and degradation of coastal-marine habitats (ie. mangroves, coral reefs), loss of scenic amenity, marine pollution, and over-harvesting of marine resources.

Coastal tourism development can also result in potential conflicts over land tenure and access to beaches and fish-landing sites, and cultural conflicts with respect to traditional local '*tara bandu*' customs and values (Sandlund *et al.* 2001, Weaver 2008). While the Constitution does not clearly acknowledge the role of traditional customary practices and law, recently passed government resolutions and policies clearly recognise traditional customs and the role of local communities in natural resource management (Weaver 2008). Further, traditional customary laws and practices have experienced a resurgence in many communities - due to the 'bureaucratic vacuum' created by an incomplete regulatory framework, as well as weak law enforcement and outreach to local communities (Palmer & Carvalho 2007). Significantly, this revival is being actively supported by the efforts of NGO's, such as the Haburas Foundation, which is working closely with local community groups to revive and utilize traditional customs, practices and laws under '*tara bandu*' and to promote sustainable environmental practices and community development. This includes capacity building and community education to shift local communities from using environmentally harmful practices (ie. destructive fishing methods, harvesting of turtle eggs, meat and shells) to environmentally sound practices (Haburas Foundation 2007a).

Critically, the development and ultimate success of community-based, coastal ecotourism in Timor Leste will require full acknowledgement, documentation and support of existing traditional, local customary practices and law in managing Timor Leste's rich and diverse natural and cultural heritage and resources, and also, significantly, integration with national sustainable ecotourism planning and development (including management and regulatory frameworks). Importantly, this will require close collaboration and formal partnerships with local communities and NGOs, such as the national NGO, the Haburas Foundation and local NGOs, such as Roman Luan and Ba Futuru.

Below is a list of key issues, directions and priorities, identified through government, industry and stakeholders consultations (and at the coastal-marine ecotourism workshop, held 29 April 2009), to assist coastal-marine ecotourism development in Timor Leste.

## 5.2 Ecotourism Promotion, Planning and Development

1. **Establish a TL Ecotourism Taskforce** – There is a critical need for a high-level, government taskforce to facilitate ecotourism development in Timor Leste. This taskforce should oversee ecotourism planning and development in TL and coordinate relevant activities and programs between respective agencies, and comprise representatives from Tourism, Culture, Protected Areas, Fisheries, Environment and Education. The taskforce should be supported by a full-time, Ecotourism Coordinator, to support and advise the taskforce and assist with the development of a 3-Year Workplan.
2. **Public Awareness and Community Outreach Program** – There is a significant lack of public and political awareness of the scope, nature, and potential benefits (and impacts) of ecotourism in Timor Leste. This could be addressed through a village-based, community outreach and education program to promote the opportunities of ecotourism (as a source of alternative sustainable livelihoods) and also, a public forum or conference on ‘Ecotourism Opportunities in Timor Leste’. The former should also include targeted training of identified ecotourism field officers within each district.
3. **Lack of Services and Tourism Infrastructure** – There is a critical lack of tourism services and infrastructure (particularly accommodation) in Timor Leste in potential key tourist locations and precincts (for instance, BeMalai needs to be rehabilitated).
4. **Lack of Boating and Sailing Infrastructure** – The lack of non-tidal marinas in Timor Leste significantly restrict sail tourism, major yachting events and also, larger tourist cruise boats.
5. **Tourism and Hospitality School (Training Program)** – There is a high priority need to develop a formal vocational training program in tourism and hospitality in Timor Leste. This could be achieved through the establishment of a Tourism and Hospitality School in Dili or through regional partnerships (ie. Charles Darwin University).
6. **University Training** – There is a need to train and develop qualified professionals in tourism, environmental sciences and marine biology in Timor Leste. This could be achieved through the provision of undergraduate programs at the National University of Timor Leste, or regional educational partnerships (ie. James Cook University of North Queensland, Charles Darwin University).
7. **Lack of Emergency Facilities** – The lack of important emergency facilities, such as a decompression chamber for potential SCUBA diving accidents, is a significant impediment to the growth of dive tourism in Timor Leste.
8. **Crime Prevention and Public Safety** – Crime prevention, particularly the ongoing theft at key tourism destinations (particularly in Dili, along the foreshore and at local beaches, ie. behind Christa Rae) is a high priority public safety and security issue. There is also a need to establish Drink Driving Laws and improve law enforcement.

## 5.3 Coastal-Marine Cultural Heritage Management

9. **Coastal-Marine Customary Heritage Management** - There is a need to recognise, document, incorporate and promote, existing customary heritage management of coastal-marine natural and cultural heritage in Timor Leste. Local people know local places (*Ema mak lokal deit, hatene fatin signifcante*). As such, a certain level of existing coastal-marine heritage protection in Timor Leste is already afforded through customary management (forms of *tara bandu*). Further, if customary interests are not addressed, potential cultural conflicts might occur with respect to traditional local customs and values.
10. **Natural and Cultural Heritage Protection Legislation** – There is a need to finalise and implement formal heritage (natural, cultural) protection policy, legislation and regulations for Timor Leste to underpin the sustainable development and management of the natural and cultural resources of Timor Leste. The development of new cultural heritage legislation has been highlighted in the national cultural heritage policy, released by the National Directorate of

Culture in 2008. This policy defines the objectives and the strategies for cultural heritage management in Timor Leste (2008-2012), including the maintenance of the National Collection of Timor Leste and the building of a National Museum and Library.

11. **Develop and Promote Key Cultural Heritage Sites** – There are significant opportunities to develop key cultural heritage sites along the north coast of Timor Leste, including: an outdoor performance theatre at Laga (fort complex) for outdoor cultural performances; development of a ‘resistance’ museum at the fort complex in Laga; and the declaration and development of the Manututo foreshore as a cultural precinct. These opportunities should be pursued, complementary to the development and implementation of relevant training, planning and heritage protection and management policies and regulations.
12. **Coordinated Culture and Tourism Management** - The cultural heritage of Timor Leste is of interest to both, the National Directorate of Culture (as the key agency responsible for preserving cultural heritage) and also, the National Directorate of Tourism (as an agency which seeks to use cultural heritage for economic development). As such, there are strong linkages and areas of common interest between the 2 agencies (ie. mapping/assessment of cultural values; cultural heritage training; interpretation and education; ‘on-site’ heritage management (tourist operators vs. heritage officers) – and as such, there is a need for greater coordination and cooperation.
13. **Integrated Cultural Heritage Mapping & Assessment** – There is a need to undertake and also, coordinate, craft, culture and heritage mapping, assessment and planning in Timor Leste. The National Directorate of Culture, established in 2002, is currently undertaking mapping and characterisation of cultural sites and traditional activities throughout the country (and also, the organisation of cultural festivals, and provision of support to cultural groups across Timor-Leste). However, further applied research, documentation, assessment and consultation with local authorities and communities, is needed to identify and assess the full range of Timor Leste’s rich and diverse cultural heritage. Since 2000, the Museum and Art Gallery of the Northern Territory (MAGNT) has been assisting the National Directorate of Culture in the rescue and curation of the National Collection of Timor Leste (NB: approximately two thirds of the collection was damaged, looted and dispersed in 1999), advising on an acquisition policy and developments for the future National Museum of Timor Leste, and also, significantly, in providing training in cultural heritage curation, including donating a heritage database system to organise existing heritage items. This partnership with MAGNT should be supported to provide ongoing field and training in cultural heritage mapping, assessment, documentation, database and heritage management.
14. **Integrated Heritage Data Management** – A single, integrated heritage (natural, cultural) database should be considered to incorporate existing mapping, documentation and assessment activities, and also, relevant ecotourism infrastructure. The identification of local craft industries or the mapping of ‘resistance’ sites (by the Secretary of State for Veterans) are key data-layers in identifying ecotourism opportunities – and needs to be incorporated into a single heritage database. Spatial data from the current project (see Appendix 3) needs to be integrated with existing mapping and assessment activities undertaken by the National Directorate of Culture and the National Directorate of Tourism.
15. **Historical and Political Heritage Mapping & Assessment** – There is a need to invest in the recording of history, particularly the identification, assessment and documentation of sites of historical significance in Timor Leste (including the dramatic, political ‘resistance’ narrative and struggle for independence). As a key component of Timor Leste’s cultural heritage – this information needs to be managed in an integrated heritage database (see 14. above).
16. **Field-based, Cultural Heritage Training** – There is a need to develop and implement a training program for district-based, cultural guides to assist with cultural heritage management (ie. ‘site management’, protection and restoration of cultural heritage). This should include training in protection and restoration of historical buildings, forts and art-sites (ie. caves, rock art). There is currently one culture field officer per district in Timor Leste. As such, targeted training should be directed toward existing culture officers.



17. **Built Heritage Protection** – There is a need to preserve, protect and promote heritage houses (including forteleza's, Portugese colonial buildings and traditional houses), 'street scapes' and local traditional, architectural features in Timor Leste (cf. Bali), through local building laws and incentives schemes. Local buildings should be height-limited (4-storey).
18. **Minimising Cultural Impacts** - There are a range of potential negative impacts arising from a significant influx in foreign tourists and visitors to local communities. For this reason, decisions about local tourist planning and development require full consultation and negotiated agreements with local communities. The establishment of tourist precincts which can offer enhanced amenities and services can also assist in minimising access to places of cultural or environmental sensitivity. From these points networks of more specific and negotiated tourist destinations and sites of interest could be developed.
19. **Authentication of Timor Leste Crafts & Heritage Artefacts** – There is a need to protect and promote authentic art, craft and heritage artefacts of Timor Leste to protect the livelihoods of traditional artisans and crafts and prevent/minimise the importation and impacts of “cheap fakes”.

#### 5.4 Coastal-Marine Natural Heritage Management

20. **Coordinated Ecotourism & Environmental Management** - Ecotourism development within National Parks and Marine Parks should (where possible) be facilitated through park planning and management (through the preparation of management plans). National Parks, Marine Parks are often key locations for nature-based tourism. As such, rangers often play a key role in visitor interpretation and experiences. Park-based environmental education, marketing and public outreach programs are also strong drivers for ecotourism.
21. **Prepare and finalise management plans for the Nino Konis Santana National Park and Marine Park** – There is a high priority need to prepare, finalise and implement the management plans for the Nino Konis Santana National Park and Marine Park. To ensure integrated and compatible development of ecotourism with the park, there should be formal tourism representation (from the National Directorate of Tourism) on the relevant management planning committee for the Nino Konis Santana National Park and Marine Park.
22. **Coordination with the Coral Triangle Initiative** – The development of alternative sustainable coastal-marine livelihoods (such as ecotourism) are essential for the conservation and protection of Timor Leste's unique marine and coastal ecosystems and biodiversity. To this end, the National Directorate of Tourism should be a formal member of the National Coordination Committee for the Coral Triangle Initiative (CTI).
23. **Walking Trails, Facilities Within the Nino Konis Santana National Park & Marine Park** – There is a critical need to establish infrastructure, facilities and services with the NKS National Park and Marine Park. Priorities should include (among others) the development of walking trails (for natural and cultural tourism), and identified and designated areas for camping and food/accommodation, in consultation and through partnerships, with local communities. These will need to be accompanied by local, targetted, education/outreach programs, capacity-building and ranger and guide training programs.
24. **Atauro Island Marine Park** – Atauro Island has a wide range of natural and cultural ecotourism values (eg. marine wildlife, coral reefs, fishing, wood carving, tais, World War II sites, etc.) and significant potential to further develop community-based, coastal-marine ecotourism. The establishment of a IUCN Category V, multiple-use, Marine Park would both, recognise and protect these significant values, and also, provide a planning and management framework for sustainable tourism development.
25. **Establish Marine Wildlife Tourism Working Group** – Marine wildlife tourism, particularly whale and dolphin watching and turtle nesting has considerable potential to generate significant local incomes and livelihoods for coastal communities along the north coast of Timor Leste. This type of marine industry however, also has the potential to grow very rapidly and

unchecked. A Marine Wildlife Tourism Working Group (established and convened by the National Directorate of Tourism) should be established to facilitate the careful planning, development and management of this industry.

26. **Develop Community-based Marine Wildlife Tourism** – As a matter of priority, there is a need to investigate potential opportunities for community-based marine wildlife tourism in Timor Leste, including boat-based, dolphin watching (in the Dili and/or Tutuala region), a turtle hatchery (potentially at Com), and crocodile farming (potentially in Vemasse or Lafack). This should include a feasibility study and a resource/capacity assessment and also, be accompanied by the complementary development of an appropriate policy, planning framework, regulations, compliance and training, to ensure sustainable marine wildlife ecotourism (see 18. above).
27. **Need to Control Illegal Marine Harvesting** – The lack of enforcement of marine environmental laws in Timor Leste (especially Regulation 2000/19) is a significant impediment to coastal-marine ecotourism in Timor Leste. The sale of illegal marine harvests – sea turtles and their eggs, corals, shells, corals on local roadside stalls, and shark fins for sale in supermarkets – promotes a view, among tourists, of poor marine protection and management in Timor Leste.
28. **Unsustainable Marine Harvesting** – Food insecurity, the lack of appropriate fisheries regulations and the lack of local enforcement of existing regulations, is resulting in widespread, unsustainable marine harvesting in Timor Leste. This includes extensive low-tide harvesting of inshore reefs, no catch limits or minimum catch sizes, and the widespread and indiscriminate use of fish traps to harvest fish.
29. **Coastal Protection and Loss of Coastal Access** – The coastal zone of Timor Leste is a major public and ecotourism asset. While much of the north coast of Timor Leste currently remains relatively accessible and unspoilt, unplanned buildings and infrastructure on beach fronts and dune systems, and also, the increasing number of coastal seaweed farms, have the potential to prevent public access to key tourist locations, if not regulated. Consideration should be given, at a national level, to establishing a coastal buffer protection zone – to provide for public access and stop unsustainable and ‘ad hoc’ building developments on beach fronts and dune systems.
30. **Management of Saltwater Crocodiles** – The saltwater crocodile population in Timor Leste represents both, a resource and also, a significant threat to public safety and ecotourism development, particularly marine-based tourism (such as diving, snorkelling). There is an urgent need for a crocodile survey, assessment, monitoring, training and management program in Timor Leste, including relocation of problem crocodiles and investigation of the potential for farming. The Northern Territory Government (Parks and Wildlife Service) has significant expertise and potential to assist in developing this program.
31. **Coastal Habitat Degradation and Loss** – The lack of fuel and firewood along the north coast of Timor Leste is resulting in the widespread loss of coastal forests, including mangroves. Estimates indicate that Timor Leste has lost 80% of its mangrove forests (Boggs *et al.* 2009), due principally to illegal logging. Coastal mangroves are not only important ecologically (as critical fish and crustacean nursery and feeding areas, coastal buffers against cyclones and tsunamis, etc.), they are also important sites of cultural significance (ie. harvesting ceremonies, sacred sites or *lulik*s).
32. **Mangrove Walkway** – To promote public awareness of the ecological value of mangroves, consideration should be given to the establishment of community-based mangrove boardwalk (and associated educational facility) in the Metinaro region, a region currently under threat from illegal logging. Significantly, local tourism revenue from the mangrove education facility could provide incentives to reduce local logging of mangroves.
33. **Sustainable Dive Tourism** – There is a need to develop and implement, culturally sensitive and pro-poor, dive tourism guidelines to raise cultural awareness (ie. prevent divers from diving in sacred *lulik* areas) and also, to provide financial input to local coastal communities from SCUBA-based dive tourism. A small fee or tourism community levy should be considered to contribute to a local community funds – the levy could also be used to fund small-scale infrastructure at dive sites.harvesting local resources (ie. crayfish).

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## APPENDICES

**Appendix 1:** Stakeholder workshop (29 April 2009) on identifying coastal-marine ecotourism opportunities in Timor Leste.

### Identifying Coastal – Marine Ecotourism Opportunities in Timor Leste

Arbiru Resort, Dili, 29 April 2009, 9-4 pm

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#### WORKSHOP GOALS

4. To identify the key coastal-marine natural and cultural heritage values of Timor Leste.
5. To identify potential coastal-marine ecotourism sites, themes and opportunities for Timor Leste.
6. To identify key issues, priorities, needs and directions for the development of a sustainable coastal-marine ecotourism in Timor Leste.

#### WORKSHOP AGENDA

<u>Time</u>	<u>Topic</u>
9:00 – 9:20	Welcome Remarks – Ms. Inacia Teixeira, NDT (Facilitator)
9:20 - 9:40	Official Welcome & Remarks - H.E Gil Alves (MTCI)
9:40 –10:00	Official Welcome & Remarks - Ms. Cicilia Assis (NDC)
10:00–10:30	<i>'Timor Leste has Enormous Potential for Marine and Coastal Tourism'</i> – presentation - Mr. Jose Quintas (Director – NDT)
10:30– 11:00	<i>'Coral Reefs, Pescas &amp; Siguranca alimentar iha Timor Leste: liu hosi Conservasaun &amp; Desenvolvimento Sustentabilidade'</i> – presentation - Mr. Celestino de Cunha Barreto (Director - NDF)
11:00	MORNING TEA
11:30–12:00	<i>'Politika Ambiental Marinha'</i> (Marine Environment Policy) – presentation - Mr. Mario Ximenes (Director - NDIEA)
12:00-12:30	<i>'Identifying Coastal-Marine Ecotourism Opportunities in Timor Leste – Preliminary Findings'</i> - presentation (Prof. Karen Edyvane – NTG)
12:30-1:00	<i>'Historical, Socio-Cultural Heritage Values of Timor Leste'</i> – presentation (Prof. Andrew McWilliam – ANU)
1:00 – 2:00	LUNCH
2:00 – 3:00	Identification of Key Values, Management Issues & Priorities - Review & Discussion (Groups)
3:00 – 3:30	Feedback from Groups & Discussion - Ms. Inacia Teixeira (Facilitator)
3:30 – 4:00	Recommendations & Concluding Remarks – Ms Jose Quintas
4:00	AFTERNOON TEA

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List of participants at the coastal-marine ecotourism stakeholder workshop:

<b>Name</b>	<b>Position</b>	<b>Agency</b>
Kym Miller	Owner	DTC Holidays
Robert Crean	Owner	Tiger Fuel/Compass Charters
Domingos Belo Da Cruz	Staff	DTC Holidays
Cosme Sanches	Staff	Megatours
Manuel Da Cruz	Pesquisa	Ministerio de Agricultura e Pescas (MAP)
Nilton Jorge	ALGIS	Ministerio de Agricultura e Pescas (MAP)
Mareelo Belo Soares	Co-ordinator	Tua koin
Arsenio Pereira	Co-ordinator	Rede Hasatil Ministrio do Turismo, Comercio e Industria (MTCI)
M. Luzia Casimiro	Assessora	Freeflow Diving
Wayne Lovell	Manager	Island Charters
Jim Cato	Manager	Freeflow Diving/TLTC/MTCI
Ann Turner	Manager	Ministrio do Turismo, Comercio e Industria (MTCI)
Osorio Corneia??	Assessor	NT Government
Karen Edyvane	Principal Scientist	Australian National University (ANU)
Andrew McWilliam	Researcher	Ministrio do Turismo, Comercio e Industria (MTCI)
Ana Bersc??	Assessor	NCSA
Nelson Modeira	Staff DNAAI	Asosiasaun HAK
Rogério Soares	Staff Manager (Parque Nacional Nino Conis Santana)	National Directorate of Forestry/MAP
Pedro Pinto	Staff	National Directorate of Forestry/MAP
Louis Meirs Ribijro???	T.Database	Meterologia
Flaviana Fernandes	Member AEMTL	Associoceo
Ivone Bbarris	DE	Haburas Foundation
Demetrio do Amaral de Carvalho	Staff	Haburas Foundation
Reinaldo	Staff DNAAI	National Directorate for Fisheries & Aquaculture (DNPA)/MAP
Celestino Barreto de Cunha	Staff DNF	National Directorate of Forestry /MAP
Joaquina Goncalves	Advisor	Ministerio da Economia e Desenvolvimento (MED)
Abilio da Fonseca	Assessor	Sec. Est. Pescas
Carlos de Jesus	General Development Officer (Timor Leste)	USAID
Peter Cloutier	CTI Program Specialist	USAID
Rene Alostá	STL	STL
Maria Lednia	Director	Direccao Nacional Assuntos Ambientais Internacionais (DNAAI)/ Ministerio da Economia e Desenvolvimento (MED)
Mario Ximenes	Managing Director	Eco Discovery DNMA/ Ministerio da Economia e Desenvolvimento (MED)
Maria Noronha	Staff	Ministrio do Turismo, Comercio e Industria (MTCI)
Hernanio Xavier	Trade Expert	
Miguel Dif??		



## **Appendix 2:** Opportunities for Coral Reef Dive Tourism in Timor Leste.

**Thesis Title** – *‘The potential for sustainably managed SCUBA diving tourism to assist in both community development and coral reef conservation in developing countries - with a focus on a case study from Timor Leste (East Timor)’*

**Masters Student** - Yara Tibirica.

**Project Supervisor** – Dr Alistair Birtles (James Cook University of North Queensland).

**Abstract** - Tourism has been often suggested as a tool for sustainable economic development in developing countries. To achieve sustainability, tourism in developing countries should be planned to include strategies for poverty alleviation (pro-poor tourism). Diving tourism is a growth industry in many developing countries, where most coral reefs are located. It is well recognized that diving tourism can generate considerable income for business and contribute to coral reef conservation. However, anecdotal information suggests that the locals, especially the poor, are rarely the beneficiaries of the diving industry in developing countries. Apart from one assessment of implementation of pro-poor strategies to manage a SCUBA dive operator in Sodwana, South Africa, no other study could be found regarding diving tourism and poverty alleviation.

This report analyses the SCUBA diving tourism industry as a tool to assist sustainable development based on principles of pro-poor tourism in developing countries with a focus on a case study from Timor Leste. This study is based mainly on exploratory desktop research of secondary data, although primary research was also used to assist in the analysis of issues relating to SCUBA dive tourism in Timor Leste. A field survey was conducted on 10 to 11<sup>th</sup> October of 2006, during a workshop in Dili. Participants of the workshop included a multi-disciplinary team from Australian Universities, together with government departments and research institutions from Australia and Timor Leste including: Northern Territory Government, Australian National University, MAFF–East Timor, James Cook University, Charles Darwin University and AIMS. The proposed of the workshop was to discuss and establish future actions and targets for the main project “Coastal and Marine Ecotourism on the North Coast of Timor Leste”. A SWOT analysis was also carried out to develop a better understanding of the issues linked to diving tourism in Timor Leste and its potential to assist in poverty alleviation and coral reef conservation. The SWOT analysis identified 17 strengths, 26 weaknesses, 22 opportunities and 21 threats. Strengths include; high biodiversity, fringing reefs that permit easy access from roads to the reefs and spectacular beaches. Weaknesses embrace; political instability, lack of human resources and lack of infrastructure. Opportunities involve; assistance from several international agencies, employment opportunities and lack of a dive center outside Dili, which therefore provides an opportunity to develop community-based dive tourism initiatives. Threats include; environmental damage, loss of culture and concentration of resources in a few sites.

Although Timor Leste has fabulous natural resources, rich socio-cultural values and a high potential for tourism, development of any kind of tourism in Timor Leste is a challenge, especially because of the security issues of this fledgling nation. The attainment of security and political stability and greater safety for tourists are considered to be the pre-requisites to any growth in tourism. Because unemployment and poverty are among the reasons for the lack of stability, tourism will almost not exist in such conditions, suggesting that the government should seriously consider ways of diversifying its economy. The improvement of tourism infrastructure and capacity building of local people are also vital factors for ensuring the development of a sustainable tourism industry in Timor Leste. Environmental sustainability is particularly important to Timor Leste, because most tourism opportunities are based on natural resources. If the weaknesses are addressed, tourism can bring benefits for the poor in Timor Leste, although careful planning is necessary to avoid the threats.

Governmental intervention is necessary to avoid ‘neo-colonialism’ through tourism, i.e. tourism controlled by large foreign companies, which limits the income flowing to the local community. Negative and positive impacts are likely to occur with the growth of the dive tourism industry. The maximization of benefits and minimization of negative impacts depends on the way that tourism is managed as well as on the capacity of the organizations, government and local communities to apply pro-poor strategies.

Appendix 3: Coastal-marine natural and cultural heritage sites along the north coast of Timor Leste.

