TIMORE LESTE
Programme of Work on Protected Areas

CAPACITY DEVELOPMENT ACTION PLAN
Part 2

for the Department of Protected Areas & National Parks

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Structure of the Capacity Development Action Plan (CDAP)

The CDAP document has been split into three (3) parts. Part 1 is the Situation Analysis and structured to set the context for the capacity needs assessment. Much of this was taken from the Situation Analysis Report generated from the first visit early in 2011 and enhanced in subsequent visits. This Part 2 then provides the actual Capacity Needs assessment summary and Capacity Development Action Plan (CDEP). The final Part 3 contains all the referred Annexes, including the detailed five (5) year budget for the SAP and capacity building work.

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ACRONYMS

AWG-LCA	Ad-hoc Working Group on Long-term Cooperative Action (UNFCCC)
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CHM	Clearing House Mechanism
CITES	Convention for International Trade of Endangered Species
COP	Conference of Parties
DPANP	Dept of Protected Areas and National Parks
GCRMN	Global Coral Reef Monitoring Network
GEF	Global Environment Facility
GIS	Geographic Information System
GoTL	Government of Timor Leste
GPS	Global Positioning System
IPCC	Intergovernmental Panel
IUCN	World Conservation Union
PAN	Protected Area Network
LBS	Land Based Sources
NBSAP	National Biodiversity Strategy and Action Plan
NGO	Non-governmental Organization
NOAA	National Oceanic and Atmospheric Administration
NP	National Park (i.e short reference for Nino Konis Santana National Park)
PA	Protected Area
POW	Programme of Work
PoWPA	Programme of Work on Protected Areas
PTA	Problem Tree Analysis
RA	Rapid Assessment (methods & approaches)
REDD (+)	Reducing Emissions from Deforestation and Degradation (plus)
TNC	The Nature Conservancy
UNCBD	United Nations Convention on Biodiversity
UNCCD	United Nations Convention to Combat Desertification and Deforestation
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
WWF	World Wildlife Fund

Executive Summary

Article 8 of the Convention on Biological Diversity (In-situ conservation) calls for the establishment of systems of protected areas to conserve biological diversity. It also includes many provisions regarding protected areas and their importance in implementing the broader objectives of the Convention.

Protected areas can carry out services and functions that are beneficial to humans, and other geo-physical systems that assist with community lifestyles, livelihoods and human welfare. The challenge for using protected areas in customary systems is to instigate protection areas in a manner that alleviates poverty pressures rather than becoming a further impediment to livelihoods and traditional land and resource management. The success of protected areas ultimately rests with the status of local socio-economic factors affecting communities in and around protected areas: sustainable resource use, food security, livelihood options, land tenure & conflict and equity in access and benefit sharing.

The value of protected areas is often poorly understood by governments, communities, the markets or people who may not live close to them but rely on protected areas in providing lifestyle pursuits. Often the only economic opportunity that is pursued with protected areas is the tourist dollar. There too are often pressures by multi-national companies for governments approve extractive activities within protected areas - whether for forestry or minerals. In the past it has been hard to quantify the economic, social, environmental and cultural values of protected areas making it hard to defend their retention against the economic rent that could be realized from extraction based land and resource use.

Even once nominated and made Protected Areas are subjected to many and ongoing threats and the pressures and these are not often monitored well.

There have been many definitions of Protected Areas, however the 1994 IUCN Protected Area Management Categories represent the international consensus about management types. However alternate types suited to customary use-hold and traditional communities should not be dismissed. Much has been written on the success of locally managed systems such as the Locally Managed Marine Areas (LMMAs) or the use of locally driven Marine Protected Areas (MPAs). There are also many 'tabu' systems active in the Pacific Islands for instance that provide solid protection regimes for sensitive areas.

There are well accepted environmental criteria and methods for the site selection of representative protected areas. These may include ecological (e.g. species richness, vulnerability, level of threats endemism, irreplaceability and evolutionary processes), geo-physical parameters (e.g. connectivity, corridors, size & dimensions of critical habitats and communities) and broader natural resource management matters. There is less consensus or criteria and methods to canvas the socioeconomic factors that need to be accounted and managed to ensure the success of protected areas.

In planning, establishing and managing protected areas, there is a need to have in mind interceding approaches including: focusing on conserving biodiversity at the ecosystem, landscape or regional scale; providing for ecological interconnectivity through corridors (i.e. considering scale, connectivity and resilience) but most importantly - involving the people element. That is, successful establishment and management of protected areas and networks require will require consideration of the communities interaction with their environment and their aspirations for the future. The land use/resource-use planners and economic decision-makers as well as community stakeholders need to be brought into the process at an early stage and be provided opportunities for effective participation.

Conventional ecological species approaches to the set-up of protected areas needs a paradigm shift towards more substantial participatory forms that respect customary processes and local knowledge

and systems of management. Social justice steeped in good local 'governance' capacity development should be at the forefront of protected area network planning, establishment and on-going management.

Given the above for Timor Leste there is a need to:-

(i) increase the involvement of indigenous and local communities in the work that leads to the nomination of prospect protected areas;

(ii) greater respect of the interaction between local communities with their environment and the role of local and traditional practices with regard to the formation, the types of protected areas and the determination of likely uses and activities that will continue in and surrounding protected areas;

(iii) recognize that local communities will have traditional approaches and practices worthy of retention even to the point of alternate classification than that offered by the IUCN system. There are growing number of examples in customary societies of community conservation areas from locally managed marine areas (LMMAs); local marine conservation areas; to Tabu or Tapu systems in Polynesian cultures.

For over five (5) years Timor Leste has been striving towards the ideal of effectively managing its protected areas. Though the ideal is still far from being achieved, efforts must be continuously made towards reaching this goal. Numerous attempts have been made to develop a Master Plan for the system of protected areas, with varying levels of success. There has been heavy focus on protected areas declared under terrestrial ecology knowledge, with little emphasis placed on those that are fisheries, forestry, heritage and culturally related. This report attempts to provide a more balanced view of the system of protected areas, using available information. Given the iterative nature of this process, it is expected that as information becomes available, the assessment and subsequent plans will be strengthened.

Much progress is evident in efforts at setting up and managing protected areas, despite poor consistent funding over the last 5-8 years. Overall the DPANP is still in the embryonic stages of protected area planning, establishment and management. There are still numerous gaps and constraints. Strengthening the capacity to manage protected areas over the next 5 years will help to provide the momentum for future successes. At the same time the critical funding needed to actually manage things on the ground needs to be addressed.

This Situation Analysis canvasses: the status of biodiverse areas; prior work on Protected Areas; the international best practices and good governance regimes; the current capacity of national institutions and processes; the socio-economic contexts behind current degradation; highlights the key pressures and threats and summarizes the key barriers and challenges. The associated Capacity Development Plan (Part 2) provides an assessment of protected area management capacity in terms of institutions, systems, technology and human resources; and outlines a plan for capacity development.

PART 1: Situation Analysis – Setting the Context

Section 1 provides the contextual setting for protected area management in Timor Leste, including a status of efforts to date.

Section 2 summarizes the key stakeholders involved in Protected Areas in Timor Leste.

Section 3 outlines the international good governance frameworks of which the SAP and Capacity Development Action Plan needs to be cognizant of.

Section 4 outlines the international environmental management frameworks of relevance to the SAP and Capacity Development Action Plan.

Section 5 describes the national institutional and policy frameworks.

Section 6 summarizes the socio-economic context behind Protected Areas management and degradation of forests and land systems;

Section 7 highlights the pressures, threats and vulnerabilities to the systems. Critical threats to Timor Leste's protected areas include: habitat conversion, deforestation, fragmentation, conversion from agriculture, unregulated harvesting, bushfire, poaching, invasive alien species, land degradation and climate change.

Section 8 summarizes the key barriers and challenges to Protected Areas management, while **Section 9** summarizes the findings of the Situation Analysis.

Part 2: Capacity Development Action Plan

Section 1 describes the capacity needs approach while **section 2** describes the methods used.

Section 3 addresses the Institutional capacity needs, **Section 4** the Systemic needs and human resource needs are covered in **sections 5 and 6**.

Section 7 introduces the Strategic Action Plan (SAP) as the strategic policy tool to harmonize and integrate actions for planning for, establishment and management of Protected Areas. Subsection 7.4 describes the financial plan (budget) for the implementation of the Strategic Action Areas over the next five (5) years.

The summary of findings and recommendations are provided in **Section 8**.

Annex 1 provides the Financial Plan - Log Frame Matrix. This is also incorporated in the packaged Annexes in Part 3.

A budget of **USD1,805,000** over five (5) years has been recommended for discreet capacity building activities. In addition it is forecast that a recurring budget of **$295,500.00** should be provided by the Government of Timor Leste for DPANP personnel and basic administration costs over the five (5) year period. The budget estimates are based on similar work in other countries and the experience of the DPANP and P4SD team, however it is completed so far without complete knowledge of other commensurate work that is planned or currently being implemented in-country or from regional bilateral and multilateral platforms. This budget equates to approximately **USD361,000** a year or approximately **USD180** per square kilometer of terrestrial area proposed to be included in Protected Areas. While this is at the lower end of the scale with regard to comparative funding of protected areas in developed and developing countries, there is a need to drastically improve the absorption capacity of the DPANP and collegiate entities over the short to medium term – before funding strategies are re-visited.

It is highly recommended that the budget be re-visited at the end of the second year of implementation, after assessment of the capacity of the DPANP and collegiate entities - so that necessary adjustments can be made.

THE CAPACITY DEVELOPMENT ACTION PLAN

1.0 Capacity Needs Assessment for Protected Areas Planning, Establishment and Management

1.1 Capacity Development Planning

Often capacity development assessment for protected areas incorporates an evaluation of management effectiveness of existing protected areas management. The WWF has a model referred to as the "Rapid Assessment and Prioritization of Protected Areas Management" which does provide some useful guidance for this type of work. It is a comprehensive systems approach which can be used to review programmes that have been well established. However given the status of Protected Areas planning and management in Timor Leste and the very embryonic stage of environmental and natural resource management planning and governance generally it was not of particular relevance in this work. Added to this there has been much capacity needs assessment through various initiatives since 2003 and particularly from 2006 in the work leading to the establishment of the NKSNP and the early implementation phases of PoWPA.

Assessing management effectiveness is desired by many: funders, policy makers and conservation lobbyists may want to use the results to highlight particular implementation and management problems and to reset priorities; government may want to promote better management policies and practices by its ; Managers may wish to use evaluation results from prior implementation (adaptive management); or to report on achievements to senior managers or external stakeholders (accountability); or local communities and other stakeholders may want to establish how far their interests are being taken into account (WWF).

Dudley and Stolton (2003) developed a guidance note on 'Minimum requirements for protected area management – focusing initially on Africa. There work has been followed up by more recent case studies and observations'. Their work identified six (6) priority requirements for institutional capacity development: legal designation; demarcation of PA boundaries; clear management objectives; operational plan; operational budget; and a monitoring plan. The authors work (and their follow up research) formed the basis of many advocated approaches to assess management effectiveness.

A less 'rigid' approach was used for this Component 4 (PoWPA) work, given present capacity and the volume of prior reporting. The tailored capacity assessment method used a three-fold approach:

1.1 A desk-top review of prior NKSNP, PoWPA and biodiversity related documentation including capacity needs evaluations;
2.1 The generation of issues analysis tables (based on desk-top outcomes) and enhancement as problem tree tablets using stakeholder interactive work;
3.1 On-line capacity needs surveys – in this instance completed interactively by the DPANP team.

1.2 Background to Capacity Development Planning in Timor Leste

Timor Leste, as a party to the Convention on Biological Diversity (CBD) is obligated to address protected areas management which may include the generation of a master plan. Many parties were to complete these by 2010, however given the special circumstances of Timor Leste this work has been delayed somewhat. With the interactive development of the Strategic Action Plan (SAP), preceded by the completion of the National Ecological Gap Assessment (NEGA) – this capacity needs assessment and its recommendations provides Timor Leste with the key ingredients to show satisfaction with UNCBD and PoWPA requirements. Prior to the latest round of PoWPA work the following gaps needed to be filled:

- Ecological gap analysis;
- Review of Management systems and human capacity development;

- Financial sustainability; and
- Advancement of Institutional structures and systems.

This capacity development needs assessment was undertaken in unison with the development of the Strategic Action Plan (SAP). There are obvious synergies in developing a strategic pathway for the advancement of protected areas management and understanding and addressing underlying capacity needs. The outcomes of this assessment support implementation of the actions identified in the five-year period SAP. Furthermore it has provided support to the generation of the National Biodiversity Strategy and Action Plan currently being developed by ASEAN.

Within this context, the findings of this assessment as well as all preceding DPANP documents and findings have been utilized to develop the capacity development action plan. The information that has been gleaned has been utilized to identify the level of sustainable finance required to implement the SAP and advance protected areas management in Timor Leste over the next five (5) years.

By tying the Strategic Action Plan development to the capacity needs assessment has meant that this strategic pathway document directly addresses the key threats, the pressures upon the ecosystems, management and institutional weaknesses and challenges of poor systems.

1.3 Objectives

The key objective for the capacity needs assessment was to identify the critical needs of the DPANP team in the first instance. The needs of the MAF, supporting agencies and community stakeholders – were also important to note as one cannot be enhanced without the other. The process was geared towards identify the critical needs over the next 5 years to ensure that momentum of a very embryonic system of protected areas establishment and management is enhanced to the point where ongoing capacity would prevail. There was a need for the work to progress interactively with the DPANP team so that concepts, understanding and context had a local flavor or suggestions and recommendations were plausible given the national and local situation.

1.4 Utility of the Results

It is expected that the process, methods and outcomes of this capacity needs assessment will provide useful understanding, tools and information for ongoing use by the DPANP team and others responsible for environmental and natural resource management. The whole DPANP were involved in the development of the issue evaluation tables and the enhancement as Problem Tree Analysis templates. This work coincided with training sessions on problem tree and solution tree analysis and policy goal and objective setting.

The on-line surveys design was based on earlier rapid rural appraisal sessions covering institutions, human and systems capacity reviews.

1.5 Underlying principles in protected area management

The UNCBD, the WWF, and The Nature Conservancy (TNC) process guides for PoWPA related activities all include guides on establishing principles for management.

One of the best reference sets of protected areas management would be that often canvassed by the WWF. Below is a compendium of key principles and core philosophies related to capacity development:

1. Assessment systems should be as *participatory* as possible and stakeholders should also be involved in the process as early as possible.
2. Assessment should be based upon a *transparent, comprehensible* and *accessible* system.

3. Assessment of inputs, processes, outputs and outcomes all contribute to an overall evaluation of management.
4. Indicators should wherever possible cover biology, geography, social and cultural issues, economics, management, information and policy.
5. When assessment exercises are not able to address all of the possible factors and indicator types, the limitations should be clearly stated in assessment reports.
6. The system should show *progress* over time through periodic assessments.
7. Assessments of management effectiveness should focus on the most important issues – including threats and opportunities – affecting the achievement of the management *objectives*, which in turn must be clearly defined and understood by the managers and the assessment team.
8. In reporting on assessment, issues should be divided between those that are within and outside the manager's control.
9. Assessment should collect data that allow *prioritization* of conservation effort. Clear recommendations for management improvement should be a feature of all assessments.
10. Assessments should be based on sound and appropriate *ecological* and *social* science.
11. Assessment is likely to include both quantitative and qualitative information.

1.6 Capacity Development Elements

The capacity development elements that are included in the approach are consistent with the UNDP 'Default' Capacity Assessment Framework that had its origins in the GEF Capacity Development Initiative (CDI) of 2000, which in itself was the pre-cursor to the NCSA Initiative.

Human resource capacity development was to be the focus of this Component 4 work as determined by the Terms of Reference (TORs). The experience, training, skills and knowledge of the human resources of the DPANP is the central focus of this evaluation. **Institutional capacity** is a secondary but important facet in determining the minimum needs for protected areas management. It should cover the infrastructure of government, key laws and policy, institutional/organizational design & structure, and inter-institutional collaboration. **Systemic or Societal capacities** include the systems that are outside the area of focus but essential for the other elements to operate. This may include laws, policies, best practices, databases and information exchange systems, incentives, regulations, civil society engagement processes, and public awareness and stewardship).

The interactive process undertaken involved the identification of the key capacity needs, followed by determination of measurable objectives and practical actions. These were then captured in the SAP.

2.0 Capacity Needs Assessment Methodology

2.1 The Approach

As mentioned in section 1.1 multiple methods were employed to successfully meet the objective of this evaluation. The assessment was undertaken using a series of steps to allow for incorporation of all available information, additional information gleaned from the interactive workshops with the DPANP team as well as data made available from other stakeholders. **Figure 1** below charts the processes used for the assessment and SAP planning activity.

For the rapid appraisal tables and enhancement as Problem Tree templates a State-Pressure-Impact-Response method of review was used to glean information.

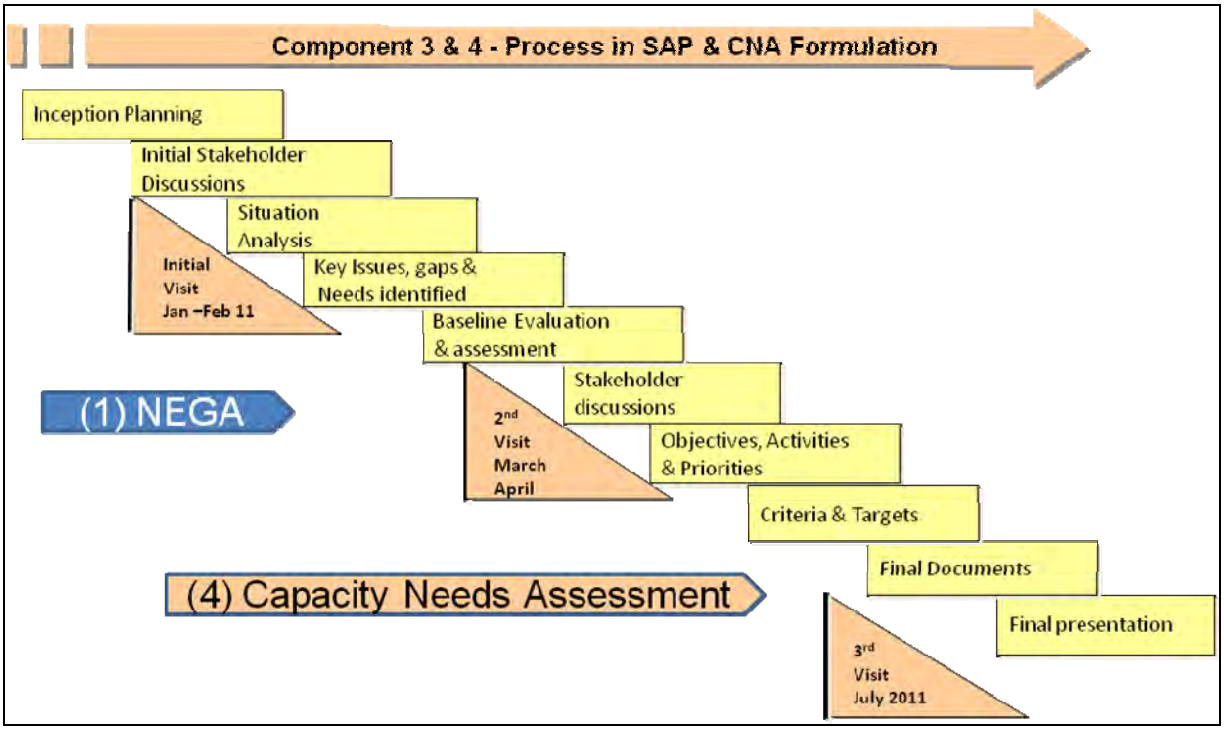


Figure 1: Process for the integrated development of the SAP and Capacity Needs Assessment

2.2 Rapid Assessment – Problem Tree Analysis

The work for Component 3 (Strategic Action Plan) and Component 4 (Human Capacity Development Plan) were completed in unison as the Project Manager agreed that one could not precede the other under the PoWPA processes planned for Timor Leste. A Situation Analysis was developed early in the engagement to capture the context and main messages that had been canvassed over many years. As mentioned, Issue analysis tables were used with the DPANP team to agree on key issues, pressures and impacts – many of which had been reported on previously. A Rapid appraisal approach was originally undertaken using Powerpoint summaries and interactive workshops to note and link issues and pressures. The initial outputs were then captured within a Problem Tree Analysis template designed by Planning 4 Sustainable Development. Two templates were created: one for Institutional matters; the other on Thematic issues.

This uncomplicated approach was preferred over the more complex and comprehensive approaches that are common with reviews of established protected areas systems and biodiversity conservation assessments. It offered more first-hand experience and understanding reflective of the status of the protected areas programme in Timor Leste and the experience of the managers within DPANP. The Project Manager at DPANP (Mr Manuel Mendes) was adamant that all outputs should be that of the DPANP team. This is a commendable ethos as it also meant there was greater ownership of both the process, outputs and eventual outcomes.

Once the Protected Areas network and system is well established in the medium to longer term more comprehensive approaches may need to be called into play. At this juncture the experience of the DPANP team project managers should be such that more advanced project management skills can be developed. The WWF's Rapid Assessment and Prioritization of Protected Areas Management (RAPPAM) methodology is one approach that could be canvassed at that time. This would provide an overview of the effectiveness of protected area management, against the barriers and constraints versus the threats, vulnerabilities and degradation being addressed.

The rapid assessment method chosen, while being more informing to the participant was not designed to provide detailed information about management responses suited to protected areas or prospect conservation outcomes. The use of this form of basic rapid assessment and Problem Tree Analysis method is a relatively quick and easy method to identify and agree on major threats, pressures, constraints and barriers. It also enables the participants to agree on past and present responses and the gaps that still exist in order to discuss and debate the best interventions for the immediate future.

The final outcomes of the Problem Tree Analysis were captured in two Templates, one canvassing Institutional matters, the other the key Thematic Issues. The final Problem Tree Analysis templates are contained in **Annex 2** and **3** of **Part 3.**

2.3 DPANP Interactive Workshops

During the three visits to Timor Leste much of the work was undertaken directly by the DPANP team by way of explanatory presentations of theories, approaches and methods, and follow-up work-shopping of ideas, verification and consensus.

Early in the process through the initial rapid appraisal discussions, and confirmed by desk-top review of past capacity evaluations, it was evident that the structure of the DPANP closely aligned with the package of issues, concerns, threats and institutional weaknesses being espoused. The team was more comfortable in discussing present situations based on their separate work areas but team discussions were encouraged as a means to gain cross-division consensus.

There were some delays in progress due to power outages as the interactive nature of the work required on-going use of powerpoint presentations and tables for direct input.

2.4 Stakeholder Meetings

During the course of the three visits to Timor Leste a number of individual stakeholder meetings were held with MAF, other Government agencies, the UNDP, Project coordinators, NGOs and the National University of Timor Leste(NUTL). The participants included protected area site managers, NRM project managers, policy makers, agency representatives and others.

2.5 Capacity Development Surveys

A series of on-line capacity needs surveys were designed and made available to the participants. The on-line surveys canvassed institutional weaknesses, information development and management and various human resource development arenas. The following lists the surveys with their hyperlinks.

GIS development:	http://www.surveymonkey.com/s/BYKV7XV
Project Managers:	http://www.surveymonkey.com/s/DMV66KY
NRM Officers:	http://www.surveymonkey.com/s/D38CRQJ
Socio-Economics – General:	http://www.surveymonkey.com/s/YKC36M5
Policy, Planning & Enforcement:	http://www.surveymonkey.com/s/QGVXQ6V
Natural Tourism & Rec Livelihoods:	http://www.surveymonkey.com/s/3VXKVJ3
Education & Awareness:	http://www.surveymonkey.com/s/377BP5X

Given the poor internet access and power outages during many of the visits, the DPANP team decided to complete the surveys in group sessions. This was consistent with the interactive nature of developing the Problem Tree Analysis templates. It enabled consensus and much discussion on needs and priorities.

A copy of each of the on-line surveys is provided at **Annex 4** to **Part 3.**

2.6 Multi-Stakeholder Presentation

Toward the end of Visit 3 (21 July 2011) a multi-stakeholder meeting was held jointly with the Department of Environment and ASEAN consulting team – engaged to develop the National Biodiversity Strategic Action Plan (still in development).

At this forum the final draft of the Strategic Action Plan (SAP) was presented along with a summary of process and actions. The Capacity Needs Assessment (Component 4) work and the linkages to the SAP development were also discussed. Feedback was provided by the stakeholders. From the outset and prior to this meeting the Planning 4 Sustainable Development team exchanged information with the NBSAP team to ensure the synergies between the PoWPA outputs and the NBSAP were strong.

A list of participants at this Multi-stakeholder meeting is provided at **Annex 5** of **Part 3**.

2.7 Strengths and weaknesses of the process

Poor internet access and power outages were disruptive during the three (3) visits to Timor Leste. The impact was particularly felt as the work progressed in an interactive manner, which required on-going power. The down-times were used to hold individual stakeholder meetings.

The interactive nature of working closely with the DPANP team meant that time budgets (as proposed) were severely strained and this has lead to delays in final production. In short more than 3 times the expected time frames for stakeholder engagement were used in the information gathering and consensus.

The on-line surveys were designed for individual completion. The on-line mechanism was organized to enable analysis of individual inputs to determine key priorities with regard to human resource development needs. The interactive group completion of the surveys has meant that the results were slightly skewed. The ability to reach consensus among the team, however, has increased the ownership of the results and given greater understanding of individual team members of the key constraints and needs in the other work areas.

While there were some notable limitations to the process there was also much strength in the interactive nature of the work and the tying of the SAP development with the Capacity Needs Assessment:

1. The use of Problem Tree Analysis tools varied among participants, however the ability to explain concepts and give examples while the tools were completed interactively meant that all the participants generally embraced the process and the outputs. Participants were very devoted to the discussions and the completion of the templates.
2. Participants found the forums as very useful to revisit prior documentation of issues and to verify the real on-the-ground issues from their perspectives.
3. The interactive nature of workshop forums also provided a medium for the protected area team to work together toward common goals.
4. The interactive inputs and ability to re-visit matters continuously did result in a quick and plausible transfer of information in the Problem Tree Templates to the SAP, including consensus on Key Goals and Objectives for the strategic action areas.

The next sections discuss the wide-ranging results and findings from workshops, surveys and research in terms of Institutional, Systemic (or societal) and Human Resource capacity elements.

3.0 Institutional Capacity for Protected Areas

From the outset many of the stakeholders identified consistent institutional capacity shortfalls, namely: inadequate legal frameworks for PA planning, establishment and management; sustainable financing; lack of coordination across government; enforcement capacity; inadequate public education and awareness. These are all important aspects that need to be effectively addressed.

The following observations are made covering the key messages delivered with regard to institutional capacity and development needs for environmental management in general.

3.1 Institutional weaknesses -Generally

The makeup of government in terms of institutional structure, roles and responsibilities is reasonable. The fallback seems mainly in the coordination mechanisms across government and especially between the various agencies with environmental as well as resource use roles and responsibilities. As expected in a relative new nation there is much more work to do in cascading environmental governance and natural resources management from the national, regional, Suco, village and and community levels. Even at the whole of government level there are embryonic actions to balance national governance with local authority governance through the Sucos or village Councils.

With the dominance of economic development agencies and programmes the Environment continues to be marginalized in many respects. Again it is no surprise that with a new nation emerging from periods of conflict there is focus on economic development and social cohesion. Development agencies and entities often have limited realization of the impact of natural resource decline on economic and social stability. Weaknesses in governance are typified by poor vertical and horizontal linkages, the dominance of a centralist system and the large gaps between state level economic policies and plans with the frustrations experienced at the local level.

3.2 Political will and good governance.

Faced with a compendium of constraints and barriers, with complex and ongoing pressures on poverty alleviation, often countries coming out of conflict scenarios, as mentioned, often maintain a dominance of economic development policy in lieu of sustainable environmental policy. The long-term visioning that is required for biodiversity conservation is often therefore outside the political dimensions of the government. Environmental sustainability is often still seen to impede sustainable economic growth, and is commonly watered down as a cross-cutting issue for consideration, after economic and social matters are decided.

Marketing the benefits of ecological sustainable development and medium to long term advantages for economic development and social wellbeing across government, is as critical as enhancing the awareness of communities. Performance and coordinated action are the keys to enhancing political will, as advocates will require efficient outcomes and outputs to convince their colleagues of the benefits that will accrue.

3.3 Institutional Collaboration

Collaboration among government agencies, NGOs, development assistance agencies and community groups is important for protected area management. Lack of coordination has been identified by the DPANP and others as a key challenge for further progress. There are cross-agency linkages that exist, but these need further strengthening.

The SAP by providing a more encompassing strategy will assist with efforts in coordinating efforts. Strategic goals include actions to enhance coordination mechanisms. Various agencies, organizations, development agencies, community groups and individuals were identified as key collaborators for protected areas management. The specific needs that could benefit from partnerships are: technical assistance and training, as well as research & collaborative agreements with academic/research

institutions. The terms and conditions of any collaborative agreement must ensure that key agencies responsible for protected areas management receive copies of all data, information and research products in a form that assists with coordinated aggregation. This has been identified as a problem in the past, where research has been based on particular parts of protected areas or focuses on particular aspects of biodiversity conservation and protected area management.

The results of data collection, evaluation and research can help to strengthen management and longer term decision making, so it is important for any arrangements or agreement to promote a win/win situation for responsible government agencies, NGOs, the communities affected and the researchers. The DPANP awareness and education position could on the role of facilitating collaborative partnerships between government entities, NGOs, development assistances agencies and communities involved in PA management.

3.4 Legislative and Policy Frameworks

The Legal and Policy frameworks for PAs are recognized to be very limited, and it is well recognized that Regulation 19/2000 needs to be upgraded to a fuller legislative framework for protected areas planning, establishment and management.

In terms of policy, much useful research and policy evaluation type work has been accomplished but without a strategic framework this has been disjointed, project orientated or the outcomes have had disparate application. Some of this is due to institutional weaknesses or human and financial resource constraints. With 'silo' type work done by specific projects under MEAs there is often little focus and therefore limited understanding of the fill ambit of the causal pressures for environmental stresses upon ecological systems. Often responses are forwarded without evaluation of the implications for social and economic stability.

While Regulation 19/2000 enables the government to nominate additional wild protection areas, the legislative framework falls far short of the laws usually needed for Protected Areas. There is a need for an overhaul of the laws with regard to planning for, the establishment and ongoing management of PAs. The laws and regulations need to contend with the land use and activity rights of communities within the PAs, as well as providing the means for future land use in additional to conservation planning for PAs. Legislative platforms should also reinforce administrative roles of the responsible government agencies, provide mechanisms for public review of plans and processes, enable adequate enforcement and incentives, provide means for arbitration, including alternate dispute mechanisms and cause the aggregation and sharing of information.

Lack of integrated land use planning outside of normal economic planning processes, stifles the prospects to look for development 'opportunity' in a manner that coincides with good environmental outcomes under current land management mechanisms. There is a dominance of research and policy development at the national level led by economists, political advisers and development assistance agencies, rather than the instituting of comprehensive systems to link national governance with local implementation.

Recommended Actions

With the review of current legislation for PAs there are a number of particular management mechanisms that would also need to be picked up in the legislative provisions:

- Legal designation and the creation of protected areas in Timor Leste: processes for designation and creation should be covered by relevant provisions;
- Classification of various Protected Areas: while a policy choice rather than legal designation, legal provisions will need to be included that provide a process for the identification of classification 'alternatives'. A process is needed for the determination of the appropriate classification of each of the PAs. Regulations may spell out the criteria that has been developed to be used to determine the most suitable classification, and may encourage multiple classifications for some PAs;

- Boundary demarcation: there is a process that is used for demarcation and this seems to be relatively effective in terms of reaching consensus. However each demarcation process takes up to one year to complete. With 30 prospect PAs, a revised system and process of demarcation is needed. Whatever is decided the demarcation process needs to be picked up in provisions of the legal platforms;
- The legal provisions should encapsulate the need for strategic assessments before management plans are put in place. Primarily they should instil the need to conduct socio-economic analysis of the local communities, their needs and existing community practices, and the application of traditional law of *tara bandu* in the locality. The process should require an evaluation of the effectiveness of intended environment protections and conservation measures, the means to implement using local governance structures and the integration of measures with traditional systems and practices;
- Legal provisions should require the analysis of the existing legal frameworks, including existing local government / Suco/ village practices related to land use, development, sustainable land management and biodiversity conservation. The outcomes should affect the make up, structure and implementation mechanism of the Environmental Management Plans (EMPs) for the PAs. This work should refine agreed matters to be implemented at the local level with those matters that need to be reinforced with national actions including enforcement;
- Legal provisions should enable the government and communities to adopt certain policies, guidelines and practices related to occupation, continued use, land management and biodiversity conservation within or surrounding PAs.

Generating workable legislative frameworks particular to PAs, will require advancement of conducive and broader legislation for environmental management and sustainability. Some of these include improved legislative platforms to enable:

- The adoption of appropriate land use policy and planning systems for TL;
- The generation of agriculture land protection laws or regulations;
- The adoption of suitable soil conservation laws or regulations;
- The generation of a national water management policy;
- Laws and/ regulations to protect lands yet unaffected by degradation and of high potential use for rural development;
- Laws, regulation or policies to introduce early warning systems, that enable regular monitoring and evaluation of development activities related to the use and management of land, versus the status ecosystems (often encapsulated in State of the Environment M&E systems).
- The adoption of a national environment strategy and/or action plan which targets biodiversity conservation as a key ingredient to the country's sustainable economic development.

3.5 Environmental Policy and Land Use

Timor Leste since independence has been successful in developing a number of social, economic and environmental sector and thematic policies, and adhering to reporting responsibilities determined by international conventions and agreements. While there are achievements in policy coordination during the generation phases of these policies and plans – often there are implementation and operational difficulties.

For the policies and plans centring on land management, environmental conservation and development – often the shortcoming are: the lack of longer term implementation mechanisms, lack of financial resources, limited HRD, the lack of an integrated land use policy, or separate EIA provisions that are disconnected to land use or development approval processes. This is a pertinent matter as many of the implementing objectives of the key MEAs for instance advocate the need for integrated planning systems and use of EIA. The effect often is 'silo' implementation of similar concepts across programmes of climate change, land degradation, biodiversity and coastal management etc.

Essentially the problem lies in a lack of systems approach to development assessment, land use planning and natural resource management. For the pursuit of sustainable development outcomes there needs to be synergy among national & between national and local level governance. These linkages should involve: data and information, administrative and fiscal processes, laws and policies, institutional structures, accountabilities, technological know-how, decision-making and responsibilities. Often the barriers are: a lack of suitable information, profusion of laws, 'silo' based policy formulation, spasmodic fiscal processes and lack of empowerment of the grass-roots level of governance e.g. regions and local village councils.

Where the systems approach to governance is not pursued, governance is often dominated by politics of the day, with decisions based on sectoral activity and directions given without clear understanding of cumulative impacts and the need to maintain long-term goals or objectives.

Pilot projects that explore the benefits of instigating integrated NRM and land use planning systems or at least the development of an integrated land use policy to address policy and administration synergies would be opportune. The outputs may give the government a usual reference point to reform or crystallize some of the governance linkages between the national and local village levels. If successful the empowerment of and capacity development of local village level governance – will do much to fill current voids in systems approaches to good governance.

Recommended Actions

- Regional programmes and projects should assist the Government of Timor Leste distil the common capacity building elements of Policies and Strategies promulgated by international governance which relate to biodiversity conservation, land use planning, sustainable land management, environmental protection and management, and economic development;
- Many of the separate 'silo' based policy from UNFCCC, UNCCD, UNCBD and other MEAs should be reviewed in time to maximise cross-sector implementation mechanisms inclusive of EIA, SEA and integrated land use planning & NRM;
- MEA work should identify implementation objectives which require consistent land use planning platforms incorporating both project based EIA and SEA processes – to assist with implementation in a coordinated fashion.
- Environment and NRM agencies should form and/or integrate policy platforms or their specific implementation provisions to coordinate efforts with data management, governance linkages, institutional structures, technological development, & decision-support systems, All these arenas will be important in promulgating integrated NRM, assessment and land use planning processes;
- Where legislative platforms do not exist, the development of land use planning policy, incorporating the role of EIA and SEA approaches – to assist with the guiding of development, as well as provide opportunities to improve governance linkages between the national level and local village levels.

3.6 Land use planning and Land Management:

There is an absence of effective mechanisms for linking and integrating traditional customary land management, practices and governance, with the western styled investment and land tenure systems**.** Integrated planning tied to land management systems ***that encourage certainty, confidence and security of tenure – but are balanced with the protection of customary systems –*** would be a worthwhile pursuit. A mismatch of systems often leads to the exclusion of traditional resource users from meaningful dialogue, thereby limiting their involvement in planning or development decision-making. It also reduces their ability to influence the flow of benefits to their communities (often involving development that is dependent on the use of the natural resources used by communities for their sustenance).

Without a land use planning policy or system running parallel to land administration management, there is limited ability to contend with conflicts that invariably arise in natural resource management

and development processes. Where there continues to be confusion between policy, between national and local endeavors - even usual use and activities at the local level are bogged down in contention and conflict. Where opportunity areas are not 'visible' the whole scenario becomes a huge barrier to sustainable economic and ecologically sustainable development.

Recommended Actions

The DPANP should work with other MAF agencies, the Department of Environment and other economic development agencies to advance national and sub-national land use planning. The model of integrated land use planning that is to be pursued will need careful consideration. Urban development models typified by UK based 'town planning' principles may not be suited to Timor Leste. Contemporary systems that integrate natural resource management with sustainable economic and social development should be investigated. A system that cascades roles and responsibilities from the national to village level is needed. It should be able to meld traditional decision-making processes like tara bandu, and reinforce measures for guiding development and minimizing impacts, where they are beyond the local governance systems.

3.7 Instituting Environmental Impact Assessment

Much conversation between and with the stakeholders in this capacity assessment centred on the need to reduce impacts on existing and new PAs from infrastructure development, intensification of commercial uses and development projects generally. It is observed that PA management will need to contend with land use planning input as communities live within many of the PAs. Hand in hand with this will be a need for DPANP to address impact assessment for future development and uses within sensitive environs. There is a human resource development element to this however firstly the institutional gaps will need to be addressed.

There would seem to be low capacity to institute Environmental Impact Assessment (whether project based or strategic) generally in Timor Leste. As with many SIDS trying to institute EIA through standalone laws and regulations often leads to the process being marginalized. EIA and SEA processes should be linked to broader land use and economic development planning. Without an institutional and legal base for land use policy or a planning system there will often be a failure to incorporate impact assessment efficiently into development decision-making.

Development or the progressing of EIA and SEA approaches are often constrained by a lack of coordinated legislation to guide land use, land development processes and natural resource management. Where legislation is in place, effective implementation is limited by lack of linkages between laws, lack of financial and human resources or a lack of technical know-how. Adding to this there is often a continuing conflict between formal legislation and customary principles.

Many SIDS have a history of centralized legal frameworks often spurred on by foreign models and advocacy, or inherited from colonial periods. Like in developed countries models which are focussed on bottom-up approaches to strategic land use planning and development should be encouraged.

Where no environmental assessment or land use planning law bases exist (or where they are defunct) reviews should be made of existing environmental protection, resource use, natural resource management and 'sanitary' platforms. This review should explore institutional, policy and administrative options to link outcomes of each and to insert a means for early environmental assessment processes in project development pipelines.

As with most SIDS, including those that are relatively advanced, there are concerns with the lack of reference material available to guide government agencies, community groups and consultants involved in the production of EIA and planning assessments. Expertise and reference materials are needed to assist with developing adequate terms of reference (TORs), to assess EIAs against TORs or advise on methods and approaches to assessments.

Recommended Actions

- A review of legislative models that incorporate SEA, integrated land use planning and EIA should be undertaken, with examples and explanatory materials being made available to the DPANP but also other parts of MAF and the Department of Environment;
- A review of national based environment and development related laws should be undertaken to:
    - Consider the conflicts between laws and options to address these;
    - Explore options to improve linkages with local village or Suco level governance of land use and resources in the implementation of the laws;
    - Explore options to instigate early triggering of impact assessments in the development approval process [these may entail suggesting amendments to legislation, or implementation through policy options];
    - Assist national agencies and local communities instigate licensing, community mapping or incentive based systems to assist in minimizing impacts and affecting the location of development projects.
- Encourage the use of environmental management plans (EMPs), other than in PAs to affect follow-up to EIA and land use planning decisions, to:
    - Improve performance, compliance and enforcement;
    - Assist the transfer of responsibility to the proponent through self monitoring;
    - Provide a role for NGOs in community monitoring of performance.
- Encourage and support pilot projects and local case studies that can provide good lessons or choices in legal platforms to advance EIA, SEA and integrated land use planning.
- Collect, aggregate and avail reference and guiding materials on good EIA and SEA practices, methods and administrative systems. The range of materials should include information on:-
    - Ecosystem services and function approaches;
    - use of natural resource economics in assessments;
    - use of multiple criteria and objective assessment techniques;
    - land & watershed capability and suitability assessments;
    - integrated coastal & watershed management;
    - social and cultural impact assessment techniques;
    - environmental audits and use of environmental management plans (EMPs)
    - developing EMS systems (ISO 14001)
    - environmental checklists, quality criteria and performance targets

3.8 Clear protected area objectives and strategic management activities

To date, given that the Strategic Action Plan (SAP) is in final draft form, the DPANP has been reliant on Annual Action Plans generated under the corporate administrative processes of MAP to steer its annual work plans. The latest of these was reported on by the DPANP in its *Programme Implementation Report*, 2010. These planned actions in the past few years have been severely hampered by lack of government and external resources necessary for their full implementation.

The SAP provides a more strategic direction for DPANP, with a broader vision to increase coordination among government agencies, NGOs and local communities. It provides clear goals and mid-term objectives, backed up by Strategic Action Areas to be addressed over the next five (5) years.

Section 7.1 should be referred as it provides a summary of the SAP.

3.9 PA boundary demarcation

There is a workable process for PA boundary demarcation that has been used by DPANP, with relevant agencies and the communities involved. The process and methods however are not well supported in laws and regulations, or policy that may be agreed from such a framework. A revised PA legislation should incorporate provisions to address this shortcoming.

A significant shortcoming of the existing process to date has been the time required to reach agreements and to demarcate boundaries. It is advised that the current process takes a minimum of one (1) for each PA. This is not a workable scenario given that there are 30 protected areas that require some type of management regime.

The SAP argues the need to research and apply criteria for PA classification that may or may not follow the IUCN classification guidelines. A harmonized system of PAs incorporating IUCN categories either separately or conjunctively with other classification types such as MPAs and Locally Managed Marine Areas may result in criteria that would assist the time needed for boundary demarcation. For instance some of the PAs may be on very steep areas that are inaccessible generally, and the need for absolute demarcation on the ground may not be required. Use of suitable criteria may first deem such PAs as lower in priority for boundary demarcation, and/or that absolute demarcation would be superfluous to good management regimes being implemented. A customary practice in the Pacific may be of worthy note (See Box 1).

Box 1: Tapu & fonos for Biodiversity Protection (McIntyre, M. 2000)
In Niue tapu systems, with a hierarchy of importance is overseen by the village elders. They have been found to offer some of the best protection mechanisms for forest conservation. They are an essential component of village and local community custom, superstitions and traditional practices. Elders have resisted western advocacies to map or demarcate these areas. All community members from an early age are indoctrinated with knowledge of these areas, their rough location and their benefits. Only the elders are aware of their definite location but seem to have an uncanny ability to know when these areas have been wrongly trespassed upon. Where lower hierarchy tapus have been mapped in the past, they have witnessed their eventual demise through edge effect, ad-hoc access by foreign 'researchers' and invasive alien species.

For the higher level tapus the elders have effectively created a 'fuzzy mapping' approach to forest and biodiversity protection. As many in the community do not know the exact location they tend to steer away from the tapu areas if they feel they are venturing too close (there are very strong community penalties for willfully encroaching into or onto tapus). There is not the concentration of activity along the boundaries, often the cause for edge affect and associated impacts. Tapus are often backed up with fonos which are more temporal and flexible protection systems applied to marine or terrestrial areas because of death, degradation or overconsumption.

The strength of the tapu and fono systems is reliant on the continuing strong respect for elders and customary practices. Where customary and traditional practices have been usurped by colonial powers or foreigners there are evidence of total breakdown in tapu protection mechanisms. Elders in Niue reported on the unintentional impact on the successful workings of tapus with the introduction of national based environmental laws. National based adjudication of multiple laws and regulations eventually affects the respect of the role and purpose of the village elders, negating the traditional mystic with tapus and furthering the tendency of younger generations to ignore customary practices.

3.10 Financial Resources

Inadequate financial support is the immediate barrier affecting the implementation of the SAP. The challenge is to secure adequate in core operational funds from internal government sources, but also to garnish appropriate external funding. There has been a focus by development agencies to fund NGO projects and while this formative work is beneficial there also needs to be support for DPANP to coordinate activities and undertake field work to ensure broader PA implementation.
The SAP provides a cohesive strategy for improved coordination, the linking of outputs and outcomes which should assist in garnering support for protected areas. Adding to this, it is important for DPANP

and other relevant agencies to promote successes to the broader government decision makers in a manner that they can see that protected areas contributes to the nation's sustainable development.

The SAP also provides the framework upon which a sustainable financing plan can be implemented. This is itself will assist with coordination across government, with and between NGOs and the communities that are involved.

Most of the DPANP team are clear on what they need to do to enhance the implementation of the PAs network, however for years this positive attitude has been affected by the poor financial status and support for their activities.

One of the strategic purposes of the SAP was to identify and confirm key goals and objectives that promote integrative efforts to maximize the value of any resources received. The intent was to bring to demise the silo pattern of funding of disparate activities – even though these were always well intended. Without a 'big picture' plan the DPANP and MAF were not able to present a complete package of needs with the respectful substantiation needed to attract financial and other resources (whether from government sources or external assistance agencies).

The SAP now provides a comprehensive estimate of resources required for the implementation of the 5 year Strategic Actions. **Annex 1** to this report provides further details to the budget lines outlined in the Log Frame Matrix of the SAP. This log frame is also incorporated as **Annex 9** to **Part 3** - Annexes

The extension of the sustainable financial resources matter beyond the DPANP and government is the instituting of mechanisms that enable communities to provide themselves with adequate economic rent from protected areas management and sustainable alternative livelihoods. Chief among the prospects for Timor Leste is the opportunities from carbon sequestration initiatives and the progress of the REDD+ at the international, regional and national levels. The next section provides specific coverage of the needs for Timor Leste with regard to REDD+.

3.11 Carbon Mapping & REDD+

Becoming involved in carbon sequestration initiatives including the much touted REDD+ initiative may open up opportunities for sustainable economic returns for communities and government. However there is a need for much institutional, systems and human resource capacity development if these opportunities are to be addressed rationally.

This work could focus on the 'formal' processes that are being opened up under the Bali Action Plan (UNFCCC, 2007) as a add-on to the Kyoto Protocol with the aim for institution under any post 2012 climate treaty (given the Kyoto's demise in 2012). Otherwise Timor Leste could take advantage of the growing international voluntary carbon forest initiatives lead by the VCA, the CCBA and Plan Vivo among others. Some formal emerging trading systems at national levels recognize the methods for carbon accounting that have been developed under these voluntary systems.

The NEGA indicates that the 30 nominated Protected Areas accommodates 22% of the country's total carbon (landscape –above ground biomass carbon). However this finding was based on the very course global assessment by Ruesch and Gibbs, 2008 (among others) for the IPCC. It is not an acceptable source for national and sub-national planning for REDD+ but given the lack of alternative sources was adequate for the NEGA in 2010. There should be priority focus (and capacity development) therefore on improving landcover and landscape analysis work to define the carbon stock for Timor Leste - especially that which can be managed through protected areas. This should be the focus of DPANP work with regard to carbon initiatives and prospect economic benefits for protected areas communities. Biological surveys, community mapping and landscape analysis required for improved protected areas management, will also provide good baselines for carbon sequestration accounting in the medium to longer-term.

For the country's formal inclusion in longer-term international carbon initiatives recent international agreements should guide the work of other parts of the GoTL. From the 13th Conference of the Parties to the UNFCCC (COP-13) came the Bali Action Plan which included acceptance of REDD for post-Kyoto climate agreements due mainly from advocacies of the Coalition for Rainforest Nations (CfRN). From this the Accra AWG-LCA (2008) meeting saw an innovative three-step approach as a way forward for REDD negotiations. This again came from formative work by the CfRN, which proposed a step-wise approach to REDD which should be canvassed by Timor Leste:

- Category I: Readiness & Capacity Building: voluntary actions including scientific analysis, research, capacity building & policy development. It is recognized that developing countries will need to undertake institutional reviews to accommodate REDD to ensure cooperative stakeholder engagement. Internal financing mechanisms will need to be explored at the national and national-local levels – to ensure benefits are accrued in an equitable manner at the community level. Research on the most practical and efficient means of 'monitoring, verification and reporting' will most likely need to be refined, as data gaps and baselines are addressed efficiently. The Accra meeting suggested that this work should be financed through new and additional official development assistance (ODA) and from revenues from AAUs from Annex 1 countries (Kyoto Protocol). Many demonstration activities are ongoing in SE Asia and Timor Leste would be best to stimulate similar actions.
- Category II: Expanding Implementation: this second stage envisages the scaling up of demonstration activities (national, sub-national, district, local and project levels), again financed from Annex 1 countries and auction of AAUs and/or carbon taxes within Annex 1 countries. The rules dictate that incentives need to be applied ex-post, meaning that developing countries will be compensated only after real tangible reductions are achieved. This may provide a burdensome impost of many countries like Timor Leste where capacity is currently very low and the effectiveness of Category I finance cannot be guaranteed. This phase would likely see the fruition of policy analysis and institutional reviews for broader application and implementation of policies and strategies across the country harmonized and tailored to respective capabilities and circumstances. The application of IPCC methodologies is recommended, namely the use of the 2003 IPCC GPGs (Good Practice Guidance) for Land Use, Land Use Change and Forestry (LULUCF). GPG-LULUCF provides methods and good practice guidance for estimating, measuring, monitoring and reporting on carbon stock changes and greenhouse gas emissions from LULUCF activities. While it is accepted that full implementation of these may wait till the next phase, work should address matters such as sub-national leakage, carbon baselines and national accounting. The process recognizes that there will need to be nurtured trade-offs between national monitoring and accounting and successful sub-national take up and implementation. Demonstration activities of the first phase should progress toward pilots in voluntary trading platforms and market access – with equity in access and benefit sharing as the cornerstones to community acceptance.
- Category III: Monitoring, Reporting and Verification, Emissions reductions through Market Mechanisms: The movement to this phase recognizes that institutional and systems development is at a stage where emission reduction units can be adequately substantiated through developed and accepted MRV systems where the units are fungible via a market mechanism. The REDD system should enable equitable participation of the community as well as with global carbon markets. Countries that reach this stage may include the following features in their REDD systems:
    - Fungible emission reduction units agreed under a national reference emission level that are measurable, reportable and verifiable;
    - Credit systems for Early Action: actions before 2012 able to be accounted in any new Climate treaty;

- Price Floor established to ensure broad participation and to protect the livelihoods of rural and indigenous communities;
- National Trust Accounts set up to improve participation by domestic stakeholders among others. These would need to be managed by independently governed trust arrangements;
- Reserve Accounts established to enable periodic buffer adjustments etc;
- End of Term accounting processes.

For both the formal entry into REDD opportunities or the extant voluntary carbon systems there is an overwhelming need to fill data gaps and improve capacity for spatial analysis through GIS and remote sensing development. This should be a prime focus in general and targeted capacity development delivered via implementation of the SAP and associated capacity building nominated through this plan.

3.12 Monitoring and Evaluation

A good but simple monitoring and evaluation system is needed to assist in the review of the SAP at regular intervals and towards its 5 year review period. We are conscious that given the level of current human and financial resource capacity, overwhelming the DPANP with a burdensome M&E system would be counter-productive. The SAP has included relatively simple Performance Indicators and means for Verification (See Log Frame Matrix at Annex 1 to the SAP).

Given that securing adequate financial resources is the key assumption and therefore threat to the implementation of the SAP from the outset care needs to be taken not to overemphasize extensive work on targets, indicators and performance verification. In any case it should not be done in a vacuum. Harmonizing baselines, targets and indicators should occur as part of the melding of the SAP with the NBSAP being developed by the ASEAN team for the Department of Environment that also involves the DPANP. At this juncture an integrated M&E system should be developed which picks up on modern practice to incorporate adaptive management principles.

A future M&E systems should at least pick up on the following elements:

A: In terms of Institutions, Systems and Human Resources

- Sound legal base
- Complementary laws
- Institutional set-up
- Sustainable / integrated land use
- Conservation mechanisms
- Cooperative channels
- Incorporation into policy
- Conducive administrative processes
- Sufficient funding
- Interdepartmental linkages
- M&E reviews
- Routine policy review
- Effective training

B: In terms of Environmental Management of PAs

- Clear vision
- Adequate size, location of PA
- Demonstrated commitment
- Comprehensive inventory
- Historical characteristic
- Restoration targets
- Ongoing research

4.0 Systemic Capacity Needs for Protected Areas

In this part we consider the systemic needs for protected areas capacity development. These are often the external matters or influences outside the direct control of responsible agencies, NGOs and communities. We have included a number of broader biodiversity, land use and development management elements under Institutional need evaluation in section 3. Usually these may be determined to be systemic elements and included here, however as they are matters that the DPANP team will have to contend with in the future it was decided to retain them as institutional capacity development needs. Further the SAP has been development to primarily assist the DPANP and MAF, but with much focus on improving coordination and sustainable financial involving other stakeholders which we see as critical institutional needs.

There are always external factors related to systems development that directly affect PA management. While there may be no direct control over these barriers, constraints, challenges or issues, they still need to be recognized. For example, in the problem analysis work the threats from climate change are identified as a critical factor. However, what the DPANP team understands is that climate change and natural disasters were beyond the control of DPANP and future protected area managers. However it still needs to be recognized and appreciated and should guide their work. PAs provide the ecosystems and habitats in which important biodiversity reside and can provide refuge of species and communities from the effects of climate change. PAs can also ensure continuing resilience against climate change, climate variability and sea level rise if managed well. They can be both important adaptation measures and systems that can in some ways help to minimize or mitigate the effects of climate change.

The following provides observations and recommendations on critical system-level issues that may prevent managers from conducting important management activities; result in biodiversity losses or are linked to many other factors beyond the control of DPANP.

4.1 Population and Urbanization

Increasing population and urbanization; puts added pressure on resources that are already threatened or dwindling; and/or increases pollution sources impacting on natural systems. Timor Leste is facing large population growth often necessitating services and infrastructure beyond the capacities of government. Urbanization is rife as a younger more mobile population are attracted to the larger centers for work opportunity, services and/or health services. Resource scarcity from over-consumption or degradation, has also contributed to urbanization.

Any rural development initiative needs to consider extending livelihood opportunities in the rural areas, to stem the urbanization pressures, as well as to provide opportunities for the growing population.

Conversely efforts for improved biodiversity conservation, protected areas and sustainable land management may need to target the urban fringe and surrounds as it is here that most of the degradation pressures are being felt.

4.2 Status of GIS and other important Spatial Mapping

The status of the GIS and spatial mapping layers available to DPANP and the balance of MAF have been summarized by others including *Vegetation Survey & Mapping Review Planning, NKSNP, Darwin Initiative, Birdlife International, 2009*. **Annex 6** of Part 3 and the table within provide a good summary of the status of data layers within ALGIS and MAF. It comes from an extract from page 21 of the above report.

The alarming message at the time was the reported shortcomings for (strategic biodiversity planning) of two prior floristic surveys by Whistler (2001) and by Cowie (2006). These were not undertaken within the ambit of geographic and biophysical parameters, therefore their utility for DPANP biodiversity conservation planning was limited. The National Ecological Gap Assessment (NEGA, Grantham, 2011)

also noted these shortcomings. The NEGA work was able to fill some of the gaps in good quality ecological and vegetation information mapping, and this was the basis for the Gap Assessment and modeling which resulted in the identification of the 30 Protected Areas. The NEGA was also able to call upon the good work of the National Directorate of Fisheries, with the inputs regarding marine conservation from Coral Triangle Support Programme (CTSP), as well as the outputs of the Darwin Initiative and Birdlife International research that occurred since 2009.

Still the NEGA advises of its reliance on limited ecological information centered mainly on birds, some reptiles and broad vegetation mapping. While it used signature species and communities of interest, with input from local expertise – it was noted that the limitations of ecological data needed to be addressed.

As part of the Capacity Needs Assessment, an on-line survey was designed to address GIS and Spatial database development. **Figures 2** to **5** below depict the outcome of those surveys. Discussions in the following sections add light to the responses

Figure 2: Overall Status of GIS in Timor Leste

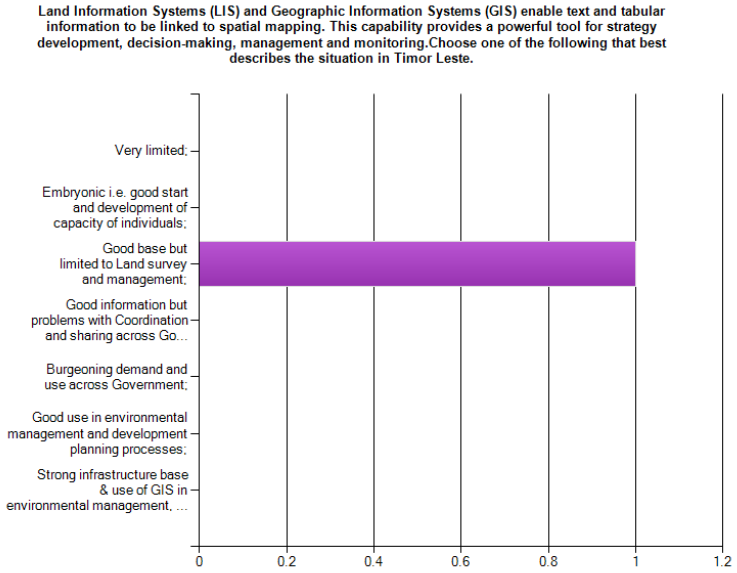


Figure 3: Current Uses

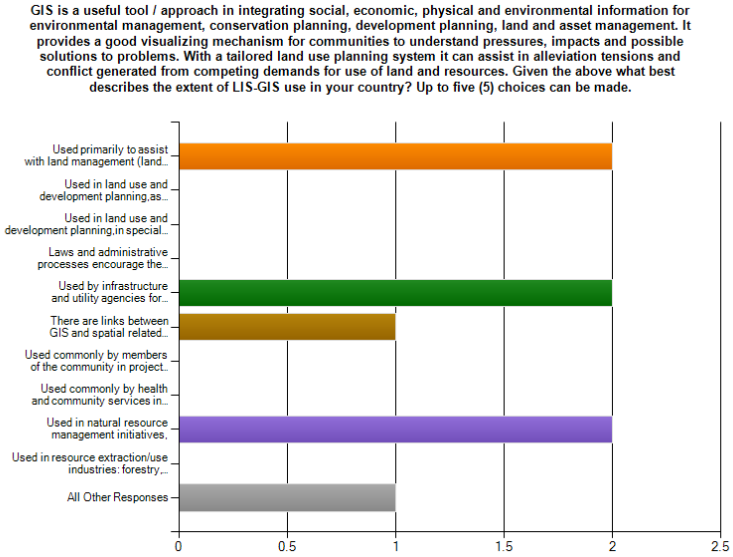


Figure 4: Critical Barriers

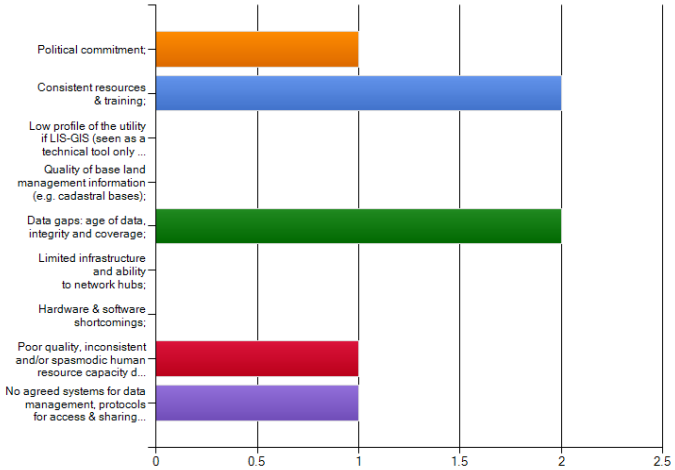
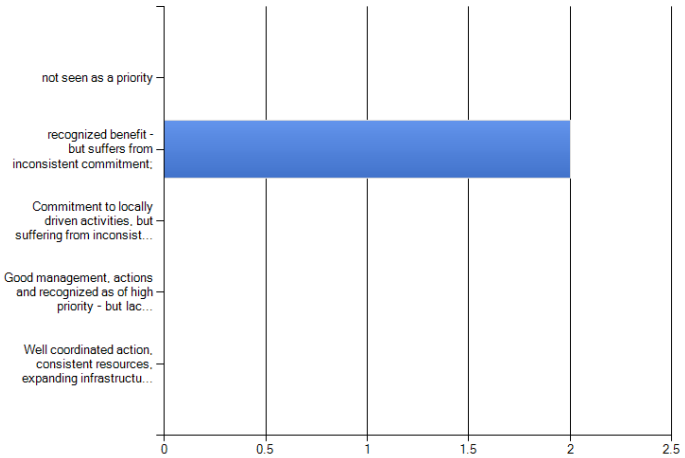


Figure 5: Commitment to GIS development



4.3 Data Gaps and Information Systems for Decision-Making

Limited information or access to it constrains effective and informed decision-making. It also denies opportunities for the communities to gain knowledge of their economic, social and physical systems – to assist with future planning and conflict resolution. Lack of networks of environmental management specialists, EIA and land use practitioners also means that communities do not have access to knowledge banks that would be most helpful in their endeavors.

As with many SIDS there has been some progress in GIS and database development through ALGIS, however it is felt that this has not moved much from the general use to support land survey, administrative land management, infrastructure development and ad-hoc requests for maps for NRM and other purposes.

Timor Leste environmental, NRM and land management agencies are not adequately serviced with geographic, tabular and textual databases covering environmental, social and economic information, nor systems to monitor the status of the environment and pressures upon those systems. Due to complexities of customary tenure systems, information is essential and often a tool for dispensing with conflict scenarios.

Natural Resource inventories are important, and while some efforts have progressed over the last decade, much more coordination and resources are required to benefit governance and planning at each level (community, local, Suco, Regional, national). More work is required, with the priority being to aggregate and assimilate data that currently exists or has been generated through many projects and initiatives but is still being kept or managed by IGOs or NGOs and research institutions. This has certainly been the experience of the DPANP and Department of Environment over the last decade. The formation of ALGIS within MAF has provided an impetus for data layers and systems to be aggregated and enhanced but further investments are required.

More broadly so as the Government is able to address International Development Goals (IDGs) there is a need for more consistent resources and commitment to GIS development. A State of the environment (SOE) reporting capacity should be within the vision of any initiative for GIS and tabular database capacity development. This would be best developed in a manner that GIS and databases are able to be developed to assist with PA planning and management, as well as to monitor progress. Also as integrated assessment and land use planning capacity for urban and rural development is needed, the information systems need to be coordinated and characterized for such decision making systems.

Even where there has been past useful development of natural resource inventories, natural resource data and information collection, storage, access and use is fragmented and often operating in a sectoral-based framework with limited linkages between departments or access by the community. ALGIS has addressed some of this however broader understanding of what ALGIS is about and the benefits for whole of government needs to be broadcast.

Adding to the issue of Information management there continues to be confusion on the 'tenure' of the data, the value of information and means for access and security. The lack of information sharing between government departments and agencies is also due to incompatible software and hardware, lack of administrative procedures to stimulate information flows, limited general communication and lack of understanding of the importance of information sharing.

If not addressed strategically, the result will be that development and resource management decisions will be made with limited, inaccurate or outdated information. Without priority being placed on village level and community access, and the resultant value adding to scientific information from that level - decisions that fail to contemplate long term cumulative impacts will continue. Information can be the

vehicle for Government to explain policy and practice to local communities, providing better understanding and acceptance of decisions. Information systems and products can also assist village level governance depict their problems and possible solutions – and convey these to national levels.

Where capacity for GIS does exist, managers and land use planners often are inhibited by a lack quality data and shortcomings with hardware, software and network capacity. The full potential of GIS in land and environmental planning is also limited by lack of practice, knowledge and experience. Pilot projects should aim to improve the skills in GIS for environmental assessment, planning and resource management.

Recommended Actions

- Ensure protocols are agreed across government for all spatial based data and information to be aggregated through ALGIS. This would include agreement that all development assistance projects include arrangements for all outputs, data layers and associated databases to be forwarded to ALGIS;
- Government continue to support and commit to GIS development for cross-government benefit;
    - Systems should be based on GIS development across various arms of government, with good access availed to the community;
    - Environment, land and GIS related database development should be guided by a government wide strategy, with coinciding nurtured development of human capacities, networks, hardware & software supported by a long-term financial resources strategy;
    - Systems should be planned as components of broader database systems that assist countries with their Millennium Assessment and International governance obligations, including their input to regional based systems;
    - Should commence with the aggregation of national, sub-national and regional natural resource and land information inventories, with strategies incorporating methods for multi-use collection of data in the future [this may need to commence with an audit of resource information requirements of various international and regional agreements];
    - Should balance science based and technical data creation and enhancement with local community based information development.
- Assist with the development of 'state of the environment' type databases and spatial analysis systems to assist with integrated development of spatial GIS capacity, and to help monitoring and assessing of direct, in-direct and cumulative impacts.
- Encourage and support pilot projects and case studies that improve skills across government in GIS for environment, NRM and land use planning assessments.
- Provide guidance to Government on how to establish baselines and benchmarks for various environmental, NRM and development parameters.

4.4 GIS and spatial Information Coordination and Sharing

ALGIS is a national directorate with function to provide general survey and mapping service within MAF. While it is a national directorate of the same Ministry, the National Directorate of Forestry has commented on difficulties with the accessing of data and services from ALGIS. ALGIS currently supports many GIS users both within MAF, across other Ministries and a number of NGOs undertaking projects in Timor Leste.

Considering that many of the NRM and biodiversity projects since 2003 have involved DPANP working closely with ALGIS, it would be expected that base data and base maps were more than would be needed for preliminary mapping for management plans. In reality, however, this is not the case. The enhancement of an integrated GIS system has been hampered by non-receipt of data layers and databases from external research parties, IGOs and individuals. Some decisive work has come from the Vegetation Survey & Mapping Review Planning project 2009 (Darwin Initiative, Birdlife International, 2009) and also the Sustainable Land Management Project (SLM). However much information still exists only on hardcopy maps of old Indonesian version of the so-called composite earth surface (RBI) map

with other maps only available in JPG format. According to DPANP staff, obtaining a map from ALGIS is frustrating because of delays. There is much delay also when they need to upload field collected GPA data to map bases and are at the convenience of ALGIS for this to occur.

Recommended Actions

- That a cross-government multi hub and network architecture for spatial database development and management be explored to assist with better integration of spatial data but to also assist with quick access and individual sector enhancement where needed;
- That GIS capability within DPANP be developed to enable quick upload of field data collected and harmonized with based data layers and ecological layers. This hub development should enable upload of bases to ALGIS on at least a six-monthly basis;
- That protocols be developed for: valuing information; determining tenure of data; metadata systems development; sharing and accessing information; security and copyright;
- That for the sharing of primary base data layers between government agencies, that there be no fee charged for transfer.

4.5 Participation of local communities

Establishing linkages with local communities is important for managing protected areas. There are a number of benefits that accrue including: increasing awareness of the status of biodiversity & systems in their locality; their impact on the natural resources; utilizing their traditional ecological knowledge expertise, and allowing them to participate in decision making through Suco or local village councils. Most of the protected areas activities that have been undertaken have involved processes to engage local people. However this often fluctuates based on the funding available at the time.

Many stakeholders advised of the need to improve institutional, legal and procedural processes to assist with community consultations, participation and involvement of NGOs. Some saw some NGOs as being too weak to add value to biodiversity processes, while others reported on the legacy of NGOS having financial support, while responsible government agencies have funds to support the NGOs or any on-the-ground actions. Some mentioned failed NGO projects where donors had dealt directly with these groups on initiatives that were inconsistent with government priorities. However overall, most stakeholders saw the need for healthy NGOs and their involvement in decision-making processes and follow-up.

Recommended Actions

- That DPANP maintain its dedicated position for Education, Awareness and Training, as well as Livelihoods and Natural Tourism;
- That these roles include responsibilities to maintain community participation and partnership in all DPANP activities and initiatives;
- That the responsibilities of the Education, Awareness and Training officer include acting as the coordinator for all participation efforts in PAs, including for projects, activities and initiative delivered by others. This is part should be delivered by being a member of the CTSP liaison committees or similar to ensure actions are harmonized;
- That education, awareness, training and public participation and partnership initiatives be adequately supported by financial and other resources.
- Collect, aggregate and avail information to other managers on alternative processes for community participation;
- Provide legal, policy and institutional advice on incorporating community participation in decision-making processes;

4.6 Community-based Planning Systems

Section 3 included commentary on integrating NRM and land use planning, as well as the broader interest in integrated land use planning assisting conservation planning within PAs where people continue to live. While it was addressed above in terms of the institutional requirements, good community based land use planning approaches are a systems matter, and are therefore covered here as well.

Much of the feedback during this review confirms a growing interest among SIDS communities to pursue land use planning approaches to assist with biodiversity and climate change implementation. Momentum expressed during the WSSD, 2002 has built on the recognition that integrated planning systems can provide useful platforms for development equity and conflict resolution. However the warning is that these systems need to be unique to customary land holding systems, if they are to be sustainable. Use of SEA approaches is a first step into integrated land use planning and often offers a low-impact entry for those communities without formalised environmental assessment processes. As the DPANP needs to address land use in addition to the usual conservation planning coinciding efforts for PA EMPs with broader land use planning initiatives is a worthy pursuit.

Land and resource use planning platforms can be tailored to enable the 'treating of the cause of conflict, and not the symptoms', which is often the legacy of sector based approaches or systems where standalone EIA laws are promulgated. They allow the drawing out of opportunities for development and not just the constraints, thereby offering a high degree of certainty required for sustainable development. Planning approaches can also allow a better decision-making platform through early intervention in the 'development pipeline'. They can also provide the vehicle for better use and acceptance of EIA as well as other tools which promote self-monitoring.

Land use changes, economic and social pressures faced by many local communities are getting more complex and beyond the coping capacity of the traditional or local systems of governance. PA communities or those that live about PAs, need to be armed with an ability to resolve land and resource use issues and conflicts many of which are rooted in local development matters. Community based land use planning systems carefully developed with communities may provide a platform to address these issues in a less threatening manner than state/national based initiatives.

The emergence of non-traditional village structures from and since the occupation period presents special difficulties. Studies elsewhere in SIDS have shown that without the usual village social structures to support and guide the community there is a lack of control or ownership in the way activities are carried out within the community. This often leads to tension, stifled activity and led to idle areas with land in dispute. Where there are idle communities corresponding with areas of poor employment opportunities crime and disease can proliferate. In areas experiencing these difficulties there are in-roads for them to become high crime enclaves, characterized by physical and mental health problems, poor amenity and large impacts on terrestrial and marine environmental systems.

Community based planning systems can provide mechanisms to manage competing demands and uses, in a manner that respects customary governance and use. Communities however are often suspect of new western concepts of the formalization of land and resource use, despite the fact that contemporary planning systems are able to incorporate many traditional systems, enhancing empowerment and participatory mechanisms.

Much benefit will be generated in research and information kits on community based planning systems' development (i.e. model approaches and tools) suited to the local societies in Timor Leste and land management practices. Pilot research and work should focus on informal settlements or non-traditional (village based) urban extension areas, which are becoming particularly burdensome for the government and communities.

Recommended Actions

- Promote the development of integrated land use or resource management systems to be the appropriate platforms for integrating biodiversity conservation, climate change, sustainable land management and urban development, including the better use and acceptance of EIA;
- Collect and aggregate information on various models of community based land use planning to assist government agencies, NGOs and community representatives explore models suited to Timor Leste;
- With other relevant government agencies assist with the development of an acceptable approach for community based or local land use planning system, that incorporates effective and efficient use of tara bandu, biodiversity conservation, climate change adaptation and sustainable land management principles and practice;
- Encourage and support case studies which promote a planning approach to minimizing impacts from development and encourage corridors of protection between PAs.

5.0 Human Capacity Needs for Protected Areas

This part covers the primary research and evaluation outcomes requested in the Terms of Reference (TORs) for Component 4 of the PoWPA project. The primary focus of the following sections is on the capacity development needs of the DPANP team and the broader MAF, but stakeholders have been cognizant that many areas of nominated capacity work needs to be part of general training and skills development in NRM and environmental agencies, NGOs and recipient community stakeholders.

Human resource development has been the focus of prior PoWPA related activities since 2003 but more so since 2006. Some of this however has been as add-ons to technical studies and research or specific project activities at the time. As some of these projects and activities have been done over short time frames, many recipients of training have commented that there has not been sufficient follow-up. This seems to primarily reflect on in-county opportunities. Opportunities for formal education through tertiary institutions in Australia, Indonesia or elsewhere have been useful and appreciated. There is a desire to see the expansion of locally available tertiary courses via the local National University of Timor or other local education facilities for MAF, Environment Department and other planning agency staff to build on basic education and training.

Overall the message has been that there is still need for greater emphasis on nurtured human resource capacity building delivered in a manner that is harmonized and tailored to a variety of circumstances of the stakeholders i.e. caters for managers within government or stakeholders who will partner with government. Greater efforts are needed to ensure that biodiversity conservation and environmental protection goals are incorporated and embedded into all aspects of policy development. There is also need for improved levels of collaboration and cooperation amongst natural resource departments and community stakeholders. In terms of human resource development the key critical factors have included:

- Sufficient funding for capacity building over longer time-frames (strategic education and training plans);
- Sufficient staffing to address needs across government and community;
- Need for better coordination across government agencies and with community stakeholders;
- Effective law enforcement;
- Knowledge of better Conservation mechanisms; and
- Integration of conservation with Sustainable land use planning;
- Widespread education and awareness, targeting local community members;
- Environmental management training involving community – on-the-ground;
- Community awareness and dialogue

5. 1 Staffing requirements

From the Problem Tree Analysis, it was clear that staffing levels is a critical issue for many in the DPANP team and wider MAF. Delivering PAs management is still embryonic in Timor Leste and the focus has been the set-up of the national level capacity – in terms of the institutional make-up. The spasmodic training and skill development that has occurred so far needs to be followed up with providing adequate staffing levels for key actions to be delivered. The critical areas would seem to be in: garnishing enough financial and human resources to complete ecological surveys in the priority PAs; providing adequate team numbers for effective and timely boundary demarcation; providing capacity and therefore staff in data collection, aggregation and characterization for decision-making, and effective support for DPANP and collegiate agencies to offer advice on alternative livelihood opportunities.

The following Table 1 describes the current staffing at the national level, with comments on the targeting of future human resource support and training. **Annex 8** of Part 3 should be read in conjunction with this table as it provides a likely financial resource plan for the additional education and training of the national team.

Table 1: Existing Staff Positions at DPANP – National Level

Staff Member	Qualifications	Position	Suited Experience	Future Needs	Comment
Mr Manuel Mendes	Bachelor in Forestry	Head, DPANP	Extensive. Technical experience and advanced Project management vision	Satisfactory level of staffing. Will require administrative support in time.	Occupied as Head of DPANP, Project Director of PoWPA, Called upon for wider MAF roles and therefore overburdened at times
Mr Pedro Pinto	Bachelor in Forest Product Technology	Head, National Park Section, DPANP	Appropriate, especially wildlife survey	Further ranger and support staff required as PA system developed	Suitable Technical Manager, but may need support as NKSNP Management plan is implemented
Mr Fernando Santana	Forestry Vocational High School	Head, Forest Survey and Inventory Section, DPANP	Extensive on ground experience	Will require additional staff to assist in PA surveys over next 5 years. Will need tailored training in community and species modelling. Also will require assistance with cataloguing / data evaluation	Excellent as vegetation survey coordinator and advisor to related matters
Mr. Gil Fernandez	Bachelor in Forest Product Technology	Manager, PA Boundary Management	Extensive experience over short term in boundary demarcation	Will require additional staff to assist with boundary demarcation,	Good knowledge of capacity needs across the board. Very

			and community liaison, negotiations	Training should focus on community negotiations & alternative management regimes	practical.
Mr. Luis M. Ribeiro	Bachelor in Forest Conservation	Head, Planning and Policy Section, MAF	Skilled in livelihood considerations; prior role in Natural tourism & livelihoods	Can provide good back-up to policy determination and technical appraisal	Has moved to broader MAF Policy Planning role
Mr Gino	?	Head, Natural Tourism and livelihoods Section, DPANP	Prior role in Extension and Awareness. Growing experience in natural tourism	Will require additional training in natural tourism development and livelihoods. Adequate staffing providing good linkages and teamwork with Tourism dept are availed	New role but as he has come from Awareness and extension role he is abreast of needs.
Ms Veronica	?	Officer, Extension and Awareness Raising Section, DPANP	Limited experience but knows administration systems	Adequate staffing, but will require training in community education, awareness campaigns and technical capacity in extension	Has recently come from an administrative assistant. Is confident and needs nurturing
Ms Geo	?	Administration	Limited	Adequate staffing level, but additional staff may be required as more PAs are established	Consideration for training on database development & management

The Nino Konis Santana National Park has been set up and there has been a position created for the National Park Manager (Mr Pedro Pinot) supported by rangers in the district delivered through the broader district management regime of MAF. However there has been little strategic human resource development focus on the rangers and ensuring that there is adequate on-the-ground staff as there is progress toward establishing the 30 PAs. As such the longer term staffing requirements for enforcement and site management could prove an ongoing impediment to establishing and managing PAs.

While it may be premature given the embryonic stage of PA planning, establishment and management, it is timely to consider what the future staffing requirements would be for on-the-ground management of PAs.

There are various types of expertise and site personnel that will be needed in the future whether as permanent staff (managers, technical advisers, field experts and administrative backup); temporary staff (community engagement, specific project managers, researchers, marketing advisers,

consultants); and voluntary staff (students, interns, donor sponsored volunteers). While it is premature to plan for actual engagement at this stage of protected areas network establishment, the DPANP and MAF should at least be aware of future staff needs.

Table 2 below indentifies the typical staff make up required for on-ground management of protected areas. In this example we have taken a very conservative approach, given likely available resources from government core budgets and the advocacy for multi-skilling & multi-tasking in the early years of PA establishment and management.

Table 2: Typical key staffing requirements for protected area management

Type of staff	Quantity	Educational background	Comments
Park Manager	1 for each District	B.Sc. or M.Sc. with training in management	Deals with fund raising and programme management
Administrative Manager	1 for each District	Cert or Diploma in Administration	May require some level of accounting skills. Deals with office admin work and communications (e.g. phone, email, inquiries)
Ranger / Forest Guard Manager/ Coordinator	1 for each District	Cert or Associate Diploma in Forestry, Science or land management	Overseas the rangers and forest guards deals with reporting. May require enforcement and negotiation training
Rangers/ Forest Guards	Site specific. At least 1 per PA; At least 2 for larger PAs	At least secondary education, with forest rehab & land management skills & training	Will require on the job training, including enforcement management & community liaison. Should be supported by Suco/village level enforcement processes in time.
Community outreach Officer	1 per District	Socio-economic & livelihoods qualification; skills in training & community engagement	Must be a people oriented & aware of local issues and tensions

Rangers and/or Forest Guards are expected to make quick field based decisions especially as regards enforcement. In the future there may be a need to look at different levels from secondary, to certificate, associate diplomas through to degrees where responsibilities are high. Communication with managers is vital and adequate resources need to be set aside for equipment.

5.2 Education and Training Opportunities

There are no formal courses or curriculum for biodiversity conservation, protected areas management, forest conservation, conservation enforcement and GIS in Timor Leste. The National University of Timor Leste (UNTL) has a keen interest to extend its available courses and curriculum into forestry, forest conservation, biodiversity and sustainable land management; however they recognize that this can only come about through garnishing funds or setting up effective collaborations with external tertiary institutions. They have mentioned that the Seeds for Life project currently housed within the UNTL could provide the means for extending current course offerings; however it would seem that this opportunity would require some gestation.

There is indication that there remains healthy contact with Indonesian tertiary institutions where many in DPANP and elsewhere in MAF have undertaken studies. Prior PoWPA, biodiversity and environmental management projects have included support for external studies in Australia and elsewhere, however there is little information available on the details of these.

Many bilateral donors have preferred to fund scholarships for East Timorese in their own countries or to fund short course training offered by the Civil Service Academy for public servants already employed by the Transitional Administration.

There is a desire to keep further education and training opportunities within Timor Leste and future collaborations with external tertiary and research institutions are best to include a high percentage of in-country delivery. For national and site level staff there is a need for training short courses which have consistent follow-up and are not directed by project activities. These should include practical field training as well as policy and leadership skills development. Exchange programs with tertiary institutions, government agencies responsible for PA management and protected area management entities would be most useful. However these too should be as part of strategic education and training plans. Given the low staffing levels consideration will need to be given to in-house skills development, on-ground training for forest guards/ rangers and rotation of education opportunities and follow-up training (i.e. refresher training).

The National University of Timor Leste (UNTL) was an amalgamation of the old UNTIM and the Polytechnic – both of which were destroyed at the end of Indonesian occupation. As part of renovations at the time, the Faculty of Education and Economics buildings was established in the mid 2000s. The Australian Centre for International Agricultural Research (ACIAR) and the Japanese government are assisting the rebuilding of the agricultural campus and engineering school at Hera. The National Research Center and Institute of Linguistics were opened in July 2001. The Research Centre supports the work of the University faculties and promotes the development of the Tetun language.

There are five faculties – Agriculture, Political Science, Economics, Education & Teacher Training and Engineering. Students can study a generalist course including human rights, ethics, philosophy of science and Timorese history. Long-term planning includes the development of a number of other faculties and courses, including Health Sciences, Legal Studies, Media & Communications, Accountancy, Fisheries, Architecture, Physics, Chemistry and Timor Studies.

There is reference to the Timor-Leste Maritime College, Rua Tasi Tolu, Terra Santa, Comoro Dili, however not much information was found on the courses and training offered.
The Dili Institute of Technology is assisted by the Xanana Vocational Education Trust, among others, and aims to create a self sustaining vocational education system for Timor-Leste which meets the needs of the people. The Trust aims to help East Timorese people create a future for the new nation by generating economic activity through basic vocational training. From available information it would seem that courses are currently limited to language, automotive mechanics and vocational engineering subjects.

The ETDA is a not-for-profit job centre and training organisation. It's name derives from the prior "East Timor Development Agency" set up by Palmira Pires in the early 2000's. It has developed into a well managed work-focussed training centre and offers certificate courses in Office Skills

The Don Bosco Agriculture College is located at Fuiloro, on Timor Leste's eastern tip and offers training of youth in essential agricultural and farming skills.

A number of bilateral agencies maintain education scholarship programmes. One is the East Timor Australian Development Scholarship (ADS) program which aims to help develop human recourses in priority sectors identified by the Government of East Timor in consultation with the Government of Australia. Maintaining liaisons with the Australian Embassy would be worthwhile to explore potential opportunities for DPANP staff.

5.3 *Collaborative Arrangements for education and training*

There are a number of extant collaborative arrangements that exist with tertiary, research or community development entities which offer education, vocational training and skills development. The following part highlights those involving Australia.

The Charles Darwin University (CDU) had an MOU with the UNTL which expired on the 9 February 2009. While a new draft was created in March 2010 it is understood this is still being considered by the University. The aim of this collaboration was to foster academic exchange and research cooperation. The CDU maintains a Timor Leste Studies Association (TLSA) respecting the level of part collaborations and students from Timor Leste attending the Darwin base institution.

There has been a concerted effort to develop Technical and Vocational Education in Timor Leste over the last few years. As such there has been a number of collaborations and/or exchanges with TAFE colleges based in Australia. One of these involves the Kangan Institute (Victorian TAFE) through the Kangan Batman TAFE's Gunung-Willam-Balluk Indigenous Education Centre. They have recently collaborated with the Friends of Aileu partnership project between the people of Aileu, the communities and councils of Moreland and Hume, Victoria. The Friends of Aileu through the Aileu Friendship Commission manages projects with a particular focus on building local democracy and a sustainable future for the people of Aileu, and responding to the needs of the youth.

The Victoria University, Melbourne, in 2011 piloted a new vocational education scholarships program for students from Timor-Leste. The scholarships reflect the need for Timor-Leste to build capacity in its developing technical and vocational education and training (TVET) sector. The Timorese Government has specifically requested support to build capacity in potential TVET senior managers and administrators, with a clear preference for training those who will teach. The Victoria University has had a long relationship with the Government of Timor Leste through: community consultations on plans for vocational education within the country; offering short courses for academics on teaching and learning in higher education at the UNTL; and development of the 'Bringing Together Peace, Human Rights and Sustainable Development' conference in Timor-Leste.

APHEDA is the Australian unions ACTU overseas aid organisation referred to as Union Aid Abroad. Its original name was the Australian Peoples Health, Education and Development Abroad and was formed in 1984. It works worldwide with local NGO partners and donors assisting poverty stricken people in training projects and for workers' rights. APHEDA has a 'Place of Learning' up on the mountainside in the village of Dauburubaha, near Viqueque town. They focus on women working with their partner NGO, Groupo Feto Foinsa'e Timor Lorosa'e (GFFTL), who teach literacy and income generation skills to rural women.

5.4 *Basic IT, Equipment and Data Needs*

Annex 7 of Part 3 identifies the current IT and communication equipment at DPANP Head Office. Much of this equipment is nearing 2 years of age. The 'shelf life' of IT equipment in humid tropical conditions with less than ideal office comfort is 2 years, so plans should be made now for the staged replacement of computers and associated IT equipment. Given the limited financial resources of Government it is recommended that existing PCs be reconditioned for continued office and database storage and use with new human and technical capacity work including the enhancement of the general pool of equipment needed by extant and future staff. Further it is recommended that computer upgrades should involve purchase of laptops instead of PCs. This is for two reasons. Firstly laptops are known to be more resilient in humid tropical conditions where bugs are hard to negate. Secondarily it enables mobility for staff who are often in the field, or who often share resources.

Vegetation survey and mapping needs an adequate support with basic facilities, equipment and data. Without this support, the process will not be optimal and the result will not be much useful for

decision making in the management of protected areas. All necessary basic facilities, equipment and data can be grouped into three categories: those for survey, for data entry and storage, and for map processing and production. Each of these categories consists of hardware, software, and base data.

Using base work by the Vegetation Survey and Mapping Review for NKSNP (Darwin Initiative, 2009) the Table 3 below identifies the equipment, data, hardware and software for the DPANP.

Table 3: IT, Equipment, Data and Software Needs DPANP.				**Existing**	**Needs**
Head of Dept	PC	Need laptop for meetings		1	1 PC 1 laptop
Survey	laptop	To enter data, to transfer photos, to view & modify maps, for data processing, assist field work		1	1 for addtn staff
Demarcation	PC	As above		1	1 laptop replace ment
NKSNP Manager	PC	Needs laptop for field office		1	1 PC for NKSNP 1 laptop
Natural Tourism	PC	Need laptop for community work		1	1 laptop
Awareness and Education	Laptop			1	-
Administration	-	Need PC to assist with admin and database mgmt		-	1 PC
Software	Office software	Software suite to prepare documents, spreadsheets, PowerPoint presentations, diagram, etc. required for data recording, data processing, reporting, etc.		Y	Y with new IT
Basic facility and base data for survey	Hardware	Rope , stick, roll meter	To delineate transect and quadrat in the field, to measure trunk diameter	Y but needs continuou s replenish ment	Y
LCD Projector		To project training materials, aerial photographs, satellite imagery, maps, etc., to be more readable by a group of people, to facilitate discussion, etc.		1 shared	1 new for DPANP
Mini Power Generator		To generate electrical power necessary to recharge electronic equipment such as notebook computer, LCD projector, battery for GPS receiver, etc.		-	1
Base data	Aerial photograph or satellite imagery	Base data to delineate preliminary polygons to help in designing a sampling design (to locate sites for transects and quadrats).		Y with ALGIS but old	Y or use of Satellite Imagery
Mobile external hard disk		To backup all data and maps produced during vegetation survey and mapping activities		-	Y
Scanner A3		To scan hardcopy aerial photographs, maps, etc., for on-screen digitizing		-	Y
Software		Antivirus software	To protect data from being destroyed by virus, malwares, spywares, etc.	Y but not managed	Y

Basic facility GIS HW & SW hub and data for map processing and production	Hardware	Desktop computer Server	To host GIS software, hold GIS database structure, store the database, process data and map, produce and view thematic maps, etc.	-	1
GIS software (ArcGIS ArcInfo version 9.3 or Open Source GIS)	To structure the database, process base data and base maps, produce and view maps, etc.			-	1
Modelling Software	Vegetation and species analysis (Marxan, PATN, CANOCO, etc.)	To process vegetation data for pattern, class, group identification, etc., in the process of re-examining the preliminary polygons delineated primarily on the basis of interpretive materials		-	Outsource for first 5 years
Base data	Base data	Data to be used as references in processing vegetation data, usually with a national standard so that the vegetation map to be produced also comply to the existing national standard		Y universal	Y universal
Thematic maps		Supporting maps required to enrich the vegetation map with other features such as administration boundary, road networks, public infrastructure, agriculture etc.		-	1
External hard disk for desktops		To store backup data for GIS-based mapping		-	2
UPS		To store electrical power and to protect equipment from electrical shock in case of sudden blackout that happens repeatedly in Timor Leste		3	3 upgrade
Printer A3		To print maps in medium-size sheets for field use during the survey		-	2
Printer A4		To print report and maps of small-size sheet		2	3
A0 Printer		To print maps in large-size sheets for display or as part of reports to be submitted to government or funding agency		-	1
GPS receiver		To acquire and to log geographic coordinates and elevation from GPS satellites		2 old & limited	2 more advanced units
Altimeter		To measure elevation as an alternative to elevation measured using GPS receiver		-	1
Clinometer		To measure slope, tree height, and height of vertical layer of vegetation structure		-	2
Binoculars		To asses vegetation vertical structure and composition, canopy gap, etc.		-	1
Digital camera		To capture general landscape, vegetation composition and structure in a particular quadrat, pictures of fresh specimen		1	1
Specimen holder		To temporarily organize and keep all specimens collected during one field trip		Y need replenishment	Y
Flash light		To help doing activities in the dark, examine things under a thick layers of rainforest		-	3
Budget Estimate over 5 years		**Inclusive of $65,000 or air photo/Satellite Imagery**		**$110,000**	

6. Human Resource Development Needs for DPANP

As indicated above, there needs to be much work toward offering education, training and skills development within Timor Leste. The problem tree analysis work identified some core areas of education and training of priority for the DPANP team. Consideration of these led to the development of the on-line surveys mentioned in Section 2.5, copies of which are included in Annex 4 (see Part 3 Annexes). The DPANP were aware that much of this training and skills development would need to be unison with opportunities for the broader MAF, Department of Environment and other partner agencies and NGOs.

The critical needs were identified as follows

- GIS development and training
- Project Management
- Natural Resource Assessment & Management;
- Socio-Economic surveys and evaluation;
- Policy, Planning & Enforcement
- Natural Tourism & Recreation Livelihoods
- Education & Awareness

The following sections summarize the findings from the surveys and discussions with the DPANP team and other stakeholders.

6.1 GIS and Information development

Some members of the DPANP team have had experience with GIS training however these have often been as add-on events to projects. They have therefore been very spasmodic in delivery. Like many technical tools there needs to be continued use of the applications and strategically delivered training for capacity building to be fruitful. There needs to be GIS capacity within the DPANP as argued in sections 4.2 and 4.3 above. Having a sub-hub GIS platform within the office will enable continued use and retention of skills.

For the delivery of strategic actions over the next five (5) years the DPANP managers need to be able to aggregate existing spatial data, enhance layers and produce maps in their day to day activities in the following areas:

- Landcover mapping: improve the quality over time;
- Air photography interpretation for specific CEMP use;
- Remote Sensing (satellite Imagery) use for CEMPs;
- Topography: improved DTM and contour data merging;
- Soils – physical & chemical characteristics: merging of data;
- Agriculture land capability to assist with conservation & land use planning within PAs; and,
- Forest Carbon mapping – to explore livelihoods opportunities.

GIS training needs to be strategic and would be best delivered with others from MAF, ALGIS, the Department of Environment, land planning managers and partner NGOs. The most beneficial process would be to enhance the capacity of the ALGIS team through 'train the trainer' approaches to enable them to deliver training across government. There will still need to be specific training on GIS and database use and development through outside expertise. This needs to be strategically delivered to enable nurtured capacity development. It would be best if resources from multiple projects are aggregated to enable strategic and timely follow-up training over a programme of 3-4 years.

The results of the on-line surveys with regard to GIS development canvass the following as priorities in terms of human resource development:

- Improve biodiversity data and landcover mapping to be effective at the Environmental Management Plan level;
- Stocktaking land & marine degradation & characterize the pressures & impacts;
- Develop baselines and benchmarks for environment and socio economic monitoring & evaluation;
- Assist with improving the understanding of the nature, constraints and vulnerability of various natural and resource systems, such as:
    - water and catchment management options
    - soil landscapes and capabilities
    - biodiversity and landcover

Figure 6: Strategic Directions for GIS Use

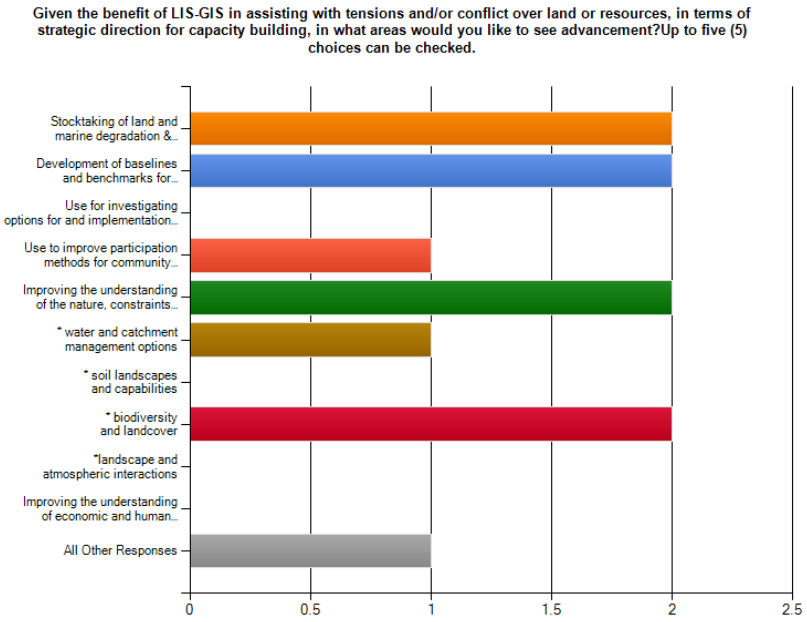
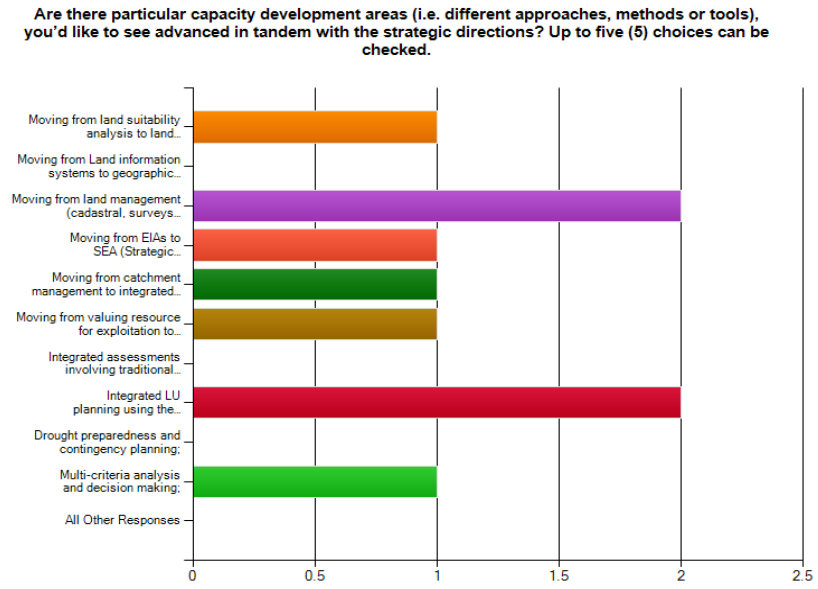


Figure 7: Specific Capacity Development Areas for Government



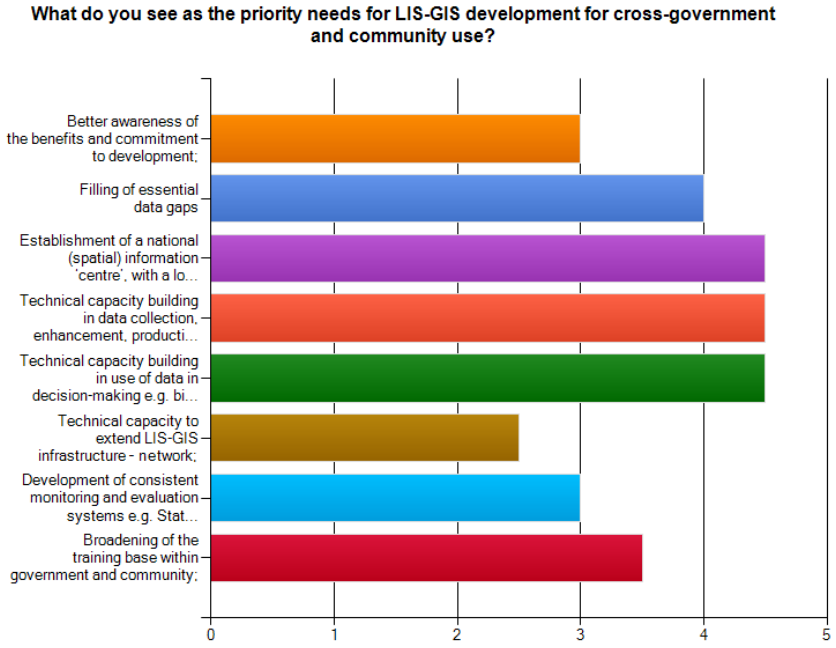
With regard to specific capacity development areas the following were seen as priorities for Government:

- Moving from land management (cadastral, surveys etc) to integrated land use planning and management;
- Integrated LU planning using the landscape approach;

The team at DPANP and other stakeholders were asked to consider what the priorities were for cross Government and Community use of GIS and associated databases. The outcomes give good leads to the focus of capacity development and make up of joint training and skills development. The priorities were seen as:

- Establishment of a national (spatial) information 'centre', with a long term strategy and resource mobilization plan;
- Technical capacity building in data collection, enhancement, production and access;
- Technical capacity building in use of data in decision-making e.g. biodiversity priority setting, land use planning, EIA, development management and natural resource management;
- Broadening of the training base within government and community.

Figure 8: Priority Needs for LIS-GIS development for Government and Community



6.2 Project Management

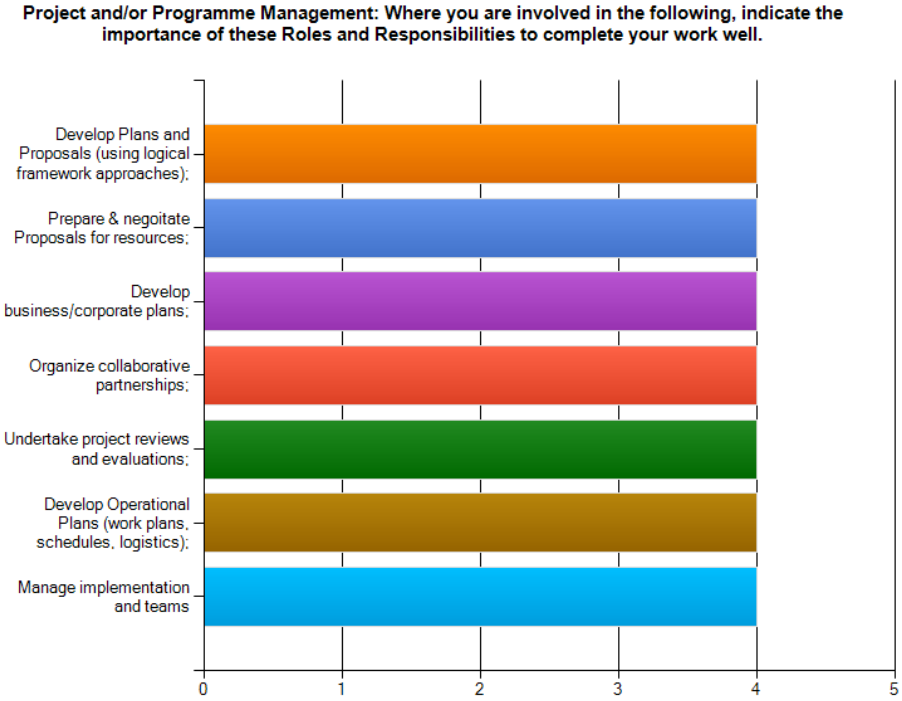
The small team at DPANP demonstrates remarkable management capabilities given their level of experience and the lack of resources in the past. Given the nature and diversity of work in PA planning, establishment and management there is a need for skills and training in Project Management at various levels.

Each of the managers will be called upon to deliver forms of project management specific to their roles and responsibilities and therefore collectively most areas of Project Management were relevant to the team:

- Develop Plans and Proposals (using logical framework approaches)
- Prepare & negotiate Proposals for resources;

- Develop business/corporate plans;
- Organize collaborative partnerships;
- Undertake project reviews and evaluations;
- Develop Operational Plans (work plans, schedules, logistics);
- Manage implementation and teams

Figure 9: Roles and Responsibilities for Project Management



As shown in Figure 10 below, Skills were seen to be reasonable in problem analysis, developing logical frameworks, strategic planning, delegation and decision-making – although all accepted that more experience would be helpful. The areas where more skills were required included:

- Proposal and Grant Writing;
- Biodiversity funding options/resources: user pays, permits, licensing, and sponsorship etc;
- Identifying and building partnerships & collaborations;
- Project monitoring, verification and reporting

As shown in Figure 11 below, In terms of their capacity building priorities the following were nominated:

- Training in Strategic Plan generation (fulfilled in part with the process of the SAP generation, but more needed with regard to CEMP generation)
- Preparation and negotiating Proposals;
- Project Management Reviews and Evaluation
- Operational Planning
- Team management and implementation

Figure 10: Summary of Project Management Skills

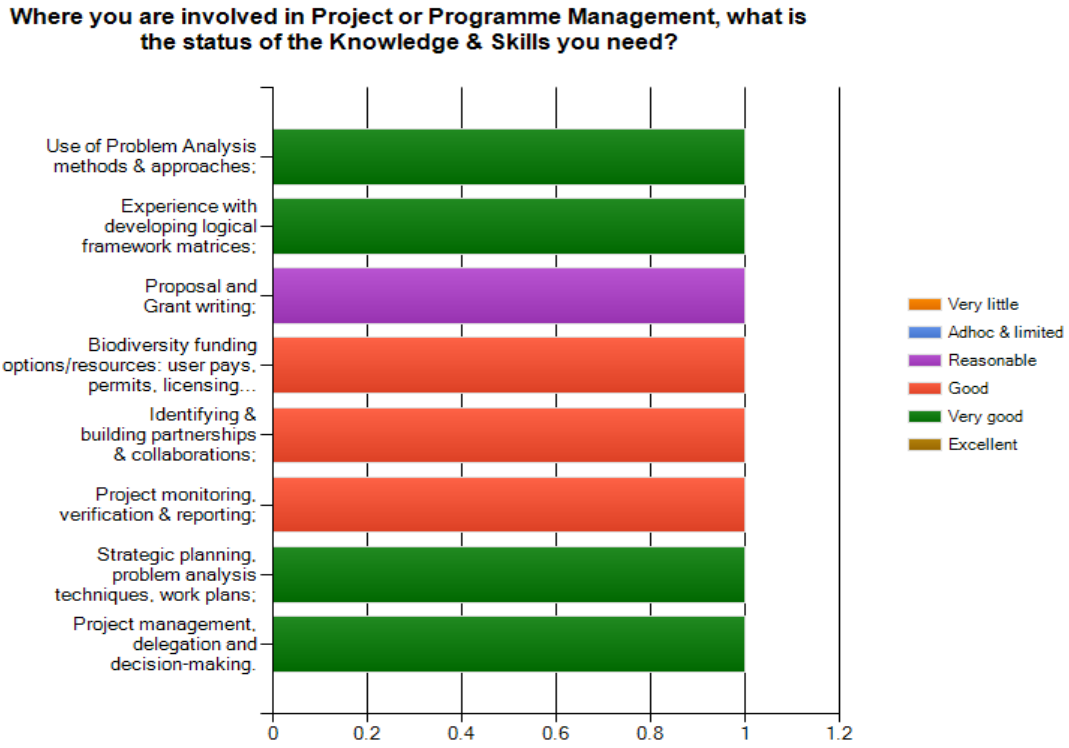
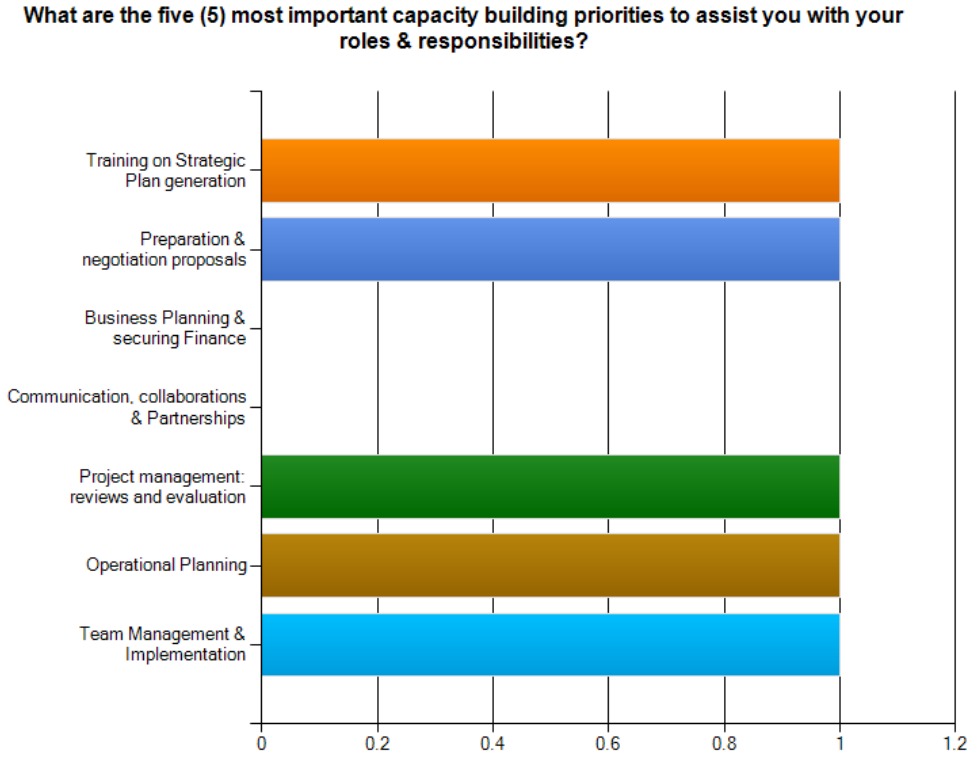


Figure 11: Capacity Building Priorities



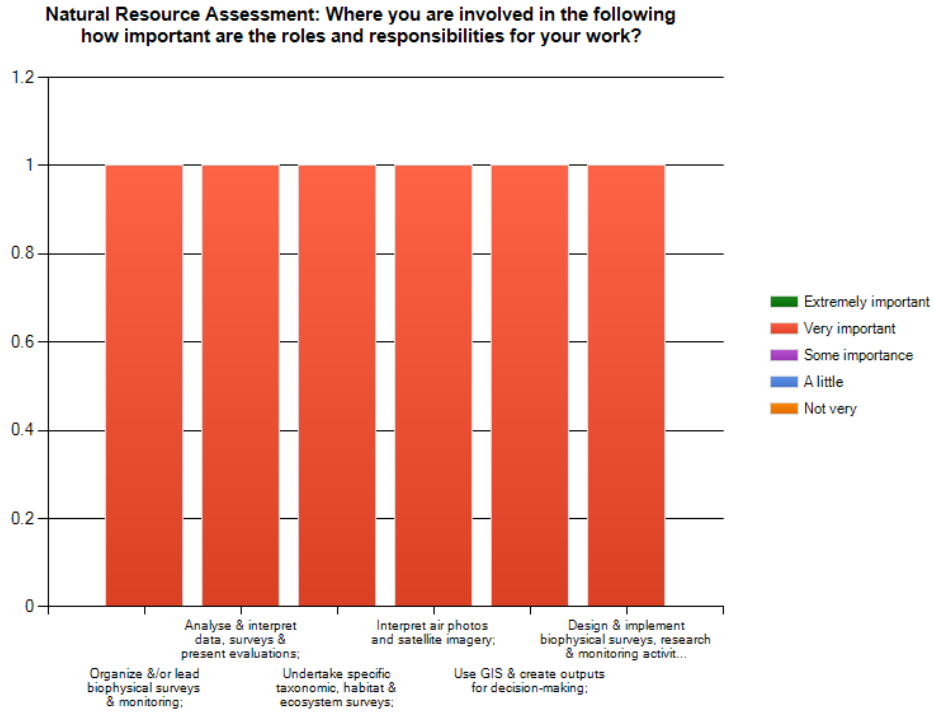
6.3 Natural Resource Assessment

As alluded to in the NEGA and reported above there is a lot more work required in filling gaps in ecological knowledge and data regarding species and communities. There is one person in the DPANP in charge of natural resource surveys; however there is capacity elsewhere in MAF and some of the NGOs. Still the demand on the natural resource assessment side of DPANP will be extraordinary. Besides increasing financial resources and numbers of staff, much skill and training development will be needed. There will be a high degree of external assistance required also in specimen management; providing Herbarium facilities and ongoing Taxonomy assistance. This will have to be sourced off-shore until the capacity in-country is such that a national herbarium facility can be established.

In terms of delivering the strategic actions over the coming five (5) years the following roles and responsibilities are pertinent to the DPANP team and especially the Natural surveys section.

- Organize &/or lead biophysical surveys & monitoring;
- Analyse & interpret data, surveys & present evaluations
- Undertake specific taxonomic, habitat & ecosystem surveys
- Interpret air photos and satellite imagery
- Use GIS & create outputs for decision-making;
- Design & implement biophysical surveys, research & monitoring activities.

Figure 12: Roles and Responsibilities for Natural Resource Assessment



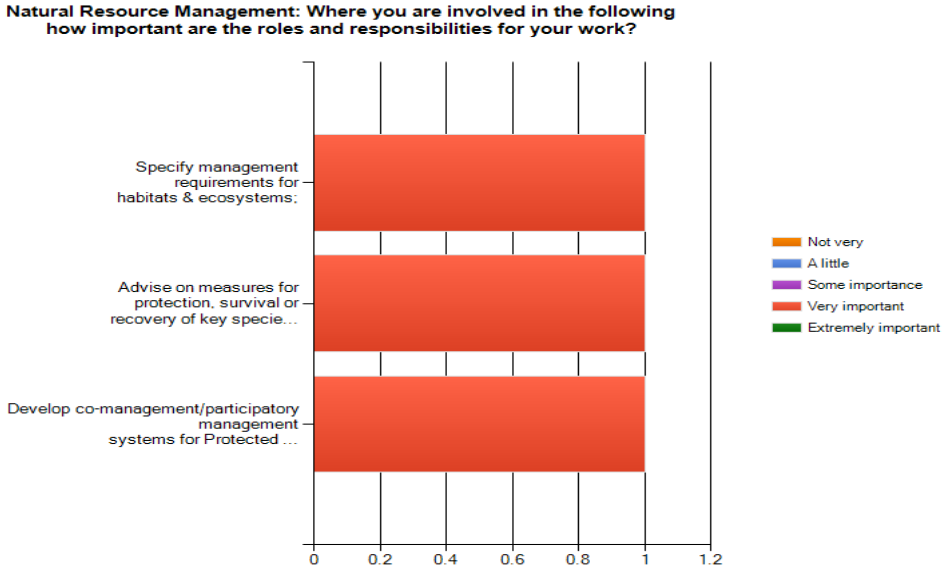
Given the focus on 30 PAs and Areas of Interest in addition to these the expected roles are burdensome. Skill priorities too reflect the variety of needs for DPANP. Currently work is also done by others in MAF particularly through the Fisheries and Aquaculture Directorate. NGOs have also been playing a major role under ongoing projects via the CTSP and others. Multi-skilling within the DPANP team is another option that could be explored.

Figure 13: Priorities for Skills development in Natural Resource Assessment

6.4 Natural Resource Management

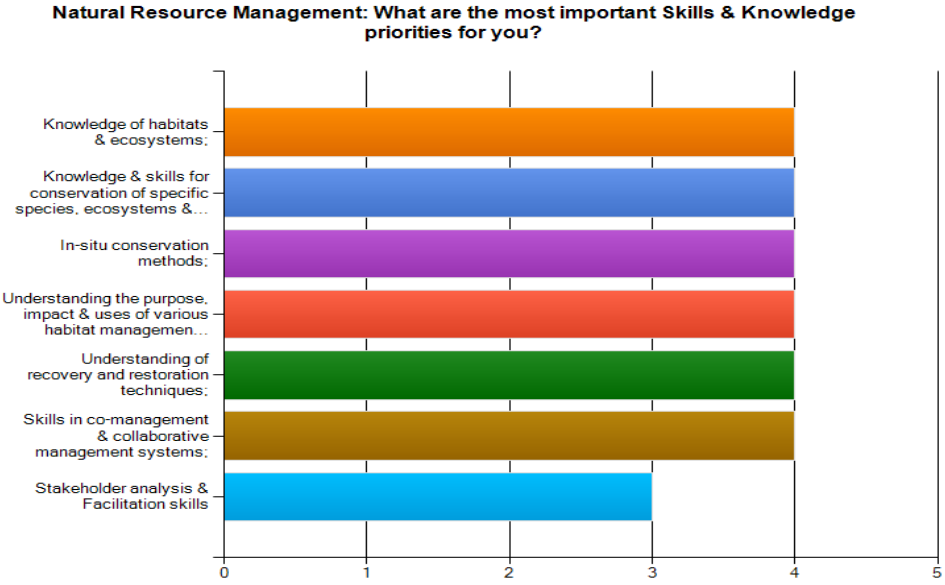
Natural Resource Management (NRM) capacity was explored separately to resource assessment as multiple team members and even others outside of DPANP will be involved in NRM planning and management. For instance the ability to organize the outputs of resource assessments and to characterize findings to influence broader decision-making and to implement through management regimes is a skill required across the DPANP department and other areas of MAF. The three key roles and responsibilities were all seen to be very important for the team.

Figure 14: Roles and Responsibilities for NRM



Skills and Knowledge priorities were also nominated across the field of choices. This was as expected given the relatively low capacity and experience at this stage. Education and training in each of the areas nominated in Figure 15 below is a sustained manner will be important for many of the DPANP team but also for others in MAF, the Department of Environment and NGOs involved in delivery of strategic actions.

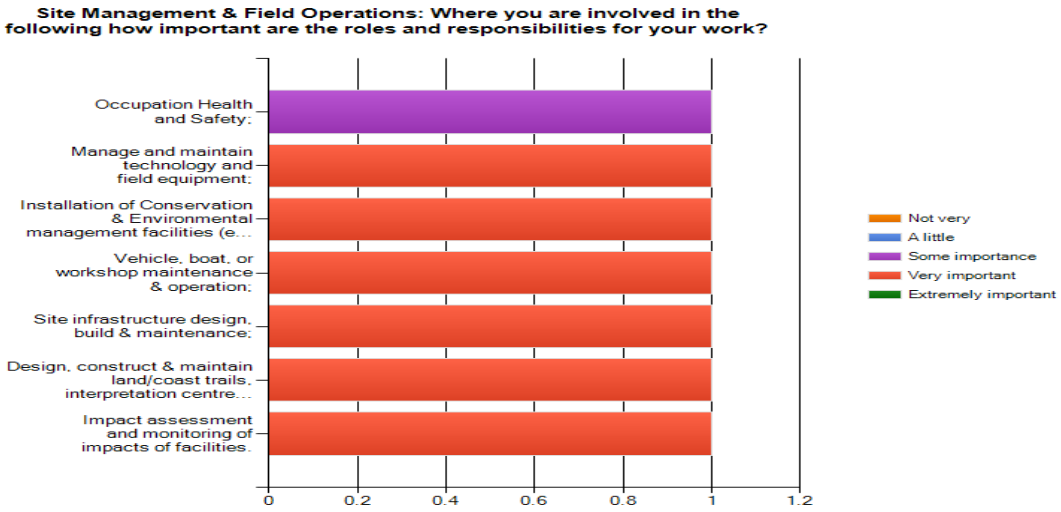
Figure 15: Priorities for Skills development in NRM



6.5 Field Operations

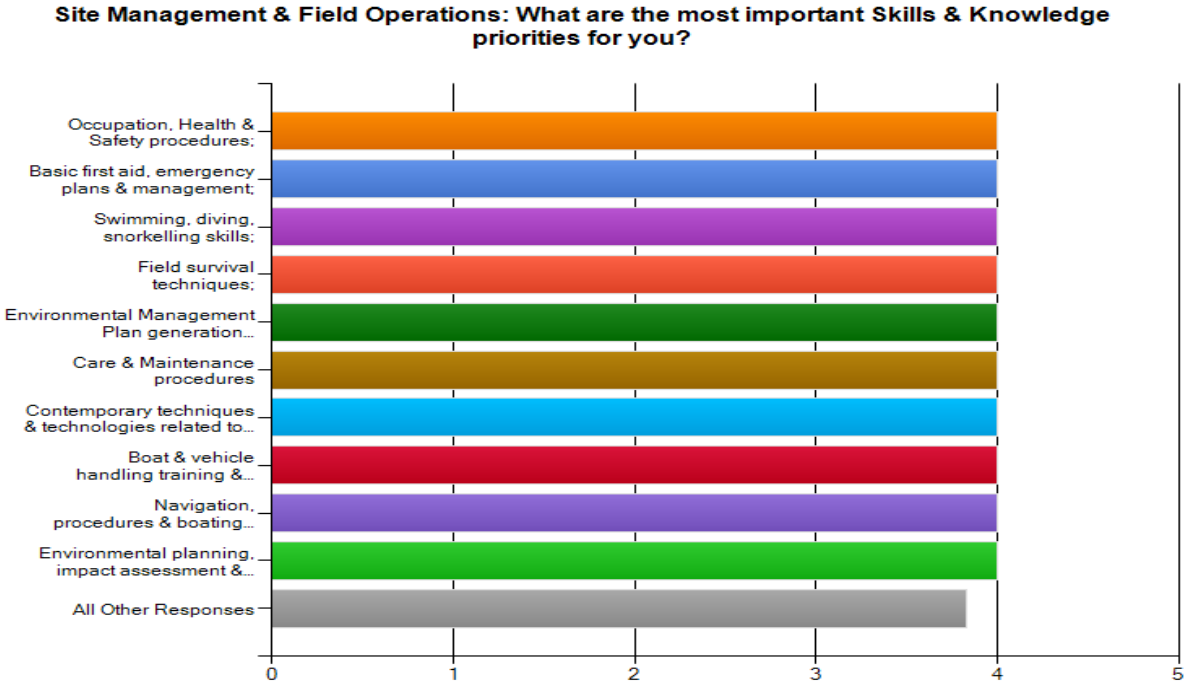
The DPANP team was mindful that capacity development should also consider the on-going costs and needs for implementation of on-the-ground activities. Often it is these components that are not explored in capacity needs assessment. The team needs to be adequately equipped but also have the technical and 'tradesman-like' skills to ensure safe and effective field operations. Again given the extant capacity and experience, the priorities were nominated across the range of options.

Figure 16: Roles and Responsibilities for Site Management & Field Operations



While the focus may be on NKSNP Manager, field personnel and Forest Guards primarily, the balance of the balance of the national team should be involved in basic training as most at times will be involved in field work and field delivery.

Figure 17: Priorities for Skills development in Site Management & Field Operations



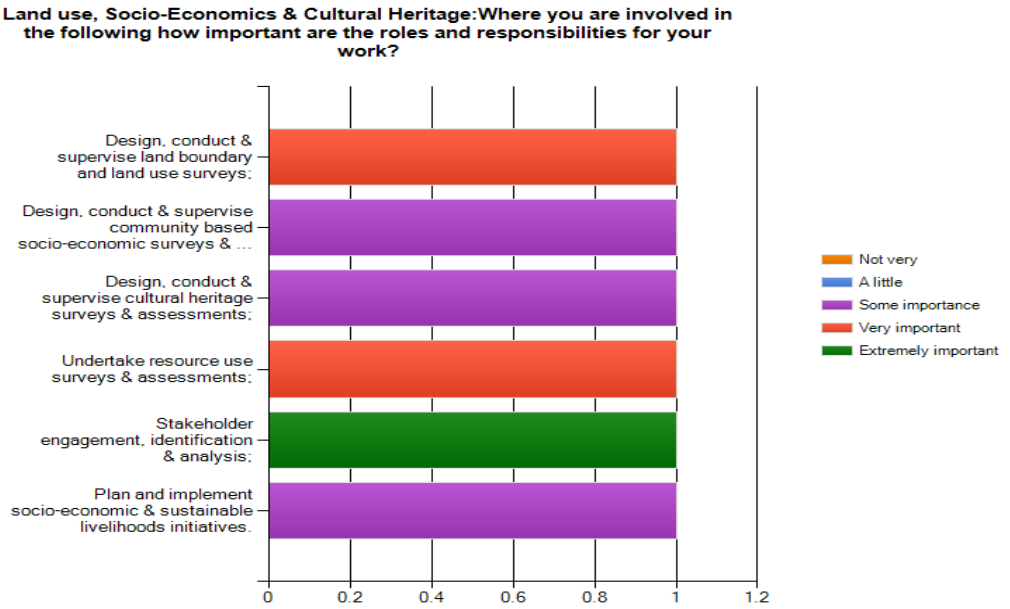
6.6 Land Use & Socio Economic Assessments

Capacity to deliver ideas and pragmatic options for continued and enhanced livelihoods opportunities for communities within and about PAs is seen as an extremely important role for DPANP. The SAP identified as critical the need to undertake community socio-economic assessments as part of understanding options for future land use planning for those living within PAs - as a pre-cursor to developing workable Conservation Environmental Management Plans (CEMPs). In terms of ongoing roles and responsibilities the team felt that education, training and skills development in community engagement and undertaking socio-economic assessments were essential for delivery the key strategic actions over the next five (5) years.

As shown in Figure 18 below, the priority roles they foresee were in:

- Ongoing stakeholder engagement, identification of issues and analysis;
- Community engagement in designing, conducting and supervising boundaries and undertaking land use surveys;
- Being able to undertake resource use surveys and assessments leading to wise and plausible options for ongoing management;
- Being able to plan and implement socio-economic & sustainable livelihoods initiatives

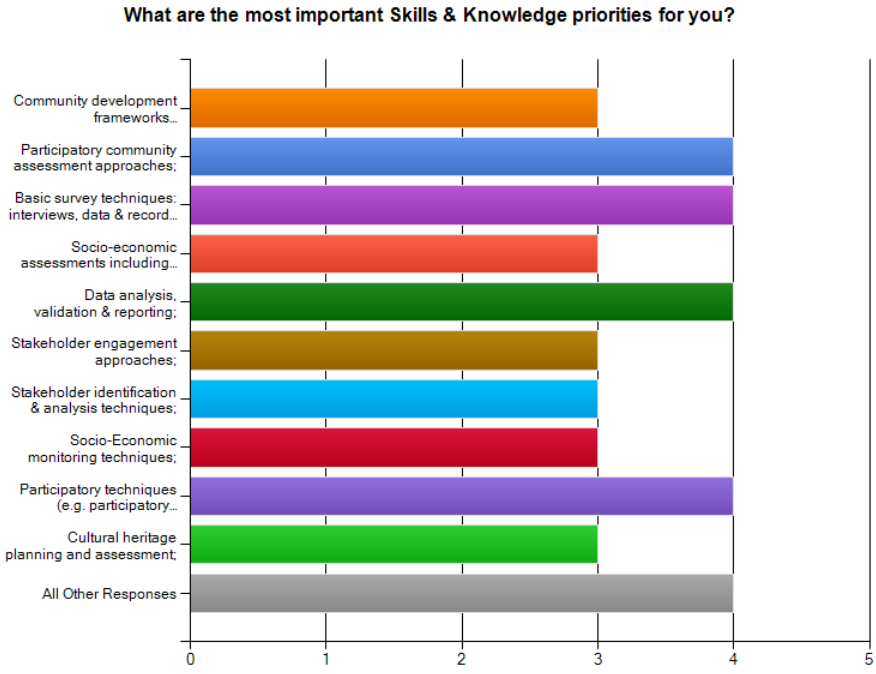
Figure 18: Roles and Responsibilities for Land Use and Socio-economics



In terms of priorities in training and skills development the focus as shown in Figure 19, was on:

- Developing capacity for participatory community assessments;
- Basic survey techniques: interviews, data and record gathering, & recording methods;
- Data analysis, validation and reporting (socio-economics);
- Able to use participatory techniques (e.g. participatory rural appraisals)

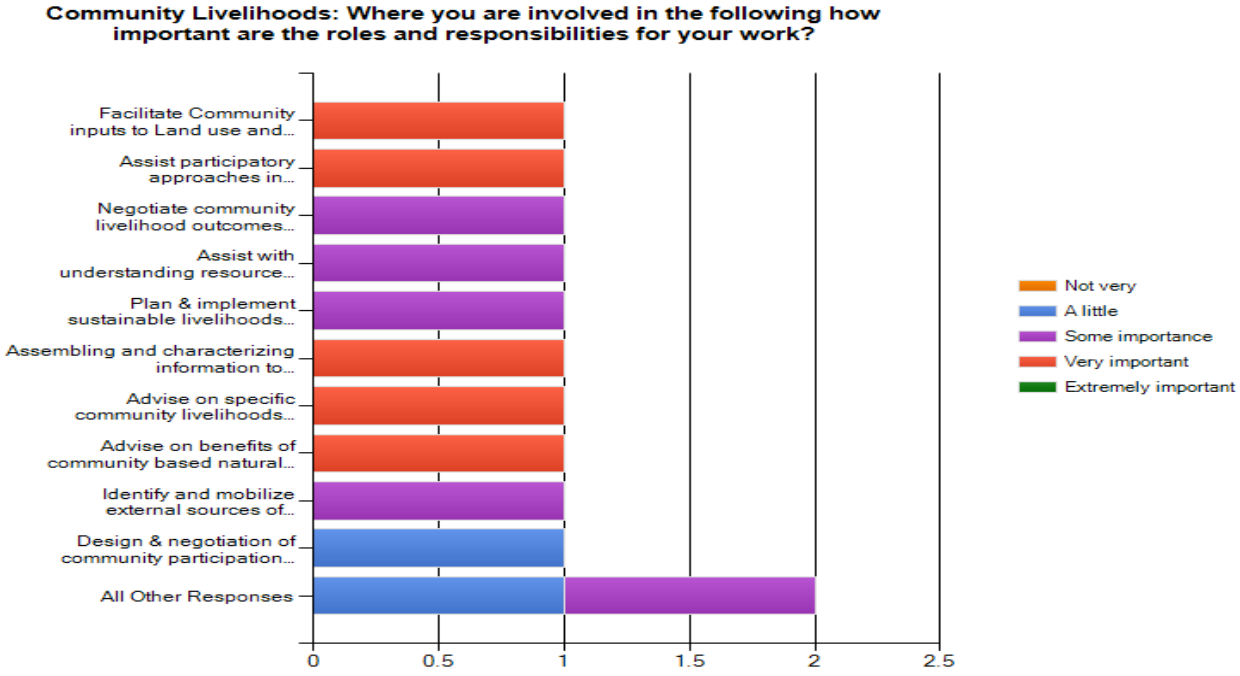
Figure 19: Priorities for Skills development for Land Use & Socio-economics



6.7 Socio-Economics for Livelihoods

Whereas the last section dealt with the socio-economic assessments needed to understand the predicaments of communities within and surrounding PAs for land use and conservation planning, this part contemplates the specifics of developing systems and management responses that are conducive to delivering management regimes that assist with livelihood opportunities.

Figure 20: Roles and Responsibilities for Community Livelihoods



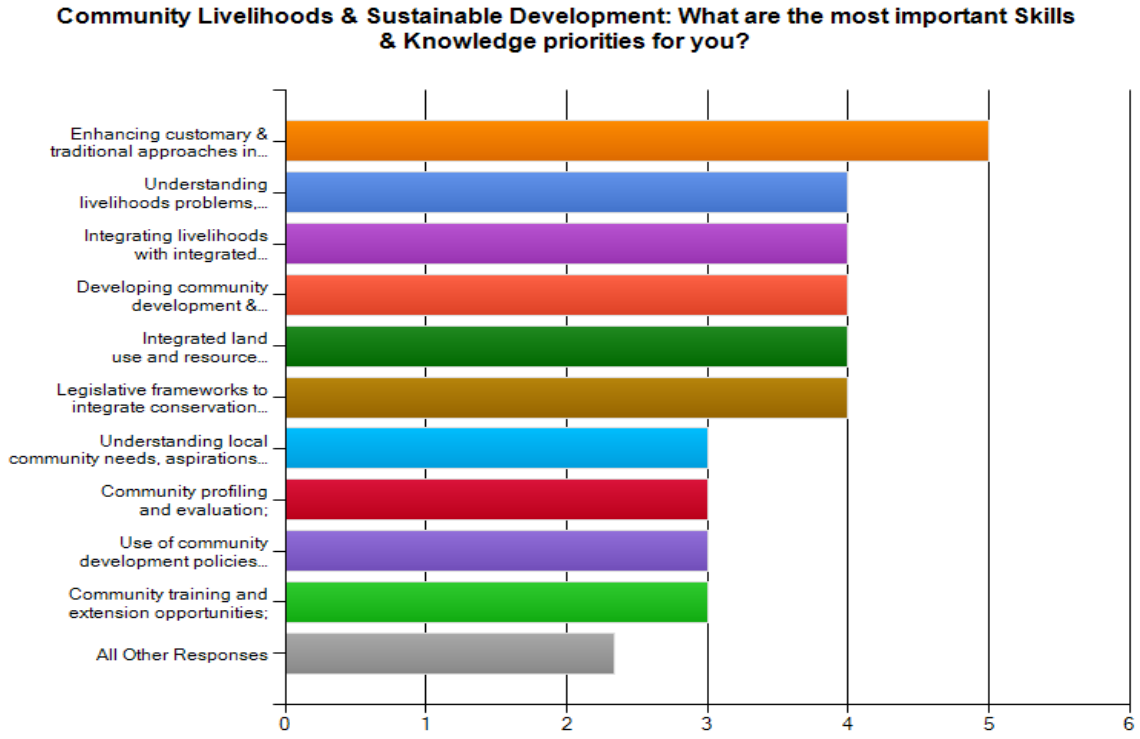
The DPANP team sees their priority roles being:

- Being able to facilitate community inputs to land use and conservation planning;
- Assisting participatory approaches in decision-making;
- Assembling and characterizing information to assist with livelihoods planning;
- Being able to advise on specific community livelihoods options & opportunities;
- Being able to advise on the benefits of community based natural resource use & management.

In terms of delivering the best advice regards livelihoods opportunities the following represent the priorities for training and skill development:

- Means to enhance customary and traditional approaches in livelihoods opportunities;
- Means to understand livelihoods problems, issues and options;
- Integrating livelihoods with integrated land use planning;
- Developing community development and livelihoods priorities;
- Integrated land use and resource & resource management planning approaches;
- Legislative frameworks to integrate conservation objectives with development management and land tenure management.

Figure 21: Priorities for Skills development in Community Livelihoods



6.8 Natural Tourism – Livelihoods

Enhancing opportunities for natural tourism in PAs is one of the most probable livelihoods options to succeed. It also offers a form of land use and activities which are conducive to conservation area planning and management. The DPANP have a dedicated section for dealing with natural tourism. While it usually considered as a component of livelihoods planning and enhancement, it was considered sufficiently important to warrant independent consideration.

In terms of important future roles and responsibilities the following were considered important (see Figure 22):

- Being able to develop recreation and tourism strategies & plans;
- Need to identify potential tourism and recreation opportunities;
- Coordinating sustainable livelihoods activities;
- Advising on means to institute equity in access and benefit sharing;
- Organizing collaborations with entrepreneurs, communities, industry groups & other resource users.

The DPANP team understands that many of the key strategic actions would likely involve delivery by other parties including the Department of Tourism and partner NGOs. Education, training and skills development could therefore involve cross-government delivery with key NGOs invited to participate. The priorities for skills development were seen as (see Figure 23):

- Developing tourism and rural livelihoods strategies and plans;
- Generating criteria to consider livelihood opportunities;
- Identification and evaluation of natural tourism opportunities;
- Identification of recreation opportunities;
- Understanding business approaches and models for commercial activities;
- Understanding basic business administration & customer services.

Figure 22: Roles and Responsibilities in Natural Tourism and Livelihoods

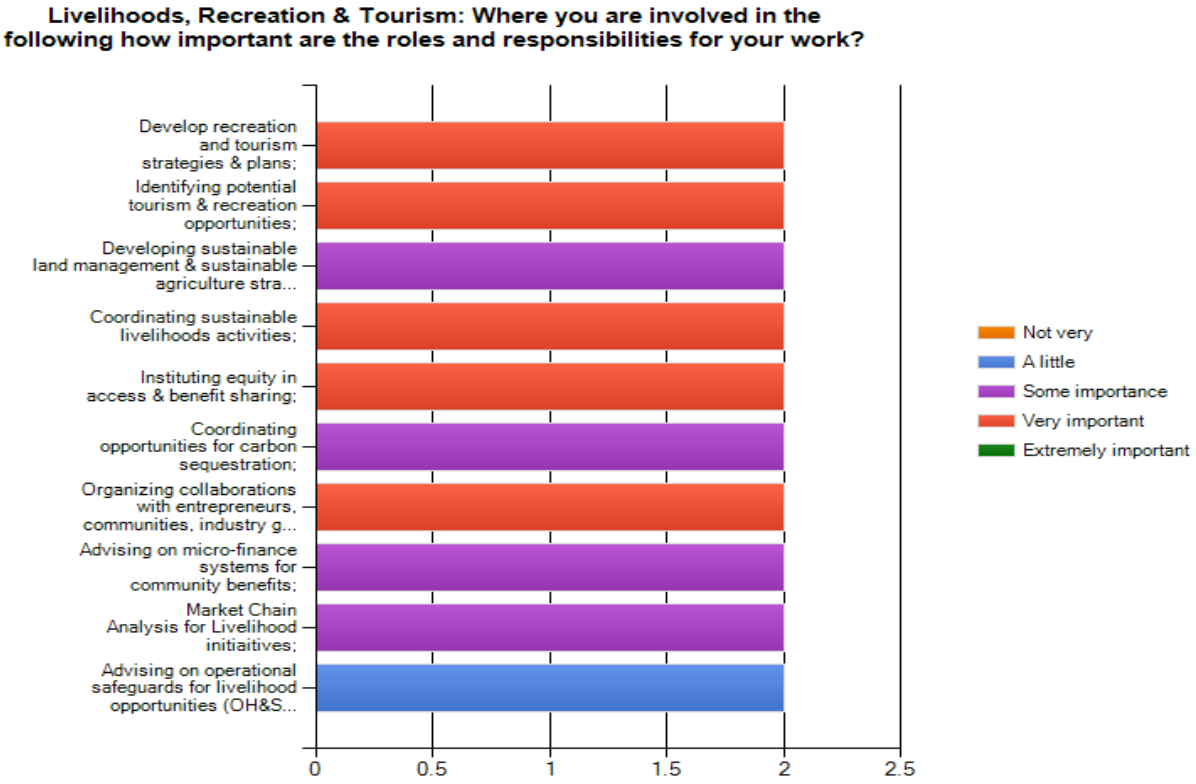
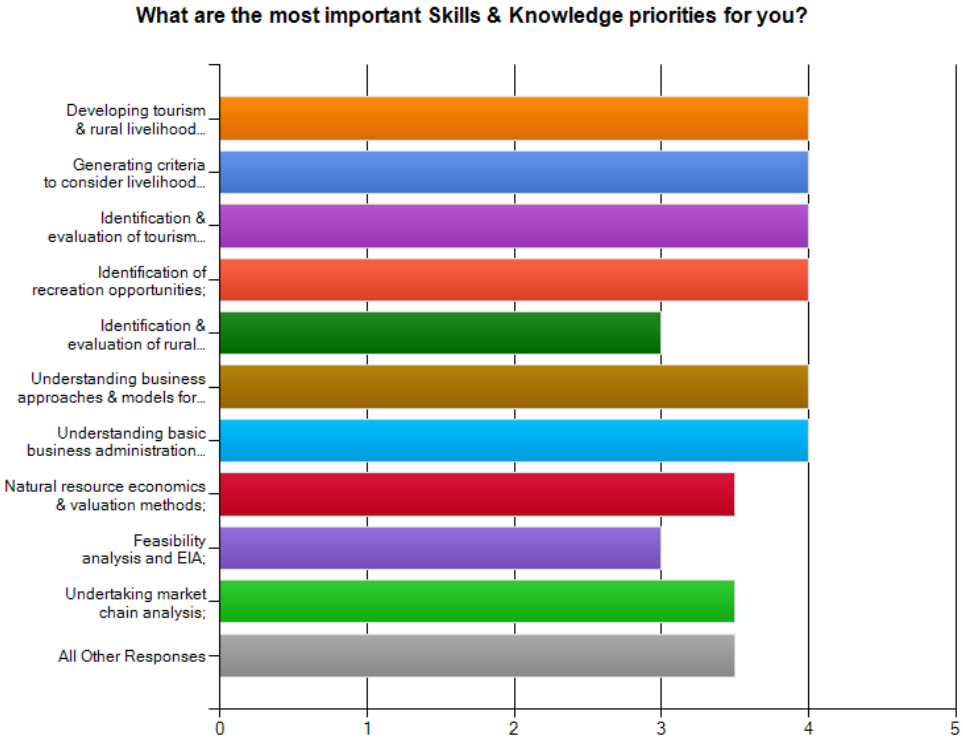


Figure 23: Priorities for Skills development in Natural Tourism & Livelihoods



6.9 Education, Awareness & Training

As mentioned previously it is vital that community education, awareness and training receive substantial support. It is important for the community generally but more so for the communities within and surrounding PAs to understand the absolute necessity for PAs, as well as to understand the eventual opportunities that will prevail in terms of environmental and socio-economic benefits. Additionally it is important for there to be greater understanding and appreciation of these benefits in the medium to long term across government. Such knowledge will assist with coordination and multi delivery of the strategic actions.

There is very good general support for the intention of setting up the protected areas network, as many in the community (whether government, NGOs, business managers and general community) are acutely aware of the level of degradation that has occurred in the recent past. However this general support needs to be garnished through the implementation phases as there will be some hard decisions that need to be made.

The DPANP team has a dedicated division set up to manage communications. The incumbent staff member is young and inexperienced but very passionate with regards to her role. There is some good experience across the balance of the team who appreciate that the different audiences will necessitate different delivery forms and mediums. The communities they involve in their work have a diverse literacy range. At the local level the DPANP team is aware that visual mediums have and will continue to be the mediums most well understood. However as mentioned the need for good communications and promotion across government and between development assistance agencies will require the use of other mediums.

As systems approach to communications and awareness raising will be important. The outputs and inputs from the communities will need to be carefully managed and will direct activities on the ground. The Education, Awareness and training officer will need to work closely with other DPANP team members in the delivery of the strategic actions. As delivery will involve other parties outside of DPANP there is a concurrent need to be involved in the coordination of these multi-delivery actions.

Imparting basic training to communities within and surrounding PAs is seen as the ideal approach in empowering communities and placing them in a position of self-determining ways forward. A 'train-the-trainer' approach is needed so that DPANP team members are able to distill basic knowledge and know-how to community members. A strategic approach to enhancing the skills and experience of the DPANP and others assisting in delivering the strategic actions should be the basis for nurtured capacity development.

As shown in Figure 24 below, the key roles that the DPANP see for themselves are as follows:

- To plan education, awareness and training activities;
- To develop appropriate education and awareness materials;
- To develop interpretive materials and information for the use by local communities

Establishing strong community relations is an important area that continually needs to be developed for PA planning, establishment and management. Training in communications should assist training in participatory planning, improving knowledge of the ecosystems, on-site implementation choices and monitoring and evaluation, among other matters.

While there is a dedicated Communications and awareness staff member, good communications is required by all team members and their partners in delivery. The key skill areas nominated for priority were in (see Figure 25):

- Developing education, awareness and training materials;
- Being able to generate practical strategies for delivery to communities;
- Creative writing and graphic skills development;

- Understanding of the use of interpretive media, the variety of materials and delivery techniques;
- Being able to undertake basic training of community members ('train-the-trainer approaches);
- Better understanding of rapid rural appraisal approaches and methods (variants for different purposes).

Figure 24: Roles and Responsibilities for Education, Awareness & Training

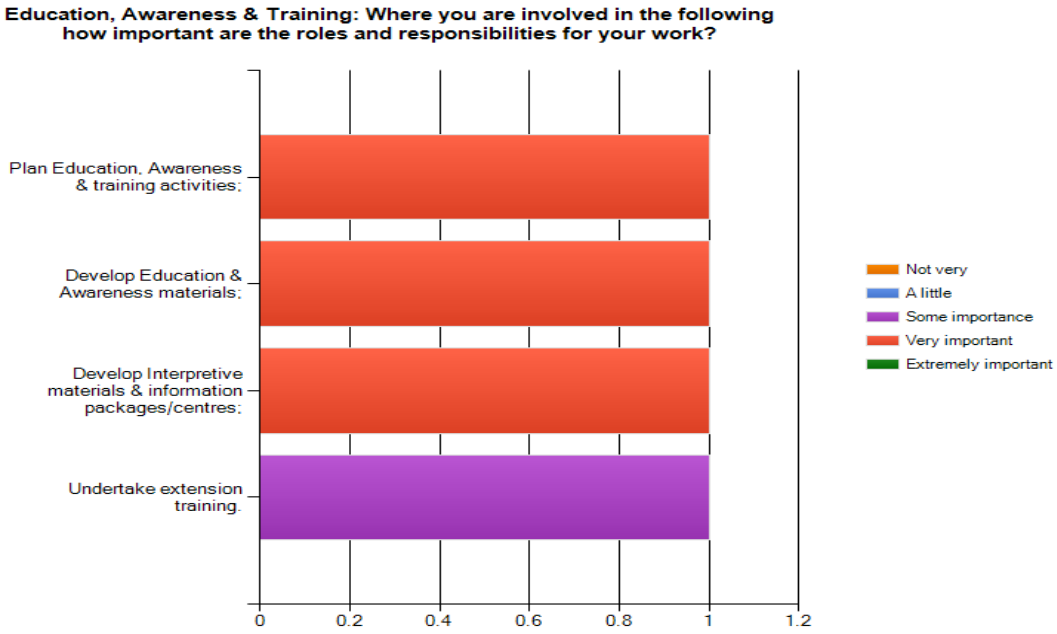
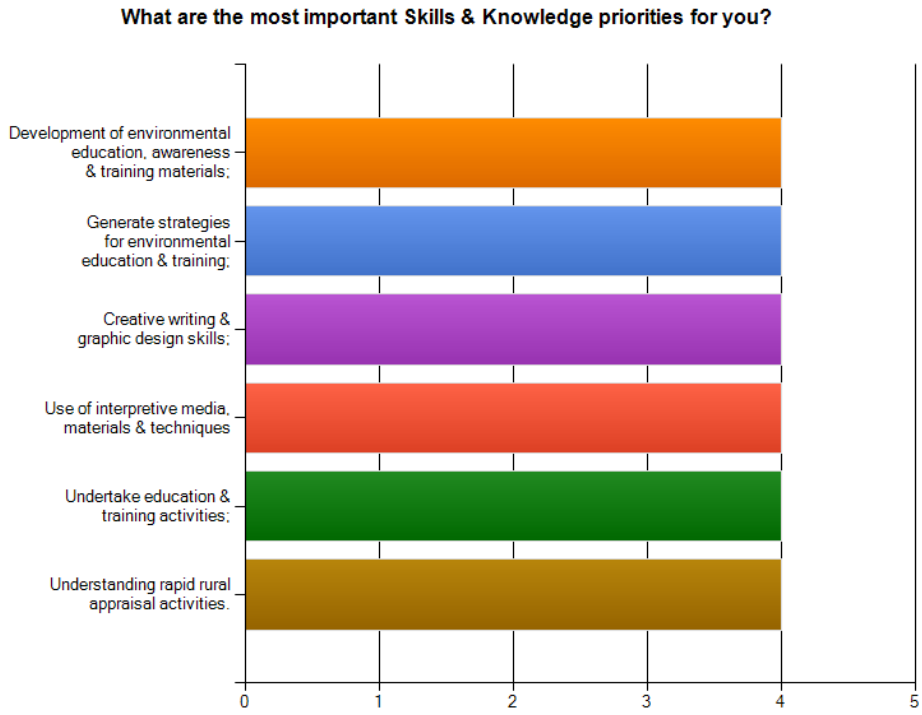


Figure 25: Priorities for Skills development in Education, Awareness & Training



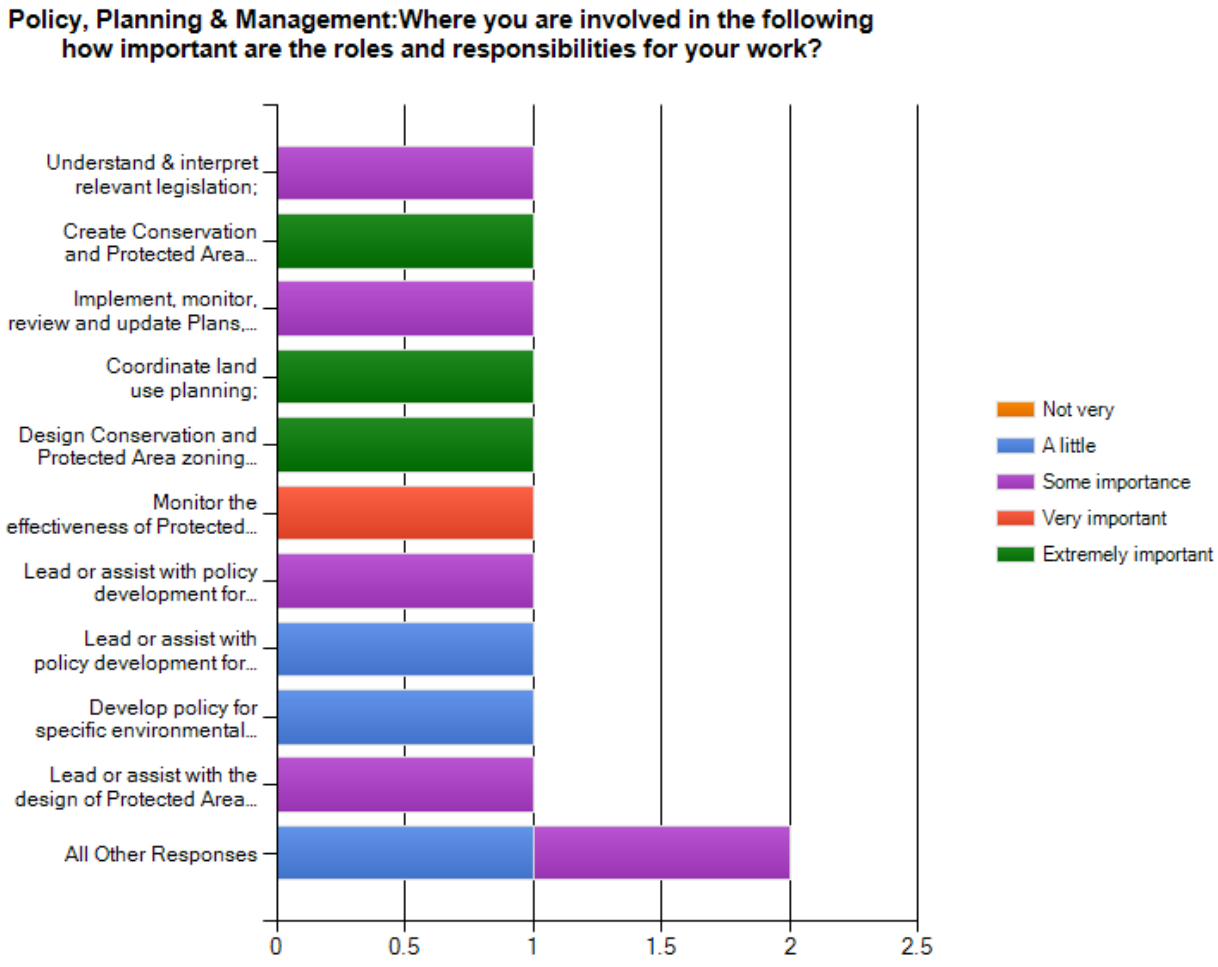
There are particularly high production costs in Timor Leste and this should be accounted for both in terms of allocating financial resource and, as far as is practicable, ensuring that education, awareness and training materials can be multi-applied and used.

6.10 Policy and Planning

Most within the DPANP will be involved in policy development, PA planning and management of protected areas at different levels of implementation. The prospects roles for the team therefore are varied. In terms of preceding discussions and the strategic actions in the SAP as shown in Figure 26, the following were seen as the critical priorities:

- Create conservation and Protected Area Management Plans: the eventual component 2 of the PoWPA activities will impart some understanding and knowledge of PA environmental management plans, however this is a skill area that needs continual development;
- Being able to coordinate land use planning: given that communities live and use many of the PAs the team will need to be involved in land use planning decisions, as well as conservation planning;
- Being able to design conservation and PA zoning schemes to assist with conservation objectives: knowledge of integrated approaches is required.

Figure 26: Roles and Responsibilities for Policy and Planning



A range of good skills will be required for national and site based management. There is a good lot of information available to the DPANP team on conservation planning; however there are fewer materials available locally or even on-line with regards to integrated community based management for PAs (i.e. integrating land use with conservation planning).

As shown in Figure 27, the critical areas of skills and knowledge development were nominated as:

- The use of integrated land use planning approaches suited to Timor Leste: this recognizes the need to accommodate continued livelihoods opportunities for those living within and surrounding PAs. Broader land use planning policy and an eventual decision-making system may also accommodate protecting or guiding development within the Areas of Interest (AOI);
- Creating PA zoning schemes and plans: this links to the strategic actions to develop criteria and systems to classify the various PAs, as well as the need to then apply methods for internal conservation area planning. Both the Man and Biosphere (UNESCO) and the Locally Managed Marine Areas (LMMAs) approaches have been explained to the DPANP team;
- Developing specific and operational management plans: this relates to the above two capacity development needs, but is cognizant of the need to start producing PA management plans, firstly for the NKSNP and other priority PAs.

The survey responses showed that a number of other areas of skill development would also be essential for these extremely important priorities to be achieved. These are also reflected in the Figure 28 below where they achieved an importance score of 4.

Figure 27: Priorities for Skills development for Policy & Planning

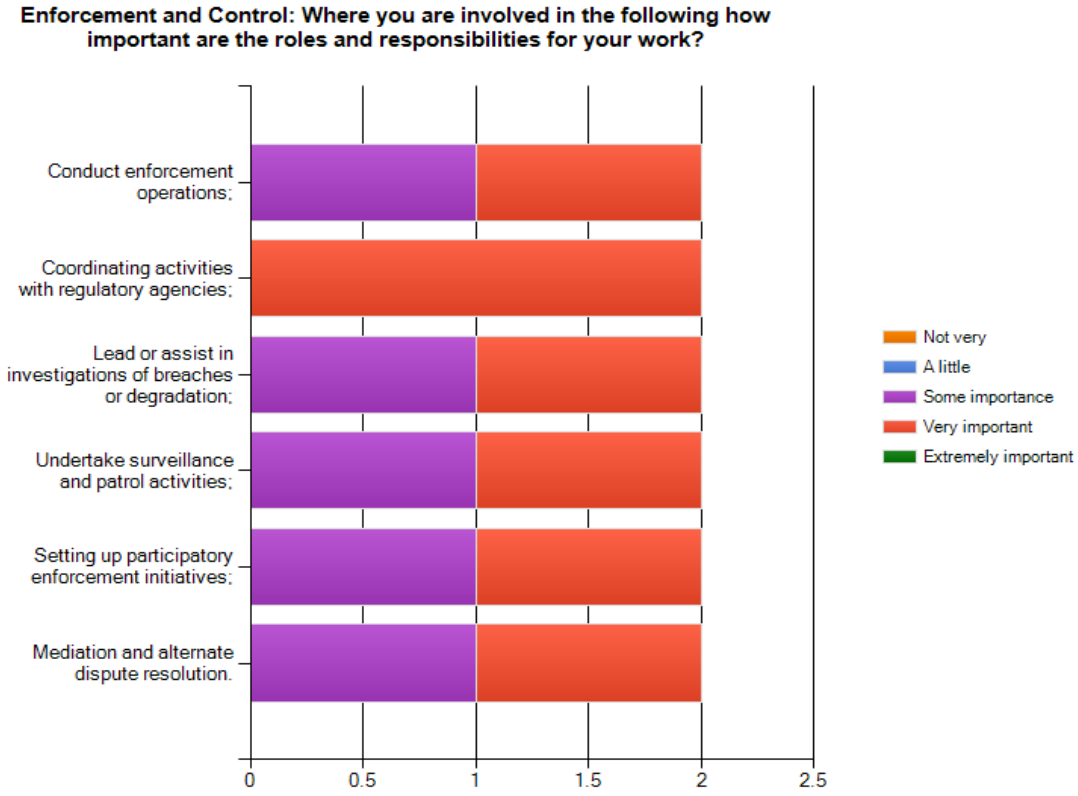
6.11 Enforcement

Enforcement of Protected Areas management objectives to date has been hampered by the gaps in institutional mechanisms, namely the legal and policy bases. The DPANP with the broader MAF Forestry Directorates have established Forest Guards to enforce illegal clearance of forests and forest wood collection for energy and building materials. Advocacy for forest conservation remains the cornerstone of enforcement to date.

The completion of the PA Decree law involving the enhancement and linkage to Regulation 19/2000 will provide the foundations for improved enforcement and control of development. That said good enforcement needs to go hand in hand with strong community relationships, good communications, improved understanding of the purpose and benefits of PA management, and maintenance of livelihoods opportunities.

Given the need for enforcement actions at the national and site level the roles and responsibilities of priority were nominated across the range of choices. Given the need for multi-jurisdictional enforcement & the current limited resources, the DPANP team felt that the coordination of enforcement activities with other regulatory agencies was of paramount priority (see Figure 28).

Figure 28: Roles and Responsibilities for Enforcement

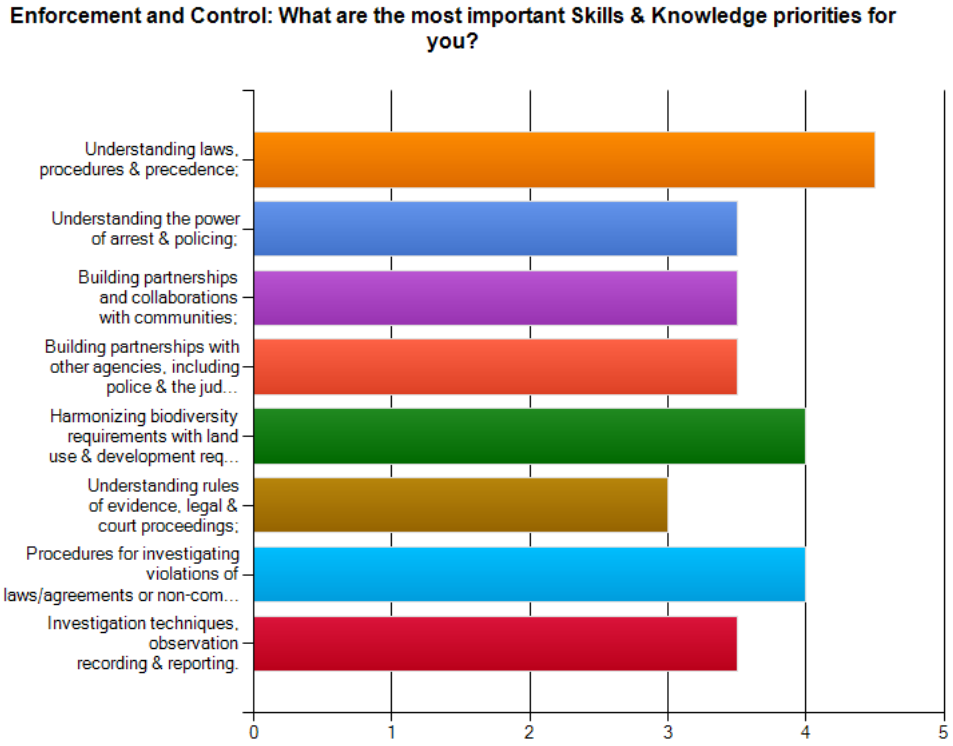


Enforcement of policy is a difficult task for even experienced people. There needs to be much confidence building and knowledge development of the staff at DPANP whether at the national level or the site management level. As shown in Figure 29, the team nominated the following priority skills and knowledge development areas for improved enforcement:

- Gaining an understanding of laws, procedures and precedence in PA establishment and management;

- Harmonizing biodiversity requirements with land use and development requirements;
- Understanding procedures for investigating violations of laws/agreements or non-compliance with management plans.

Figure 29: Priorities for Skills development in Enforcement



6.12 Aggregating Training needs

Sections 6.1 to 6.11 outline training and skill development needs over wide and varied fields. The priorities outlined are plausible in terms of the current status and capacity of the DPANP for protected areas planning, establishment and management. For a small team it is very important that along with the primary training of staff in their key areas, that multi-skilling is promoted. It should be at the centre of any capacity training strategy, as the DPANP and MAF will be subject to limited funds over the foreseeable future.

As well as targeting technical skills development, most DPANP staff will need to also possess skills and experience in administrative management areas such as report writing, proposal writing, monitoring & evaluation techniques, database development and data recording.

It is recommended that the DPANP canvass a number of local and overseas training and tertiary institutions and agencies to have them respond with details of the possible training that could be offered both in country, or within host countries. A range of training forms needs to be considered: from vocational training of administrative and technical skills, to field based training, to local tertiary and overseas tertiary opportunities. Feedback should be entered into a spreadsheet or database that covers the various training areas against possible sources of training, as per Table 4 below.

The absorption capacity of the small DPANP team needs to be taken into account in any capacity training strategy. A 'train the trainer' approach should be instigated focusing on a 'learn by doing' approach with DPANP and partners being leaders in training community members

Table 4. Training Summary Database for DPANP and Partners

Training Needs	Possible Sources
Scientific	
Basic Ecology	
Research Methods (sampling, monitoring techniques)	
Freshwater management	
Water Quality sampling/monitoring	
Coastal Management	
Fisheries Management	
GIS (for managers)	
GPS technology (for rangers/forest guards)	
Training of Trainers in PA Management	
Marine/Fisheries/Pollution Control	
Socio-economic surveys & monitoring of communities	
Management (managerial)	
Strategic Planning and Management	
Conservation/Protected Area Management	
Project Management (including fund raising)	
Conservation Area Zoning	
Integrated Land Use Planning	
Conflict Resolution	
Enforcement (laws, regulations, actions, communication/documentation)	
Supervisory Management	
Mediation & conflict management	
Financing/Governance	
Participatory Planning, Implementation, Monitoring and Evaluation	
Leadership Training	
Communication skills/public education (e.g. presentations) for both managers and field personnel	
Proposal Writing	
Report Writing	
Management (field)	
Ranger training	
Border surveillance	
Forest fire control	
GIS (for site managers)	
GPS technology (for rangers/forest guards)	
Orienteering and navigation with GPS	
Cartography	
Waste management	
Conflict resolution	
Tour Guiding	
Standard Operating Procedures	
First Aid/CPR	
Buoy installation and maintenance	
Life Guard	
Boat Handling	
Scuba Diving	

7. Strategic Action Areas

7.1 The Strategic Action Plan (SAP)

As mentioned previously the work for Component 3 and 4 were carried out in an integrative manner. The outcomes of the earlier issue analysis and problem tree analysis covering thematic as well as institutional issues were used to form the framework for the Strategic Action Plan (SAP). The development of the plan by cooperative input by the DPANP team was in itself a capacity development activity. It dealt with the key barrier often found in protected areas management – a lack of an ability to frame the needs for PA management within in a plausible plan, especially by the Managers upon whom the responsibilities often fall.

The Strategic Action Plan also fills a key gap identified by DPANP team with regard to Institutional weaknesses. It is available as a standalone product to this capacity needs assessment and report.

Through cooperative input the Strategic Action planning process established seven key Goals and Objectives and nominated Strategic Actions for a five (5)-year period to address the priority challenges identified. These Goals were nominated by comparing the 13 key strategy areas promoted by the PoWPA guidelines from the UNCBD, and review of the composite capacity shortfalls nominated through the problem analysis work by the DPANP team.

Composite Capacity Shortfalls	Goals Developed
1. Enhance Ecological Knowledge	**1. Establish and strengthen national systems of PAs**
2. Establish criteria for types of PAs	
3. Demarcate boundaries for PAs	
4. Maximise livelihood opportunities	
5. Integrate PAs planning into broader Biodiversity conservation & Land use planning	**2. Establish and strengthen Networks & Improve Collaboration**
6. Improve coordination and collaboration	
7. Changing behaviours and actions through social marketing (promote & market PAs)'	
8. Research, Planning, Management and Evaluation – establish criteria for PAs;	**3. Build capacity for Planning, Establishment & Management of PAs**
9. Generate Management Plans for PAs	
10. Improve Individual capacity at DPANP -HRD	
11. Improve Systems capacity – GIS, information & data	
12. Capacity to assist with Livelihoods	
13. Address risks and vulnerabilities from all key threats to PAs	**4. Prevent and Mitigate Negative Impacts of Key Threats to PAs**
14. Approaches to rehabilitate PAs at the village level	
15. Strategies needed for Key Threats: land conversion; bushfires; agriculture; illegal logging; invasive species	
16. Need for Socio-Economic assessments & community empowerment	**5. Promote Equity& Benefit Sharing to ensure Socio-Economic benefits & financial sustainability.**
17. Community mapping	
18. Community development projects to create livelihood opportunities	
19. Participatory Planning processes needed	**6. Enhance Involvement of Local**

	communities & Stakeholders through Improved Communication, Awareness & Education
20. Local stakeholders to have a key role in PA management & benefits that accrue	
21. Improved communications between national agencies & PA communities; and between PA communities	
22. Public Education & awareness	
23. Policy and Legal Framework	**7. Provide Enabling Laws, Policy & Systems**
24. Better use of indigenous & local knowledge	
25. Mainstreaming PAs across government	
26. Rationalisation of Resources	

Much of the work in developing the Goals, Objectives and Strategic Action Areas was after reflection of the institutional and systems capacity shortfalls and needs, canvassed through the original issue analysis and problem tree analysis exercises.

7.2 Substantiating the Strategic Action Areas

Strategic Action Area 1: Establish & Strengthen National Systems of Protected Areas

This assessment provides a summary of the research, ecological knowledge building and planning for establishing a protected areas network. Research and knowledge management are critical to informing planning and the establishment of protected areas. Similarly ongoing survey, monitoring and evaluation is important to determine changes in threat levels based on new management interventions, whether at the national level policy or via site environmental management plans.

Strategic Action Area 2: Boundary Demarcation and Zoning

Boundary demarcation and zoning issues (land use and conservation zoning) were highlighted frequently during the deliberations. For most of the protected areas, final boundaries are yet to be demarcated. It is a lengthy practice and new priorities and methods will need to be introduced to enable a targeted approach. Often without demarcation operational objectives cannot be implemented and enforcement becomes difficult. For some PAs, natural barriers may dictate that actual boundary demarcation is of lower priority.

The action area calls for the development of criteria to determine priority PAs. This work should also coincide with the development of criteria to assist with PA classification. This in turn will assist in determining multi-criteria that will be needed for land use and conservation area zoning within the PAs.

Strategic Action Area 3: Natural Tourism and Livelihoods

Developing natural tourism opportunities is seen as the most positive livelihoods activity for PAs in the short to medium term. There is a need to explore natural tourism opportunities within the terrestrial as well as the marine areas. Again the criteria that will come from investigating potential natural tourism areas will be helpful in multi-criteria for priority setting and land use and conservation zoning and generation of conservation environmental management plans.

Strategic Action Area 4: Networks and Collaboration

It was clear that collaboration, improved coordination across government and the creation of partnerships were all important for efficient and effective protected area systems development. Collaboration is required at every level including the international, national, district, Suco and sites levels. National level collaboration can be facilitated by inter-government committees and networking

forums. There is also a need for better cohesion between government agencies, development assistance agencies and NGOs.

Collaboration, in the form of co-management regimes such as LMMAs or MPAs have been successful in other SIDS. Greater efforts are to be made to ensure participation with community stakeholders in establishing and management of PAs so that indigenous management regimes can be used where they are beneficial.

Mainstreaming of the SAP as part of the NBSAP, and instigating integrated land use planning will assist with collaborative arrangements. The promotion of the PAs across government and with the affected communities is also needed to improve collaborative efforts.

Strategic Action Area 5: Build Capacity - Establishment criteria for new Protected Areas

Work on criteria for the planning for, establishment and management of PAs needs further effort. It should involve community participation and incorporate consideration of the Areas of Interest. As mentioned the focus on developing multiple criteria for analysis and priority setting will also be helpful for boundary demarcation priority setting, and internal zone planning via the conservation environmental management plans.

Strategic Action Area 6: Build Capacity – Produce Management Plans

Producing Protected Areas Management Plans (conservation environmental management plans) especially for the NKSNP is a priority. It is the final key output that provides the foundations for conservation and decision-making, including enforcement.

Strategic Action Area 7: Build Capacity – Improve Individual and Systems Capacity at DPANP

Improving skills and knowledge of the DPANP human resources, including providing adequate staffing and the appropriate skills and knowledge are critical to the successful planning for, establishment and management of PAs. There are some critical training needs for individuals involved in terrestrial and marine protected area management. Partnerships with key training and education institutions will have to be forged locally, regionally and internationally.

Given the variety of training needs, it is recommended that a training capacity strategy be developed which caters for training also of the DPANP's partner agencies and NGOs. Partnerships between research and tertiary institutions should include capacity development of the UNTL in order to tailor courses to suit the needs of Timor Leste environment and conservation staff.

Strategic Action Area 8: Build Capacity – to advise on Livelihoods

Securing adequate livelihoods opportunities for communities within and those surrounding PAs will be essential to stimulate the acceptance of PA management. This will entail planners and managers getting a better understanding of the socio-economic situation of the many communities affected.

Strategic Action Area 9: Addressing Key Threats

Even armed with a SAP and Capacity building plan there will be continued pressures from key threat to PAs. Many of these key threats are not addressed strategically. Integrated action to address specific threats on PAs will provide good frameworks to reduce the driving forces.

Strategic Action Area 10: Equity and Benefit Sharing

Opportunities to be involved and to experience the benefits of PAs need to be equitable. Socio-economic profiles and community livelihoods assessments are jointly essential to ensure there is equitable access and benefit sharing.

Strategic Action Area 10: Enhancing the Involvement of Local Communities

This is not just a communication matter. Participatory planning and mainstreaming of traditional practices are the cornerstones to successful PA establishment and management. Community empowerment will be essential for ongoing governance

Strategic Action Area 11: Providing the Enabling Environment

This will see the address of the critical institutional and policy gaps for PAs. Commencing with the generation of the new Decree law on PAs, the update of Regulation 19/2000 will provide the primary framework for planning for, establishing and then managing PAs.

Strategic Action Area 12: Use of Local and Indigenous Knowledge

Again a key to local understanding and acceptance of PA Management this work will research means to protect traditional and indigenous knowledge, and recommend the means to maximize access and benefit sharing for any knowledge that permeates from the PAs.

Strategic Action Area 13: Mainstreaming PAs

The success of planning for, establishment and management of PAs is going to be reliant on cohesive actions in other areas of governance. It is important that PA management is mainstreamed into usual government business. Harmonizing with the advancement of integrated land use planning would be most useful, as would the linking of the SAP and NBSAP with the Poverty Reduction Strategic Plan (PRSP). Maximizing incentives will be the key to fruitful to longer term sustainable financing. As such new opportunities such as REDD+ need to be capitalized on.

7. 3 Linkages between key Actions

The need for a holistic approach to the planning for, establishment and management of PAs cannot be overstated. There are many links between the Key Strategic Action Areas, as there are between the key threats and pressures and the challenges for capacity development. Most of the strategic action areas consist of actions that must be informed by outputs from the actions under other strategic actions. It is critical that these are implemented via an integrated framework such that is provided by the SAP. Within the SAP, the Goals established for the DPANP as described in Section 7.1 are melded with the Strategic Action Areas described in Section 7.2, as a means to provide this integrated framework to manage implementation. Communication and coordination are essential ingredients to any integrated decision-making framework.

7.4 Sustainable Finance Planning

Fundamental to the successful implementation of the capacity development action plan will be the development of a sustainable finance plan or strategy.

This capacity development action plan is supported by a budget nominated as a Financial Plan which has been included in tables at **Annex 1** to this document and repeated in Annex 9 of Part 3. The tables coincide with the Log Frame Matrix contained in the Strategic Action Plan (SAP). It provides more detail on the estimated budgets than which is summarized in the SAP.

The line item budget estimates have been made from experience with similar complex projects and reference to the WCMC 'Global Review of Protected Area Budgets and Staff, done for the World Commission on Protected Areas (WCPA - 1999). Initial estimates were considered against the plausibility of securing funds and the absorption capacity of the DPANP given that they are such a small team.

We foresee that this may become the pro-forma for a broader sustainable finance plan for protected areas. The difference being that other opportunities for payment for environmental services will accrue with collegiate work that is being undertaken by others. For instance the countries preparations for

REDD+, which will heavily involve DPANP, should reveal opportunities for consistent funds from good conservation of the remaining forests in Timor Leste.

At this stage the recommended budget is in the order of **USD1,805,000.00** over a 5 year period. This equates to approximately **USD361,000.00 per year** or approximately **USD180 per sq. kilometre per year**. At this level it places funding for PAs near the bottom of the countries reviewed by WCMC [PNG $229 sqk/year; Samoa $231 sqk/ year; Australia $1335 sqk/year; New Zealand $961 sqk/year]. In addition it is forecast that a recurring budget of **$295,500.00** should be provided by the Government of Timor Leste for DPANP personnel and basic administration costs over the five (5) year period. There is no doubt that additional resources will be required over the five (5) year time frame of the SAP, however the absorption capacity of the DPANP and MAF given the current capacity has to be considered. It is suggested that the overall budget estimates be reviewed in Year 2 following assessment of the capacity development from the initial phases of the SAP work.

As with biodiversity conservation work about the globe (in developed and developing countries), the need for work to understand species, communities and the geo-physical systems in which they react, will never stop. It is hard to put an estimate on the costs of such work on the ground, as well as the nurtured training that is required - with any certainty. We can be confident however that for Timor Leste, given the very embryonic status of biodiversity conservation and protected areas planning and management – much more work and finance is required than the sums provided in **Annex 1** to this document and repeated in **Annex 9** of **Part 3**. If the DPANP is able to attract interest in further advanced research and on-the-ground assessments outside of the key capacity work nominated in this plan, then they should pursue this by all means at it all helps in garnishing knowledge and understanding.

8.0 Summary and Conclusions.

8.1 Summary of Findings

This report represents the results of Timor Leste's first protected area system overall capacity needs assessment. It provides a Capacity Development Action Plan (CDAP). It was developed using a participatory process with the integrative development of the Strategic Action Plan (SAP). The process involved participation by a range of stakeholders in protected area management in Timor Leste. To carry out the assessments and subsequent capacity development planning, the Problem Tree Analysis and associated tools were utilized. A series of on-line surveys focused in on the main output required by the TORs being the identification of human resource capacity needs.

This report therefore should be read in conjunction with the Strategic Action Plan (SAP).

The assessment aimed to create a better understanding of main factors affecting Protected Areas, namely:

- The Present Situation: Pressures, threats and vulnerability
- Management regimes and past/ongoing responses
- Systems Effectiveness
- Individual capacity needs

Management gaps include: satisfactory laws and regulations supported by policy; zoning and boundary demarcation, surrounding land use; critical law enforcement, financial support; staff numbers; community engagement; coordination among government agencies; mediation and conflict resolution.

Institutional gaps are described in section 3 and include a series of recommendations for action:

- Lack of conducive legal bases for implementation;
- Lack of commitment;
- Lack of a comprehensive inventory/database;
- Lack of integrated land use planning;
- Inadequate EIA provisions;
- Inadequate training programmes;
- Lack of clear and strategic management activities
- Lack of monitoring & evaluation;
- Inadequate funding; and
- Inadequate conservation mechanisms e.g. incentives for communities.

Systemic gaps are described in section 4 and include a series of recommendations for action:

- Population and urbanization;
- GIS and spatial mapping;
- Data gaps and information systems for decision-making;
- GIS and Spatial Data Coordination and sharing;
- Participation of Local Communities;
- Community based planning systems.

Human Resource Development (or individual) capacity needs are described in section 5. There are a variety of training and skills development areas needed to be availed:

- GIS and information development;
- Project Management;
- Natural Resource Assessment;
- Natural Resource Management;
- Field Operations;
- Land use and socio-economic assessments;

- Socio-economics for livelihoods;
- Natural tourism – livelihoods;
- Education, Awareness and training;
- Policy and Planning;
- Enforcement.

8.2 Recommendations

The Strategic Action Plan (SAP) provides details on the strategic actions to be undertaken over the next five (5) years to build capacity for protected areas planning, establishment and management in Timor Leste. It is shaped around the three capacity areas, that is, institutional, systemic (or societal) and individual capacity development. It is also formulated to address the 13 key strategic actions advocated by the PoWPA under the UNCBD Secretariat.

It is recommended that the budgets summarized in section 7.4 above and detailed in **Annex 1** to this document, be followed in developing a series of proposals to development assistance agencies to garnish financial support for the strategic actions, and capacity development as contained in this report. The priority should be in securing additional funding for the successful generation and implementation of the NKSNP Conservation Environmental Management Plan (CEMP), which will be the first management plan for protected areas in Timor Leste. This work should set the model for subsequent management plans for the remaining 29 Protected Areas.

It is further recommended that the CDAP be referred to training and research institutions in the region highlighting the training needs summarized in section 6 – as a means to package up options for vocation and tertiary based training delivered primarily in-country. This further research should assist the DPANP in planning their options for training and confirming the likely costs for training of national and sub-national staff, as well as key members of the community involved in delivering PA outcomes.

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Annex 1: Financial Plan – Log Frame Matrix

DPANP Overall Management						
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds1**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
0. PROJECT MANAGEMENT COSTS						
Personnel Costs	DPANP	**Primary:** Govt of Timor Leste **Secondary:** UNDP, UNESCO	40,000.00	40,000.00	140,000.00	220,000.00
Office & other basic Field Equipment2	DPANP		15,000.00	7,500.00	15,000.00	37,500.00
Travel Costs	DPANP		4,000.00	3,000.00	3,000.00	10,000.00
Admin/Committee Operational Costs	DPANP		2,000.00	1,500.00	1,500.00	5,000.00
Publications, Monitoring and Evaluation Costs	DPANP		7,000.00	8,000.00	8,000.00	23,000.00
Total for Overall Management			**$ 68,000.00**	**$60,000.00**	**$167,500.00**	**$295,500.00**

LONG-TERM GOAL 1: Establish and Strengthen National Systems of Protected Areas						
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 1 Flora and Fauna Surveys	DPANP	CI, TNC, PoWPA, GEF, UNEP, LifeWeb, IUCN	125,000.003	65,000.00	140,000.00	330,000.00
Activity 2 Demarcate Boundaries	DPANP MAF Fisheries	CTI, UNDP, GEF, PoWPA	37,500.00	25,000.00	50,000.00	112,500.00
Activity .3 Explore Natural Tourism - Marine	DPANP MAF Fisheries	CI, TNC, CTI,	12,000.00	10,000.00	23,000.00	45,000.00
Activity 4 Explore Natural Tourism - Terrestrial	DPANP	CI, TNC, UNESCO	12,000.00	10,000.00	23,000.00	45,000.00
Total for Strategic Action Area			**$186,500.00**	**$110,000.00**	**$236,000.00**	**$532,500.00**

1 This column should be update as this CDAP is circulated and additional resources are secured.
2 Refer to Table 3 of the Capacity Development Action Plan: Equipment, Data and Software needs. Figures do not include costs of remote sensing imagery which is incorporated within Activity 1 of Goal 1 above to the value of $65,000.
3 Includes $65,000 budget for initial remotely sensed imagery to assist with Flora and Fauna survey, characterization mapping, CEMP and generating guides & criteria for future PAs.

LONG-TERM GOAL 2:	Establish and Strengthen Networks and Improve Collaboration					
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 5: Improve Coordination across Government & Community	DPANP Govt of Timor Leste	UNDP GEF	4,000.00	4,000.00	4,500.00	12,500.00
Activity 6: Improve Communication	DPANP MAF NGO	TBC	4,000.00	4,000.00	7,000.00	15,000.00
Activity 7: Promote & Market PAs	DPANP	TBC	4,000.00	4,000.00	7,000.00	15,000.00
Total for Strategic Action Area			**$12,000.00**	**$12,000.00**	**$18,500.00**	**$42,500.00**

LONG-TERM GOAL 3:	Build Capacity for the Planning, Establishment and Management of Protected Areas					
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 8: Develop Criteria for establishing new PAs	DPANP	CI, TNC, PoWPA, GEF, UNEP, LifeWeb, IUCN	15,000.00	7,500.00	15,000.00	37,500.00
Activity 9: Produce PA Management Plans	DPANP MAF NGO	CI, TNC, LifeWeb	80,000.00	35,000.00	32,500.00	147,500.00
Activity 10: Improve Individual Capacity of DPANP	DPANP	CI, TNC, UNDP GEF	35,000.00	30,000.00	75,000.00	140,000.00
Activity 11: Improve Systems Capacity of DPANP	DPANP MOF MAF AG's Office	CI, TNC, UNDP GEF	25,000.00	25,000.00	45,000.00	95,000.00
Activity 12: Develop capacity to advise on Livelihoods Opportunities	DPANP MOF	CI, TNC, UNDP GEF	10,000.00	25,000.00	35,000.00	70,000.00
Total for Strategic Action Area			**$165,000.00**	**$122,500.00**	**$202,500.00**	**$490,000.00**

LONG-TERM GOAL 4:	Prevent and Mitigate Negative Impacts of Key Threats to Protected Areas					
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 13: Better understanding of Key Threats at the village level	DPANP	AusAID	12,500.00	12,500.00	20,000.00	45,000.00
Activity 14: Understanding habitat destruction & land conversion	DPANP MAF NGO	AusAID	7,500.00	12,500.00	10,000.00	30,000.00
Activity 15: Understanding Bushfire Hazards	DPANP	AusAID	7,500.00	15,000.00	17,500.00	40,000.00
Activity 16: Understanding Alternative Land Management	DPANP	TBC	7,500.00	15,000.00	12,500.00	35,000.00
Activity 17: Understanding the impacts of illegal logging & cutting	DPANP	TBC	10,000.00	15,000.00	30,000.00	55,000.00
Activity 18: Understanding the extent of Invasive Alien Species.	DPANP	AusAID	7,500.00	15,000.00	12,500.00	35,000.00
Total for Strategic Action Area			**$52,500.00**	**$85,000.00**	**$102,500.00**	**$240,000.00**

LONG-TERM GOAL 5:	Promote Equity and Benefit Sharing to ensure socio-economic benefits and Financial Sustainability					
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 19: Undertake Socio-Economic Assessments	DPANP MAF MOF	CI, TNC, UNDP GEF	30,000.00	25,000.00	50,000.00	105,000.00
Activity 20: Undertake Community Mapping	DPANP MAF	CI, TNC, UNDP GEF	10,000.00	10,000.00	10,000.00	30,000.00
Activity 21: Community development pilots	DPANP MAF	CI, TNC, UNDP GEF	12,000.00	25,500.00	40,000.00	77,500.00
Training						
Total for Strategic Action Area			**$52,000.00**	**$60,500.00**	**$100,000.00**	**$212,500.00**

LONG-TERM GOAL 6: Enhance Involvement of Local Communities and Relevant Stakeholders through improved Communication, Education and Public Awareness.						
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 22: Improve Communication with Protected Areas communities	DPANP MAF MOF	TBC	30,000.00	17,500.00	20,000.00	67,500.00
Activity 23: Enhance participatory planning at the village level		TBC	20,000.00	30,000.00	17,500.00	67,500.00
Total for Strategic Action Area			**$50,000.00**	**$47,500.00**	**$37,500.00**	**$135,000.00**

LONG-TERM GOAL 7: Provide Enabling laws, Policy, Institutions and Systems for Protected Areas						
Outcome/Strategic Action Areas	**Responsible Party**	**Potential Source of Funds**	**Year 1 (Amount $US)**	**Year 2 (Amount $US)**	**Years 3-5 (Amount $US)**	**Total (Amount $US)**
Activity 24: Improve the legal & policy bases for PAs	DPANP Consultant	TBC	30,000.00	25,000.00	10,000.00	65,000.00
Activity 25: Protect & enhance use of indigenous and local knowledge	DPANP Consultant	TBC	15,000.00	10,000.00	5,000.00	30,000.00
Activity 26: Mainstream PA planning & management	DPANP Consultant	TBC	15,000.00	20,000.00	22,500.00	57,500.00
Total for Strategic Action Area			**$60,000.00**	**$55,000.00**	**$37,500.00**	**$152,500.00**
GRAND TOTAL			**$578,000.00**	**$492,500.00**	**$734,500.00**	**$1,805,000.00**