



WEALTH ACCOUNTING AND VALUATION OF ECOSYSTEM SERVICES
(WAVES) MADAGASCAR

PRIORITY POLICY OBJECTIVES AND WORKPLAN FOR WAVES PHASE 2 ACTIVITIES IN MADAGASCAR

20 March 2012

Madagascar WAVES Steering Committee

1. WAVES in Madagascar

The overall goal of the Wealth Accounting and Valuation of Ecosystem Services (WAVES) Global Partnership is to support Governments in partner countries to achieve sustainable development by expanding their national accounts systems to include natural resource values for use both in the development of macro-economic indicators, and to facilitate monitoring of development progress, and for natural resource management.

Madagascar is one of five developing countries¹ that have been selected as partner countries to participate in the WAVES Global Partnership - an initiative that is being led by the World Bank. Madagascar was selected for involvement in WAVES because although Madagascar's natural resources potentially represent a substantial source of wealth to the country, no quantitative analyses of the scale of this wealth exist. There is thus virtually no integration of natural capital values in the policy framework for natural resource management, or for the transformation of economic benefits provided by natural capital into financial revenues that could facilitate the progress of Madagascar along a sustainable development pathway.

The Government of Madagascar has signaled its strong commitment to the WAVES Partnership through Cabinet endorsement of Madagascar's involvement. A Madagascar WAVES Steering Committee – which is co-chaired by the Ministry of Economy and Industry and Conservation International – has been established, and is active and engaged in Partnership activities. This Steering Committee has played a key role in the development and endorsement of the WAVES Phase 2 Workplan that is presented in this Policy Note, and is currently working to ensure that the outcomes of partnership activities in Madagascar are presented at the Rio+20 United Nations Conference on Sustainable Development in June 2012.

2. Macro-economic and Environmental Context in Madagascar

Initial estimates suggest that natural capital accounts for roughly half of Madagascar's total wealth²; agricultural land accounts for the highest proportion, followed by forestland and timber. However, Madagascar is experiencing declining total wealth and there are concerns for the sustainability of the current development pathway. Most natural resource sectors are made up of a number of sub-sectors and contribute both to national economic development and to the livelihoods of the 20 million, poor, predominantly rural population: Over three quarters of the population depends on natural resources for their livelihoods predominantly through fishing and agriculture.

As indicated in Table 1 below, the tertiary sector is the predominant sector in the Malagasy economy representing 52.9 percent of GDP in 2010. Transport and service activities dominate the GDP of the tertiary sector and while tourism continues to play an important role in this sector, its growth has been significantly affected by the current political situation. Industrial economic activities are dominated by food, beverage and energy production. In 2010, the contribution from transformation of primary products remained relatively weak. An analysis of industrial economic activity reveals the growing importance of the mining sector, in particular in terms of direct foreign investment with investments by two large-scale mining operations (Rio Tinto's ilmenite mining operation in the south-east and Ambatovy's nickel and cobalt mining operation in the east) representing more than 65 percent of GDP. The contribution of these activities to the fiscal revenues of the State is expected to increase from 1 percent to 18 percent by 2018. The primary sector accounts for 25.7 percent of the national GDP, with agricultural activity the most important contributor, followed by livestock and fisheries and forestry activities. Rice production is the most important agricultural activity, and while the contribution of fisheries has had negative growth since 2008, the forestry sector's contribution has grown by 30.4 percent annually due largely to the exportation of precious timber.

¹ Partner countries are Madagascar, Botswana, Philippines, Costa Rica and Colombia

² Based on an initial analysis that includes forestland, protected areas, agricultural land and fisheries. No data was available on sub-soil assets for inclusion in this preliminary estimate; however, the inclusion of sub-soil assets would increase the share of natural capital in terms of total wealth.

Table 1: Structure of Madagascar's Economy

	2008	2009	2010
Population	19 071 811	19 601 026	20 142 015
GDP (USD millions)	8 041	8 365	9 132
GDP (US\$ per capita)	469	478	453
Structure of GDP (% of total)			
Primary Sector	22.3%	26.7%	25.7%
Agriculture	13.4%	14.9%	14.1%
Forestry	5.2%	5.4%	4.4%
Livestock and fisheries	3.7%	6.5%	7.2%
Non-primary Sector	77.7%	73.3%	74.3%
Food and agricultural feed industries	3.6%	3.9%	4.4%
Extractive industries	0.1%	0.2%	0.2%
Timber industries	0.2%	0.2%	0.1%
Production of mineral and metal products	1.7%	1.7%	1.4%
Transformation industries	7.0%	7.0%	6.8%
Other industries	1.9%	1.8%	1.8%
Services and others	54.6%	51.5%	52.9%

Source: Institut National de la Statistique de Madagascar (Instat), 2012

In terms of its natural resources Madagascar is perhaps best known for its unrivalled biodiversity. The country contains 5 percent of global biodiversity on just 0.4 percent of the world's landmass and has extremely high levels of endemism, particularly amongst terrestrial vertebrates. Despite its relatively small size, Madagascar harbors a wide diversity of vegetation types ranging from semi-arid spiny forest in the south, to dry forests in the west and far north and humid forests along the east coast. The majority of remaining native vegetation cover (estimated at 9 to 11 million hectares) is contained in the national protected area network that covers 12 percent of the national territory and that attracts up to 130,000 (mostly foreign) visitors per year. Forests are an important source of timber and non-timber forest products for both commercial and subsistence uses, and provide important watershed values, particular along the eastern escarpment. Current deforestation rates are in the order of 0.53 percent per year with the main causes of deforestation being slash-and-burn agriculture and collection of fuelwood and charcoal production. In the last three years, illegal logging of precious timber has increased due to governance failures triggered by the onset of the political crisis in early 2009.

Marine and coastal biodiversity resources are also important, with coral reefs in the south, northeast and northwest of the country, and mangroves along the west coast, providing important coastal protection and habitat values. An increasing number of marine protected areas are being established, often with the dual aims of conserving important conservation targets and managing stocks of natural resources including fish, octopuses and sea cucumbers that are exploited by local communities, and that have been subject to significant stock declines in recent years.

Environmental pollution levels are relatively low due to the lack of a well-developed industrial sector. However, urban pollution associated with poor municipal solid and liquid waste management and small-scale mining that is largely unregulated causes localized impacts. The large-scale mining sector is developing rapidly and will require robust environmental regulation and control.

The country is highly vulnerable to natural disasters - including cyclones, droughts and flooding; it is estimated that one quarter of the population currently lives in zones at high risk of natural disasters.

The intensity and/or frequency of such events are expected to increase with the effects of global climate change.

The policy framework for natural resource management is outdated and not based on an appreciation of the true contribution of natural capital to national or local economic development. With population growth of approximately 2.6 percent per year, historic pressures such as deforestation for agriculture and collection of fuelwood, informal small-scale mining and mining rushes, and overexploitation of marine resources continue and the current policy framework has proven unequal to the task of effectively managing such threats. Furthermore, the policy framework is not equipped to deal with new challenges that have arisen in the last decade, such as the rapid development of a large-scale mining sector, the recent significant expansion of the protected area network that has no ongoing, guaranteed sources of funding, or the increasing and conflicting pressures of over-exploitation, tourism development and climate change on fisheries and coastal resources.

3. Preparation of Phase 2 WAVES Workplan in Madagascar

The key outcome of Phase 1 WAVES activities in Madagascar, which have been underway since February 2011, has been the development of the Phase 2 Workplan for the period 2012 to 2015. The Phase 2 Workplan has been prepared in collaboration with the Madagascar WAVES Steering Committee and other stakeholders, with technical support from the World Bank. It has been informed by a range of technical activities including a literature review of previous research into ecosystems services valuation, an initial evaluation of the treatment of natural resources in the System of National Accounts (SNA), and two detailed case studies that are currently being finalized – one focused on water services in the eastern humid forest ecosystems, and one focused on policy and economic aspects of the fisheries sector.

The approach that was adopted for the development of the WAVES Phase 2 Workplan in Madagascar was influenced by the current political context. In the lead-up to elections, which are envisaged to be held in 2013, a transition Government is in place. The transition Government is focusing on day-to-day management of the country rather than strategic or long-term development planning and as such, has neither formally adopted the current National Poverty Reduction Strategy (the Madagascar Action Plan - MAP), nor announced any plans to replace it with a new national strategy. In the absence of a national multi-sector development framework, the Phase 2 Workplan focuses on priority sector-level policy objectives. In the longer term, should the political situation be resolved and a decision taken to prepare a new national poverty reduction strategy or socio-economic development strategy, the Phase 2 Workplan could be reviewed and modified in consultation with Government in order to support such a process.

In order to develop the Phase 2 Workplan, a long-list of priority policy objectives and activities was identified in consultation with the WAVES Informal Working Group (the predecessor of the WAVES Steering Committee). These policy objectives and activities were subsequently discussed and refined during a series of high-level meetings with sector agencies based on the following criteria: (i) alignment with current sector-level Government priorities; (ii) the ability to generate apolitical information that would be beneficial for a wide range of eventual policy development activities (particularly for short-term activities carried out in the period of political transition); and (iii) political and technical feasibility of achieving concrete results in the four year WAVES Phase 2 period. A proposed Phase 2 Workplan was compiled as a result of these consultations, and the Workplan subsequently received the endorsement of the WAVES Steering Committee in February 2012. The following section describes the rationale for the policy objectives and activities contained in the Workplan.

4. Policy Objectives included in WAVES Phase 2 Workplan

Policy Objective 1 - Macro-economic Indicators

New macro-economic indicators that integrate natural resource values and that are complementary to existing indicators, are developed to guide and facilitate monitoring of sustainable development.

Madagascar's system of national accounts and macro-economic indicators make scant reference to natural capital values. An initial evaluation of the treatment of natural resource indicators in the system of national accounts (SNA) has concluded that while data on volume and value of production is available for certain sub-sectors (e.g. large scale mining, large-scale forestry, large-scale and small-scale fisheries and agriculture), data on potentially important small-scale and informal activities in the mining, forestry and fisheries sectors is missing, and there is little information on royalties, fees and taxes for natural-resource based sectors. A priority activity for WAVES Phase 2 will be to undertake a more comprehensive review of the SNA that not only evaluates the current situation, but also makes concrete recommendations for its improvement in terms of future integration of natural resource issues.

Progressive inclusion of natural capital values in the system of national accounts for priority natural resource issues, and development of macro-economic indicators will thus improve the country's ability to: (i) monitor the sustainability of its economic development; and (ii) manage key natural resource based sectors. For the purposes of WAVES Phase 2 activities, the focus will be on developing new, complementary macro-economic indicators including adjusted net savings (ANS), adjusted net national income (ANNI) and comprehensive wealth. A progressive approach to development of these macro-economic indicators will be applied. In the short term, existing preliminary estimates prepared by the World Bank will be refined and adjusted using available country-specific data. In the medium to long term, the outcomes of natural resource accounting activities carried out in WAVES Phase 2 will be progressively included to further refine the indicators. Technical activities will be complemented by capacity building both in the development and maintenance of these indicators, as well as in their use and interpretation.

The proposed WAVES Phase 2 activities in Madagascar related to this policy objective are:

- *Technical evaluation of system of national accounts (SNA) and recommendations for improvement for integration of natural capital into SNA.*
- *Continued incremental improvement of macro-economic indicators (ANS, ANNI & comprehensive wealth) throughout WAVES Phase 2 including mining sector, fisheries sector, tourism and water accounts that are generated through other WAVES components.*

Policy Objective 2 - Mining Sector

Information on the value of sub-soil assets is generated to contribute to medium to long-term policy dialogue on rent recovery, distribution and reinvestment.

With its extensive mineral and non-mineral sub-soil assets, Madagascar is recognized as a geologically rich country with resources that have the potential to generate large economic gains over a relatively short period. With the recent development of the first two large-scale mining operations in Madagascar, the formal mining sector's contribution to GDP is expected to grow from less than 1 percent to 15 percent in coming years. Numerous other large-scale mining operations are in the exploration phase throughout the country and Madagascar is considered to be on the cusp of a major increase in large-scale mining activities. The informal sector, which is focused predominantly on gold

and gemstones, provides permanent or seasonal employment for up to 500,000 people and generates significant economic benefits that are not captured by the Government or the Malagasy population.

The transformation of the country's non-renewable mineral natural capital to other productive forms of capital, requires a strong and consensual policy framework with policy needs in four areas³: (i) policies to promote efficient resource extraction in order to maximize resource rent generated by the extractive sector; (ii) a system of taxes and royalties that allows Governments to recover equitable and proportionate shares of rents; (iii) a clear policy for the investment of resource rents in productive assets; and (iv) policies to control adverse effects of resource extraction on other components of natural capital. Currently little information on the economic values of mineral resources exists to underpin policy dialogue on rent recovery, distribution and reinvestment.

Royalties captured by the State from existing operations are low compared to other countries. Despite Madagascar's position as a pioneer in terms of revenue distribution to regional and local communities, conflicts exist in terms of the proportion of revenues earmarked for different levels of the administration and the mechanisms used for revenue sharing. Many private sector operators have expressed their willingness to participate in dialogue on these issues through their implication in the EITI process, which is active in Madagascar and which has started engaging stakeholders in dialogue on the sector wide policy framework. However, operators have also expressed frustration at the weak policy framework and inconsistent political decisions that have resulted in the suspension of exploration and development activities in the last few years. Given the growing awareness on the part of communities and civil society regarding the potential economic benefits of mining activities, and the growing interest of international companies in Madagascar's mineral resources, these issues are expected to remain at the forefront of the political debate regardless of the outcome of the current political situation.

The proposed WAVES Phase 2 activities in Madagascar related to this policy objective are:

- *Development of satellite accounts for the mining sector to feed into macro-economic indicators based on the recently adopted SEEA methodology*
- *Analysis of issues related to rent recovery, distribution and reinvestment*

Policy Objective 3 – Managing Watersheds and Water Resources

Information on the value of water resources is generated to contribute to regional and national integrated water resources management planning.

At the national level, internal renewable water resources are in the order of 337 cubic kilometers per year, 99 percent of which is surface water and the remaining 1 percent is groundwater. Total water use is estimated at 14.97 cubic kilometers per year, or 4.5 percent of renewable water resources. With 1.1 million hectares of irrigated cropland, the agricultural sector has the highest water use (estimated at 96 percent in 2000), followed by municipal use (3 percent) and industrial use predominantly for the textile, hydroelectricity generation and mining industries (2 percent). However, water resources and availability throughout Madagascar are highly heterogeneous because of marked regional differences in rainfall. The east and north of the country typically have abundant rainfall, while the west and south are drier and experience recurrent water stress. National level data therefore mask important regional disparities, however basin level water balance analyses have not been carried out. Initial basin level analyses of climate change effects on water resources are underway, will also eventually need to be taken into account in water balance analyses. UNDP has recently completed detailed inventories of water accessibility and demand in the south of the country with a view to developing basin level water

³ World Bank. 2011. *The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium*. World Bank, Washington DC, pp 221.

management plans. Discussions are ongoing as to the possibility of a partnership between UNDP and WAVES to facilitate collaboration in the development of such plans in the south of the country, with eventual replication of the process in the north.

Madagascar's national water policy dates from the mid 1990s and was developed without full consideration of the economic values of water resources, nor of equity considerations in terms of pricing policy and availability to water. The Government is interested in the application of the principles of integrated water resources management, but has not yet developed national level integrated water basin management policy or basin level plans. Agricultural water use, water use for mining, and hydroelectricity generation are issues of particular interest to integrated water resources management planning. Madagascar has significant untapped potential in terms of hydroelectricity generation and the surface of irrigated cropland, and the development of the nascent large-scale mining industry will depend on access to water resources. Policy development and pricing decisions could be strengthened by a clearer understanding of the relative economic contribution of water to these different user groups.

The proposed WAVES Phase 2 activities in Madagascar related to this policy objective are:

- *Development of national and river basin level physical and monetary water accounts, including economic analyses of hydropower potential and analyses of climate change effects*

Policy Objective 4 – Value of Protected Area and Forest Ecosystems

Information on the values of protected areas and forests is generated to contribute to sustainable financing of national protected area network and forestry sector policy dialogue.

Total native forest cover in Madagascar is in the order of 9.0 to 10.7 million hectares of which 6.9 million hectares is included in the national protected area network. Madagascar's forestry resources play an important role in water and sediment regulation and water supply as well as provision of timber and non-timber forest products for commercial and subsistence use. Despite reductions in clearing rates of certain forest types, deforestation continues throughout the country mainly through slash and burn agriculture and fuelwood collection. Recent attention has been focused on the illegal exploitation of rosewood and ebony timber that has escalated during the current political crisis. Exportation of this timber has generated significant financial returns for a small number of private timber barons, and significantly lower revenues for the Government. Forestry sector policy and the accompanying legislative framework is extremely weak and is not based on a clear understanding of the values of services provided by forests including watershed values, timber and non-timber forest products.

Madagascar's protected area network harbors unrivalled biodiversity, is the main draw-card for international tourists, provides essential watershed benefits to downstream users, and harbors significant forest carbon stocks. However, the network has not achieved financial autonomy and relies heavily on external aid for its operation. The network represents a largely untapped source of economic benefits that, when converted into financial returns, could be used both to improve its own financial sustainability, and for the natural resources sector more generally. The current annual operating cost of the network is roughly US\$14 million: By way of comparison, the potential economic benefits from tourism and watershed across the entire network are in the order of US\$48 million per year, of which US\$28 million could be generated by ecotourism, and US\$20 million by watershed protection⁴. Current capture of these economic benefits is very low, with only US\$0.5 million/year earmarked for protected area management. Less is known about the economic values of

⁴ In USD (2003) and based on a network size of 6.9 million hectares, sourced from Carret & Loyer. 2003. *Comment financer durablement les aires protégées à Madagascar?* Agence Française de Développement, Paris.

carbon stocks but research into the biophysical aspects of such stocks is relatively well advanced.

The proposed WAVES Phase 2 activities in Madagascar related to this policy objective are:

- *Implementation of tourism visitor and enterprise surveys, preparation of ecotourism accounts and analysis*
- *Valuation of additional ecosystem services (carbon, timber, hydrological, erosion control and other services) in priority protected areas to feed into fiscal policy analysis*

Objective 5 - Coastal Zone Management

Information on values of coastal and marine resources, including the fisheries sector, is generated to contribute to the operationalization of ICZM strategy and long-term fisheries sector policy dialogue.

Despite the importance of fisheries and coastal resources to the national economy and livelihoods and subsistence needs of poor households, the current policy and legislative framework is incoherent and incomplete and is not based on a clear understanding of the value of the country's resources. The national sector strategy expired in 2008 and there is no clear proposal to develop a single consolidated strategy to replace it. Additionally, proposed new sector-wide legislation has failed to gain consensus amongst stakeholders. Agreements with foreign operators are not based on a clear understanding of resource value and are not subject to ongoing monitoring. The shrimp industry is an important element of the sector, both in terms of revenues generated and employment, but significant challenges remain in its management and conflicts between industrial and traditional shrimp fishing activities exist. Aquaculture, which is an increasingly important activity, receives only limited treatment in the policy framework. A number of stakeholders including the European Union and the FAO are initiating policy dialogue in the sector and discussions are ongoing as to the possibility of a partnership between these initiatives and WAVES to allow integration of economic considerations into such activities.

Legislation for integrated coastal zone management (ICZM) has existed since 2010 and has received strong political support through the creation of a high-level national ICZM Committee. However, little translation of the policy into tangible actions on the ground has been carried out in the form of regional or local level ICZM planning despite its potential as a tool to resolve conflicting resource management and land use issues in the coastal zone. Regional ICZM Committees have been put in place in pilot zones in Madagascar, but these committees lack the capacity to integrate ecosystem accounting into policy and action plan formulation. Simultaneously, NGOs are working with local communities to develop local protected areas and local natural resource management contracts that ideally would be integrated into an overall national vision for the sector, but no guiding policy exists for such activities. Research into climate change effects in the coastal zone has been limited to date, but initial results combined with the results of global research indicate that coral bleaching and mangrove dieback could significantly affect coastal and marine resources.

The proposed WAVES Phase 2 activities in Madagascar related to this policy objective are:

- *Development of fisheries sector account to encompass large-scale commercial, small-scale commercial and subsistence fisheries*
- *Implement ecosystem accounting in south-west pilot zone including fisheries, mangrove values (timber and NTFP), habitat and coastal protection values of coral reefs and mangroves, tourism (from work under Objective 4) and climate change effects*
- *Scaling up of ecosystem accounting approach to other coastal regions*

5. Madagascar WAVES Phase 2 Workplan

The Phase 2 Workplan has been structured around five technical and two cross-cutting components as shown in Table 2. The total estimated budget for the Phase 2 Workplan is US\$1.45 million. Annex 1 contains the detailed Phase 2 Workplan.

Table 2: Summary of WAVES Phase 2 Workplan

Component	Policy Objective	Expected Outputs	Estimated Budget (US\$)
1. Macro-economic indicators	Develop macro-economic indicators to complement existing indicators, and guide sustainable development and macro-economic monitoring	Macro-economic indicator development and annual revision including adjusted net savings (ANS), adjusted net national income (ANNI) and comprehensive wealth	75,000
2. Mining sector	Contribute to medium to long-term policy dialogue on rent recovery, distribution and investment	Satellite account development for proven resources in large-scale mining sector and integration into macro-economic indicators	75,000
3. Managing watersheds and water resources	Contribute to regional and national integrated water resources management planning	National and river basin level monetary and physical accounts for water resources and integration into macro-economic indicators	310,000
4. Value of protected area & forest ecosystems	Contribute to sustainable financing of national protected area network and forestry sector policy dialogue	Ecotourism accounts and integration into macro-economic indicators Analysis of combined ecosystem service values in selected protected areas to feed into fiscal policy analysis	150,000
5. Coastal zone management	Contribute to operationalization of ICZM strategy and long term fisheries sector policy dialogue	Fisheries sector accounts and integration into macro-economic indicators Piloting of ecosystem accounting approach to Integrated Coastal Zone Management in south-west and replication to other regions	300,000
6. Capacity Building and Communications (cross-cutting)		Technical training, awareness raising and communications activities	140,000
7. Project Management, Coordination and Oversight (cross-cutting)		Steering Committee and Technical Working Group operation Project management and technical coordination	400,000
TOTAL ESTIMATED BUDGET			1,450,000

6. Institutional Arrangements for Implementation of WAVES Phase 2 Workplan

Oversight of the Phase 2 Workplan implementation will be provided by the Madagascar WAVES Steering Committee. The Steering Committee is co-chaired by the Secretary-General of the Ministry of Economy and Industry and the Regional Vice-President of Conservation International and comprises high-level representatives of the Government, civil society and the private sector. The Steering Committee will provide high-level supervision and strategic guidance on Phase 2 activities and the co-chaired will represent Madagascar in international meetings and forums. It is envisaged that the Steering Committee will progressively establish one or more issues-based Technical Working Groups that will contribute to the implementation of Phase 2 activities. The World Bank will provide technical support and coordination services to Phase 2 activity implementation, as well as secretariat services to the Steering Committee.

7. Next Steps

The current focus of WAVES activities in Madagascar is twofold: (i) ensuring readiness for commencement of Phase 2 activities; and (ii) preparing for the presentation of WAVES Madagascar at Rio+20. Technical readiness activities include detailed budget planning and scheduling, preparation of the Terms of Reference for the Steering Committee and initial technical activities, and development of a country-specific Communications Strategy. Rio+20 preparation activities include ongoing liaison with the Rio+20 national focal point and other stakeholders, and preparation of materials to be presented by Madagascar at the summit in June 2012.

Annex 1: Madagascar WAVES Phase 2 Workplan

Timeframe	Activities	Indicative Budget (USD)	Comments
Component 1 - Macro-economic indicators			
<i>Objective: New macro-economic indicators that integrate natural resource values and that are complementary to existing indicators, are developed to guide and facilitate monitoring of sustainable development (adjusted net savings (ANS), adjusted net national income (ANNI) & comprehensive wealth)</i>			
<i>Short term (Year 1)</i>	<ul style="list-style-type: none"> Technical evaluation of system of national accounts (SNA) and recommendations for improvement for integration of natural capital into SNA Continued revision of macro-economic indicators (ANS, ANI & comprehensive wealth) based on Year 1 results including mining sector accounts 	75,000	<p>This activity will build on existing World Bank estimates for these indicators.</p> <p>An incremental approach will be taken whereby initial estimates are made with existing data across the priority natural resource issues, and progressive refinement of estimates will be carried out as the results of the other project activities become available.</p> <p>Training will be provided to Instat and sector ministries to assist them in data collection, management and analysis tasks.</p>
<i>Medium term (Years 2 & 3)</i>	<ul style="list-style-type: none"> Continued revision of macro-economic indicators (ANS, ANI & comprehensive wealth) based on Year 2 & 3 results including fisheries and ecotourism accounts 		
<i>Long term (Year 4+)</i>	<ul style="list-style-type: none"> Continued revision of macro-economic indicators (ANS, ANI & comprehensive wealth) based on Year 4 results including water sector accounts 		
Component 2 - Mining sector			
<i>Objective: Contribute to medium to long-term policy dialogue on rent recovery, distribution and reinvestment</i>			
<i>Short term (Year 1)</i>	<ul style="list-style-type: none"> Evaluation of existing available data against SEEA methodology for mineral resources accounting Develop SEEA mining sector accounts using existing data for proven resources 	75,000	<p>Mineral resource accounting will be based on the recently adopted methodology in the SEEA that focuses on proven resources.</p> <p>Activities under this component will necessitate close collaboration with the private sector through the Chamber of Mines.</p>
<i>Medium term (Years 2 & 3)</i>	<ul style="list-style-type: none"> Continued data collection and improvement of mining sector accounts 		
<i>Long term (Year 4+)</i>	<ul style="list-style-type: none"> Continued data collection and improvement of mining sector accounts 		
Component 3 - Protection of watersheds			
<i>Objective: Contribute to regional and national integrated water resources management planning</i>			
<i>Short term (Year 1)</i>	<ul style="list-style-type: none"> Assessment of data needs for biophysical land and ecosystem accounts In partnership with UNDP prepare physical water accounts for southern basins and assess data availability for monetary accounts Prepare national water resources accounts using available data in line with SEEA methodology and assessment of data gaps and needs 	310,000	<p>Activities carried out under this component will feed into Component 1 related to macro-economic indicators, Component 4 related to protected area values and possibly Component 5 related to integrated coastal zone management.</p> <p>The activities proposed under this component are proposed to be carried out in partnership with UNDP and other stakeholders working in the water sector. Further discussion with these partners on the scope of activities will be required to allow refinement of the workplan and budget.</p>
<i>Medium term (Years 2 & 3)</i>	<ul style="list-style-type: none"> Continue preparation of physical and monetary accounts for southern basins in partnership with UNDP Analyze likely climate change effects to hydrology in key southern basins and determine effects on water resources accounts Plan and begin implementation of replication of activities for northern basins 		
<i>Long term (Year 4+)</i>	<ul style="list-style-type: none"> Continue implementation and replication of activities in northern basins and develop national water accounts 		

Timeframe	Activities	Indicative Budget (USD)	Comments
Component 4 – Value of protected area and forest ecosystems			
<i>Objective: Contribute to sustainable financing of national protected area network and contribute to forest sector policy dialogue</i>			
<i>Short term (Year 1)</i>	<ul style="list-style-type: none"> Plan and pilot national tourism visitor surveys and enterprise surveys Prepare forest and blue carbon economic valuation 	150,000	<p>The activities under this component related to tourism activities will feed into Component 1 related to macro-economic indicators, and Component 5 related to coastal zone management.</p> <p>Carbon valuation analyses will in the first instance focus on protected area level analyses rather than national level analyses due to data availability constraints.</p>
<i>Medium term (Years 2 & 3)</i>	<ul style="list-style-type: none"> Implement tourism visitor and enterprise surveys, prepare ecotourism accounts and analyse Begin valuation of additional ecosystem services (carbon & watershed values) in selected protected areas to feed into fiscal policy analysis 		
<i>Long term (Year 4+)</i>	<ul style="list-style-type: none"> Complete valuation of additional ecosystem services (carbon & watershed values) in selected protected areas to feed into fiscal policy analysis 		
Component 5 - Coastal zone management			
<i>Objective: Contribute to operationalization of ICZM strategy and long term fisheries sector policy dialogue</i>			
<i>Short term (Year 1)</i>	<ul style="list-style-type: none"> Technical evaluation of data gaps and status of policy initiatives underway by partners e.g. fisheries production surveys and planned fisheries sector census Expanded collection of economic data for commercial fishing through private sector dialogue Commence preparation of SEEA fisheries sector accounts using existing data Plan for ecosystem accounting in south-west pilot zone including fisheries, mangrove values (timber and NTFP), habitat and coastal protection values of coral reefs and mangroves, and climate change effects 	300,000	<p>There are a number of initiatives underway in the fisheries and coastal resources sector including the EU funded Smartfish, AFDB funded sector survey and work by NGOs in the southwest. Opportunities to collaborate with these actors will be explored during detailed workplan development.</p>
<i>Medium term (Years 2 & 3)</i>	<ul style="list-style-type: none"> Continued data collection and improvement of fisheries sector accounts for large-scale commercial, small-scale commercial and subsistence fisheries Begin to implement ecosystem accounting in south-west pilot zone Plan to implement ecosystem accounting approach in other regions 		
<i>Long term (Year 4+)</i>	<ul style="list-style-type: none"> Continued data collection and improvement of fisheries sector accounts Scale up regional experience in ecosystem accounting approach to other regions 		
Component 6: Capacity Building (Cross-cutting)			
<i>Years 1 – 4</i>	<ul style="list-style-type: none"> Technical training for Instat, MEI, line ministries in data collection and accounts development and maintenance General training on interpretation and use of WAVES outcomes – central and decentralized levels 	140,000	
Component 7: Communications and Project Management (Cross-cutting)			
<i>Years 1 - 4</i>	<ul style="list-style-type: none"> Steering Committee and Technical Working Group functioning Technical coordination and project management Implementation of national communications strategy Logistics, workshops, and domestic travel 	400,000	
TOTAL		1,450,000	

