



WEALTH ACCOUNTING AND VALUATION OF ECOSYSTEM SERVICES (WAVES)



MADAGASCAR COUNTRY REPORT 2014

WAVES Madagascar National Steering Committee

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1. Introduction to WAVES Madagascar & Activities to Date

“WAVES Madagascar aims to strengthen the capacity to manage Madagascar’s natural capital and to promote sustainable development”

Almost half of Madagascar’s assets lie in its natural capital, which includes abundant crop and pasture land, water resources, mineral and non-mineral subsoil assets, as well as the mega biodiversity and spectacular landscapes for which it is internationally known. Natural resources also support the means of subsistence of a large majority of the country’s predominantly poor and rural population, and could become an important driver of development. However, no robust quantitative analyses of the scale of the country’s total wealth exist and there are few policies to facilitate the transformation of economic benefits provided by natural capital in a way that could facilitate the country’s progress along a more sustainable development pathway.

WAVES Madagascar will establish a range of tools to integrate the economic value of selected natural resources into analysis and monitoring of macro-economic performance, as well as decisions and policy making related to natural resource management. Since the launch of WAVES Madagascar in 2011, the Government of Madagascar has signaled its strong support for the Partnership through Cabinet endorsement of Madagascar’s involvement, the allocation of co-financing of USD 500,000 for WAVES activities in and around protected areas, and the formal establishment of a national Steering Committee with high level technical representation from Government, including the Secretary-General of the Ministry of Economy and Industry that acts as the Co-president. In 2013, the Government has also endorsed a communiqué and declaration arising from the Summit on Sustainability held in Gaborone, Botswana related to the implementation of natural capital accounting

During the first two years of implementation of WAVES Madagascar, technical activities focused on consultations and awareness-raising with Government, civil society and development partners to introduce concepts of natural capital accounting and to undertake a scoping exercise. As a result of these discussions, the following priority issues were selected for consideration during WAVES activities: (i) rent capture, distribution and reinvestment in the mining sector; (ii) integrated water resource management planning; (iii) sustainable management of timber resources; (iv) contribution of the tourism sector to the economy; (v) sustainable financing of the national protected area network; (vi) natural capital accounting for fisheries and coastal resource and (vii) macro-economic performance monitoring. These discussions led to the development of a detailed workplan and budget for WAVES Madagascar, which was approved by the Steering Committee in August 2012.

In 2013, Government recruited a WAVES National Coordinator, who plays a central role in the workplan implementation. Technical working groups were established for each identified priority issue. With support from international technical assistance, these working groups identified clear and tangible links between desired policy outcomes and natural capital accounts. Based on these targeted outcomes, a series of sector specific roadmaps were elaborated to guide technical and policy activities over the next several years. During the course of implementation, the technical working groups have been strongly involved in data collection and assessment of information gaps. They have also been the recipients, alongside with the national statistics agency – INSTAT, of capacity building activities.

The structure of the accounts has been devised to ensure they are aligned with the identified policy issues for each sector and the needs expressed by decision-makers. In each sector, two parallel processes of account elaboration are being implemented simultaneously: one for which data is readily available, and one which requires further methodological and conceptual work, and for which data is less accessible. Data collection is currently underway for all priority accounts.

This Policy Note has been prepared in advance of the 2014 WAVES Global Partnership Meeting (14 – 15 May, 2014) to provide background on WAVES Madagascar, an update of progress since the last Partnership meeting and present an overview of the priority activities for the next year of WAVES Madagascar.

2. Overview of the political context in Madagascar

Madagascar has recently emerged from a protracted political crisis, with the election of Hery Rajaonarimampianina as head of state end of 2013, in an election that was recognized as free and fair by the international community. This put an end to the four-year transition period since the unconstitutional change of Government in March 2009, which saw the withdrawal of all donor support, the early dismissal of the Minister of Environment in 2012 following the adoption of a decree that was seen to facilitate the export of precious wood, and the subsequent lack of effective leadership in the environment sector.

After the swearing in of the new President, a significant period of time elapsed before the establishment of the new Government, which was nominated on April 18, 2014 after the designation of the Prime Minister the previous week. These delays had some repercussions on the implementation of the WAVES work plan and the availability of key decision makers. A communication strategy has been prepared, and the new Government has been briefed on the WAVES Partnership in Madagascar. With the return to normality, it is expected that the speed of implementation will quickly pick up, especially in light of the public commitment to WAVES by the newly appointed Minister of Economy.

3. Overview of Macro-economic Context in Madagascar

For the last thirty years, weak growth and fragility in the face of repeated political crises have characterized the macroeconomic performance of Madagascar. Between 1980 and 1995, average annual GDP growth was less than 2 percent. Improved GDP growth rates were evidenced from the late 1990s, and significant growth was seen between 2004 and 2008, with a peak in annual growth of 7.1 percent in 2008. With the onset of the political crisis in 2009, it dropped dramatically to negative growth of - 4.6%, before returning to positive growth of 1.6 percent in 2011.

The modest economic growth experienced by Madagascar in recent decades has been insufficient to compensate for the country's rapid population growth, currently estimated at 2.8 percent per annum. With GDP/capita estimated at US\$453 in 2010, Madagascar is categorized amongst the poorest countries in the world. Since 1980, GDP/capita has decreased in real terms and an 18 percent decrease in real GDP/capita was evidenced between 2008 and 2010. The gap in terms of GDP/capita between Madagascar and the Sub-Saharan African region has widened over this period, with current national GDP/capita less than half the regional average. 76.5 percent of the population – representing 15.4 million persons - lives below the poverty line. Rural areas experience the highest levels of poverty with 82.2 percent compared to 54.2 percent in urban areas

The tertiary sector is the predominant sector in the Malagasy economy representing 52.9 percent of GDP in 2010 (refer Table 1). Transport and service activities dominate the GDP of the tertiary sector and while tourism continues to play an important role, economic activity in this sector, which has traditionally been one of the largest sources of foreign exchange earnings, has been significantly affected by the current political instability.

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. Agriculture is the main livelihood source for the rural population and is essential to meet subsistence needs.

Agricultural production – notably rice production – is in fact the single largest contributor to GDP constituting 14.1 percent of GDP in 2010. The contribution of coastal and marine resource exploitation has stagnated in recent years with economic activity decreasing annually by 2 percent between 2008 and 2010. The contribution of forestry to GDP has seen a net augmentation in the same period with annual growth of 30.4 percent linked to precious timber exploitation that had an export value of US\$176 million in 2009.

Table 1: Structure of Madagascar's Economy

	2008	2009	2010
Population	19,071,811	19,601,026	20,142,015
GDP (US\$ millions)	8,041	8,365	9,132
GDP (US\$ per capita)	469	478	453
<i>Structure of GDP (% of total):</i>			
<u>Primary Sector</u>	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%
<u>Non-primary Sector</u>	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: Instat. 2012. Tableau de Bord de l'Economie en 2012.

Industrial economic activities are dominated by food, beverage and energy production however the mining sector is of growing importance. 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) represented more than 65 percent of GDP in recent years. Exported production from these two operations is expected to contribute between 30 and 60 percent of national export earnings in coming years, and their contribution to the fiscal revenues of the State is expected to increase from 1 percent to 18 percent by 2018.

The national economy is not greatly diversified and is concentrated in several sectors and geographic regions that have become development hubs because of their higher population densities, their

proximity to large development projects (such as mining projects) or their access to markets. The marginalization of other regions where poverty rates are significantly higher has influenced the poor economic performance of the entire country. This inequality of economic activity, particularly in rural areas, has led to a lack of employment opportunities for poor rural households, thus increasing their overall vulnerability.

Madagascar has an open economy and has favored regional economic integration, however exports to neighboring countries remain low and Europe, the USA and Asia have to date remained the most important markets for Madagascar. In the last three years, the suspension of preferential trading treaties following the onset of the political crisis has however negatively affected export activities to these countries.

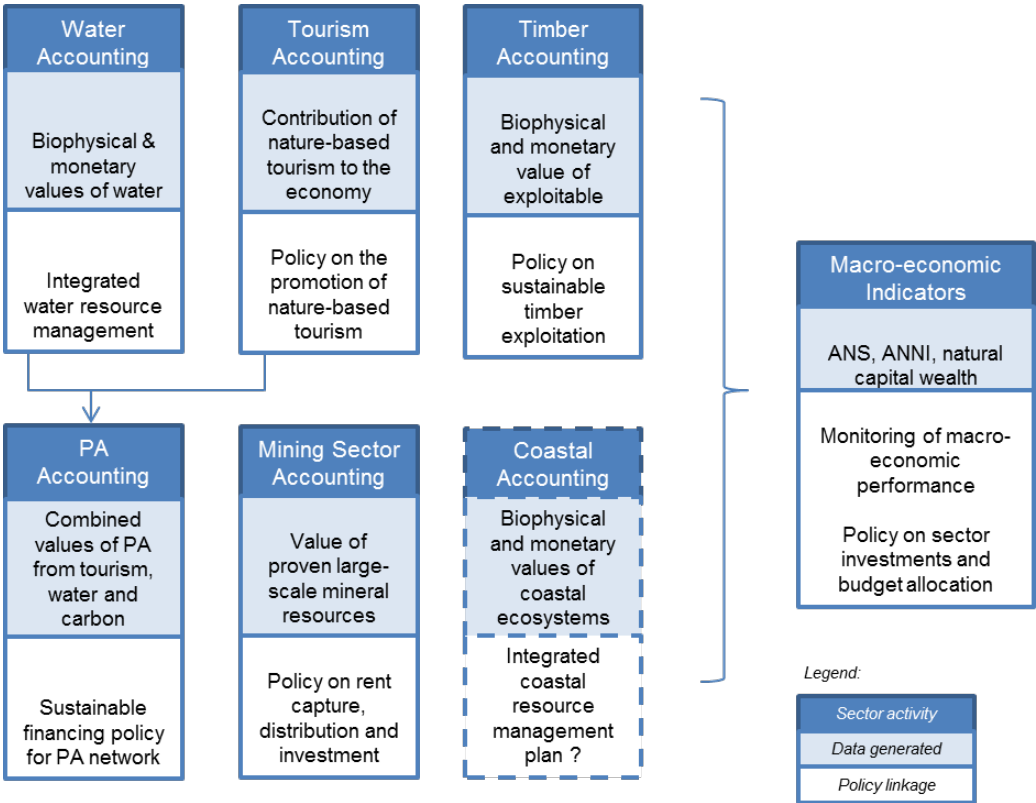
Weak national savings and high fiscal pressure (estimated at 11 percent of GDP in 2010) are limiting factors to development of the private sector and investments in human capital. The economy remains highly dependent on external aid, which before the 2009 political crisis accounted for approximately two thirds of the public investment budget, and foreign direct investment in a limited number of sectors such as mining and to a lesser extent tourism. Following the onset of the political crisis, suspension of foreign aid has severely affected public investments with a decrease of 60 percent between 2008 and 2009.

The national economy is vulnerable in the face of climatic shocks such as droughts, cyclones and flooding that affect the country every year. These events provoke considerable damages in key economic sectors such as the transport and agricultural sectors and the effects are unequally distributed with poor, rural populations being the hardest hit. The 2008 cyclone season, which was the last season for which a comprehensive evaluation was carried out, caused losses equivalent to 4 percent of GDP and the 2012 season is expected to cause similar levels of losses. Other exogenous factors, including the volatility of prices of key imports and exports on global markets (e.g. vanilla, shrimp, rice and petrol) have also affected recent economic performance.

4. Policy Linkages

The starting point for the development of the WAVES Madagascar workplan was the identification of a series of priority policy questions across several key sectors that could be informed by natural capital accounting activities. This process has identified seven broad policy linkages that WAVES activities will seek to inform that are discussed below and illustrated in Figure 1. During the detailed activities in each of these sectors, these policy linkages were further investigated, discussed, and refined. Detailed road maps were prepared outlining inputs, processes and outputs for each policy linkage to guide future WAVES activities.

Figure 1: WAVES Madagascar Outputs and Policy Linkages



4.1. Policy dialogue on natural resource rent capture, distribution and reinvestment in the mining sector

Madagascar is recognized as a geologically rich country, with extensive mineral and non-mineral sub-soil assets that have the potential to generate large economic gains over a relatively short period of time. 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.

Despite the potential economic benefits that exist, royalties captured by the State from existing large-scale operations are relatively low (between 1 and 2 percent) compared to other countries. Furthermore, despite Madagascar’s position as a pioneer in terms of revenue distribution to regional and local communities, conflicts prevail 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 Extractive Industries Transparency Initiative (EITI) process, of which Madagascar is in the process of becoming a full member. 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 in coming years.

The transformation of the country's non-renewable mineral natural capital to other productive forms of capital, will require a strong and consensual policy framework with identified policy needs in four areas: (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 manage land use conflicts and control adverse effects of resource extraction on other components of natural capital.

As a first step, WAVES Madagascar will provide technical assistance in developing industrial mineral physical stock and monetary accounts. These will help inform Government of the country's existing mineral resources which are currently being exploited, and estimate current and possible future rents generated from such resources. This will be used to help inform mining fiscal policy. It is noteworthy that in parallel a study is being carried out to estimate the non-fiscal benefits of mining. This will complement the work on natural capital accounting. The mining accounts can also be complemented by information on ecosystems and other economic sectors such as agriculture to guide policy on the tradeoff between conservation and mining development.

Due to the uncertainties surrounding the Malagasy Government's future mining policies, which were exacerbated during the political crisis, the members of the Mining Chamber of Commerce sought a confidentiality agreement with WAVES prior to data sharing. Following the signature of this agreement, the required data has been collected from the four major industrial mining companies. Only remaining data to be collected will be provided by companies still carrying out the exploration phase. In the future, data collection will be facilitated through integration into the EITI process, to which the industrial companies already abide.

The mining technical working group will also investigate the feasibility of developing artisanal mining accounts, including gold and precious stones. Despite the lack of readily available data, it was agreed that this should be pursued in light of this sector's importance in the economy. The difficulty is related to the fact that production is mostly carried out by small enterprises and informal or illegal workers. This work could be supported by the survey currently carried out by INSTAT on the informal mining sector. Once the sub-sector structure is clearly understood, the technical working group will discuss the feasibility of developing this account and its potential structure.

4.2. Basin level 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. 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 disparities at the basin and even sub-basin level.

Total water use is estimated at 14.97 cubic kilometers per year: 4.5 percent of renewable water resources. 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). The irrigated agricultural surface in Madagascar, predominantly for rice growing, is estimated at 1 million hectares or 30 percent of the total of cultivated land. Irrigation infrastructure is generally small-scale and while nominally managed by local water users associations, such infrastructure is often in poor condition because of lack of financing for its maintenance. Municipal water use by households and small enterprises is predominantly assured by the State owned electricity and water company JIRAMA, although contracts are also established with the private sector to supply water because of the lack of capacity

of this institution. In 2010, 45 percent of households had access to a secure water supply; although the rate was significantly higher in urban areas than in rural areas. The growing large-scale mining sector will have significant water needs and availability of adequate secure resources will be essential to the development of this industry. Initial studies carried out by the World Bank and others indicate that the biophysical hydroelectric potential of the country's water resources is under-exploited and could be significantly increased. Currently hydroelectricity accounts for only two thirds of the national electricity production despite its potential economic advantages over thermal power production and efficiency of existing hydroelectric power stations is increasingly affected by sedimentation of dams.

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 of water. Data availability in the sector is weak due to the number of actors involved and the lack of a coordinated approach to data collection and analysis. The Ministry of Water Resources is interested in the application of the principles of integrated water resources management, but has not yet developed integrated water basin management policy or plans. Future policy development in this area could be strengthened by a clearer understanding of the relative economic contribution of water to different user groups such as agricultural, municipal and industrial users.

The overall goal of developing water accounts in Madagascar is to ensure a balance is achieved between the supply and demand of water resources. By developing basin water resources accounts, WAVES Madagascar will contribute to increased knowledge of the water resources sector in Madagascar and generate information on specific policy questions such as the economic feasibility of developing untapped hydroelectric potential of water resources. Such accounts would assist the Ministry of Water Resources in its objective of developing national policy for integrated water resources management and plans for priority basins.

To this end, physical stock accounts are first being developed at the national level for all major river basins. They will help define the quantity of water resources which are renewed annually through precipitation and how these have changed over time, so as to identify trends in the long term availability of renewable water in Madagascar. Preliminary results are expected mid-2014.

In parallel, a feasibility study is being carried out in preparation of the establishment of physical flow accounts. Following several discussions, it was decided to expand these accounts from one sub-basin level, as originally foreseen, to major basins at national level. This will also allow the detailed ventilation of water use by type of activities. The general structure of the flow account has been elaborated, and will include the following activities: (i) agriculture, silviculture, and fisheries, (ii) extractive, manufacturing and construction industries; (iii) electricity, gas, steam and air conditioning production; (iv) waste water collection and treatment, water distribution; (v) sanitation; (vi) waste collection and treatment, services; and (vii) domestic use.

Due to the scale of the data collection and analysis work, collaborative relationships will be sought with other actors – such as UNDP and African Development Bank – who are working in the sector to define detailed policy linkages and collaborate on data collection and analysis tasks. A collaboration could also be established with ESPA (Ecosystem Services for Poverty Alleviation) / P4GES (Paying 4 Global Ecosystem Services) through Water World. P4GES has agreed to provide technical support to the project.

4.3. Sustainable management of timber resources

In Madagascar, more than 95 percent of the population relies on timber for fuel wood, charcoal and construction purposes. Energy needs create significant pressures on forests, and are thought to amount to 80 percent of yearly domestic wood consumption. Patterns of consumption vary geographically, with more than double the annual average consumption of timber per person in urban areas, compared with rural households. With the current 2.8 percent demographic growth, Madagascar's population is expected to double by 2040, thus leading to a significant rise in anthropogenic pressures on natural resources.

Demand in fuel wood is expected to start outstripping supply in the next 10 to 15 years, and if no alternative is proposed, populations will increasingly target protected areas. The need to ensure timber exploitation is sustainable has been seen as an entry point for the WAVES program. WAVES Madagascar would help improve understanding on the quantities and patterns of use of timber for energy consumption, and the required policy to ensure demand is met adequately. It could also help inform a policy on the use of improved cook stoves.

WAVES Madagascar will develop a physical and monetary stock account of exploitable forestry resources throughout Madagascar. To date, the forestry technical working group has gathered significant data which could be used, including mapping of deforestation in 1990, 2000, 2005 and 2010 by Conservation International and ONE, and the 1996 national forest inventory, and ad hoc inventories carried out from 2001 onwards in selected areas. The recruitment of a firm is currently underway to compile all data and complete the modeling. The physical account will include surface and volume of timber for each type of ecosystem (natural, planted) and for each type of use (such as fuelwood, firewood, construction). Formal, informal and illegal activities will be included. The technical working group will also decide whether to include illegal activities relating to precious wood. While their physical and monetary value could be included in the accounts, this remains a sensitive issue.

4.4. Contribution of the tourism sector to the national economy

With spectacular landscapes, terrestrial and marine ecosystems, and world renown fauna and flora, there is strong potential Madagascar's nature-based tourism sector. According to a 2009 study, 70 percent of tourists traveling to Madagascar visited at least one protected area, and that figure increased for trips organized by tourism operators. Pre-crisis, the tourism industry was valued at USD 500 million per year, with an average 10 percent annual growth rate. Tourism is not only an important source of foreign exchange earnings, accounting for over 6 percent of GDP in 2007, but also provides more than 200,000 jobs (5 percent total employment), in particular in remote rural areas, targeting the most vulnerable segments of the population. Despite this growth, the Madagascar tourism industry remains small, with only 200,000 tourists in 2012, compared with almost 1 million in neighboring Mauritius.

Despite Madagascar's unique biodiversity and landscapes being the main draw card in attracting tourists, current capture of the economic benefits of tourism harbored within the network of protected areas is very low - only US\$1 million/year is generated by tourism through park entry fees. It has however been estimated that ecotourism alone could generate US\$28 million per year¹, and such revenues could be used both to improve the protected area's financial sustainability and for the natural resources sector more generally. This issue has been selected as an entry point for the establishment of a partial tourism account in Madagascar. This partial account will be focused on the current and potential financial benefits of tourism in protected areas.

¹ 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.

To this end, a visitor and enterprise tourism survey is currently under way. This study will help to generate information on the size and economic contribution of protected area tourism to national economic development, and will lead to the development of a partial, protected-area focused, tourism satellite account (TSA). Specifically, the TSA will facilitate generation of information on : (i) Protected area tourism's contribution to GDP; (ii) employment in protected area tourism; (iii) size and characteristics of protected area tourism; and (iv) tourist expenditure and consumption data for protected area tourism.

An international technical assistant has been recruited to help develop study methodology and develop the partial TSA. In addition, the technical assistant will carry out a scoping study for the development of full tourism accounts. This has been decided not only in light of the importance of tourism for Madagascar's economy, but also because the construction of full tourism accounts helps to ensure accuracy of information by balancing out each account component.

4.5. Sustainable financing of national protected area network

Madagascar has made a major commitment to protecting its unique resources through the creation of a protected area network, which today covers 6.9 million hectares and 12 percent of the national territory, a major achievement for such a low income country. This network not only ensures the conservation of Madagascar's exceptional biodiversity, but also provides other benefits in the form of water services - regulating the flow of water and helping to prevent floods and risks of water shortages - essential services for downstream urban water users and hydroelectricity generation. It also helps to reduce soil erosion and sedimentation, which can adversely affect agriculture activities, and in particular irrigated perimeters downstream. It is estimated that protected areas provide water services for at least 430,000 hectares of irrigated perimeters, and drinkable water to 17 major towns.

Yet the protected area network remains largely dependent on external aid. Less than 10 per cent of its management costs are supported by sustainable sources of financing. These include just over US\$ 2 million from the Foundation for Protected Areas and Biodiversity (FAPB), small revenues from the pre-sale of carbon, and US\$0.5 million/year generated by park entry fees. Park visitors pay between US\$ 10-25 per day to visit a protected area in Madagascar, a small fee compared with other international biodiversity hotspots.

WAVES Madagascar will support the development of a policy framework to improve the capture and distribution of the network's economic benefits and thus contribute to its sustainable financing. It will begin by focusing on ecotourism benefits from entry fees, through a willingness to pay study. This study will provide information on value given to protected areas by visitors and the main factors that influence this valuation. The results will help inform policy on park entry fee and investment in protected areas. This activity will also combine the results of tourism and water resources accounting (refer Section 4.2 and 4.4 above), and possibly the valuation of carbon benefits of the protected area network. These will be compiled to generate broader information on the economic valuation profile of protected areas. WAVES Madagascar would provide technical assistance to Government and civil society to use this information to develop sustainable financing mechanisms and policy for the protected area network.

4.6. Natural capital accounting for fisheries and coastal resource management

The fisheries and coastal resources sector is of economic importance to Madagascar both at the national level, and in terms of household livelihoods and provision of subsistence resources. Based on official statistics, which are likely to underestimate true economic values, the fisheries and coastal resources sector contributed US\$146 million or nearly 2 percent of GDP. Official estimates are that there are 102,000 fishers in Madagascar, although this is also certainly a gross underestimate as

there has been no recent census and many rural households practice fishing as seasonal or part-time occupation or as a means of supplementing their subsistence needs.

A policy framework 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 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.

The sector could benefit from ecosystem and natural capital accounting activities as a means of generating data on the economic value of the sector as a whole, and of important sub-sectors in order to inform policy on sustainable coastal and marine resource management, and generate a better understanding on households' dependency on such resources. However, the institutional, capacity and data availability constraints within the sector are significant and could undermine the ability to achieve tangible results in the sector in the short-term and/or to assure the sustainability of processes put in place during the WAVES partnership in the medium to long term.

A modest approach to WAVES Madagascar activities in the fisheries and coastal resources sector will be adopted in the short-term. WAVES Madagascar will support a detailed Scoping Study and Action Plan for ecosystem and natural capital accounting in the fisheries sector that identifies the data needs (and means of generating data), capacity and resource needs, possible collaborations with national and regional partners, and associated institutional strengthening needs (i.e. in data collection, management, and analyses) that would facilitate future ecosystem and natural capital accounting activities. During the implementation of WAVES Madagascar the evolution of the sector would be monitored and discussed during annual workplan reviews and if found to be feasible activities, such as piloting regional-level ecosystem accounting activities to feed into ICZM planning or developing fisheries sector accounts, would be implemented.

4.7. Macro-economic performance monitoring and natural resource management

Madagascar's system of national accounts and macro-economic indicators make scant reference to natural capital values. 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.

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 Madagascar activities, the focus will be on developing new, complementary macro-economic indicators including adjusted net savings (ANS), adjusted net national income (ANNI) and natural capital 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. The technical working group also prepared a macro-economic policy note, which sheds some light on the conceptual basis of natural capital accounting in the integrated management of Madagascar's assets, description of the macro-economic indicators, and an action plan to compile and use these indicators. The objective of this policy note is to ensure the concept is broadly understood and indicators are used effectively alongside GDP by decision-makers.

In the medium to long term, the outcomes of natural resource accounting activities supported by WAVES Madagascar 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.

5. Communication

WAVES is an innovative program. Its effective appropriation and use will require significant awareness building and dissemination of results. A consultant has been recruited to devise a communication strategy based on a comprehensive stakeholder analysis. The objective of this strategy is to ensure decision-makers, academics, private sector, media and NGO community gain an understanding of the WAVES program and its potential impacts on key policy issues. It will be developed in such a way to accompany the implementation of the work program established for Madagascar and to continually generate interest in WAVES.

A brochure is currently being finalized, and will be presented to key decision-makers of the new Government. This will also help to advocate for the effective incorporate of natural capital accounting in policy analysis and development planning.

6. Summary Workplan

The WAVES Madagascar workplan has been structured around seven technical work areas that correspond to the policy linkages identified in the previous section (Table 2). The estimated total budget of WAVES Madagascar is USD 2.0 million, of which USD 1.5 million would be allocated from the WAVES multi-donor trust fund, and USD 0.5 million is co-financing allocated by the Government of Madagascar through the Third Environment Program Additional Financing Project (EP3 AF). Annual reviews of the workplan would be carried out to review progress against workplan objectives, and allow preparation of detailed annual activity schedules and budgets.

Table 2: WAVES Madagascar Summary Workplan (revised)

Work Area	Objective	Expected Overall Outcomes	Indicative Budget (USD)
1. Macro-economic indicators	To develop new macro-economic indicators that integrate economic values of natural resources, and that are complementary to existing indicators, are developed to guide and facilitate monitoring of sustainable development.	Macro-economic indicator development and annual revision including adjusted net savings (ANS), adjusted net national income (ANNI) and natural capital wealth	30,000
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 policy analysis. Satellite account for small scale mining if feasible.	150,000
3. Managing watersheds and water resources	Contribute to regional integrated water resources management planning	Monetary and physical accounts for water resources (initially in priority zones), and policy analysis related to integrated water resources	400,000

Work Area	Objective	Expected Overall Outcomes	Indicative Budget (USD)
		management	
4. Sustainable timber sector exploitation	Contribute to the development of a policy on sustainable timber exploitation	Biophysical and monetary value of exploitable timber. Policy analysis related to sustainable timber exploitation.	150,000
5. Contribution of the tourism sector to the economy	Contribute to a policy on promotion of nature-based tourism that supports economic development and poverty reduction	Partial tourism satellite accounts, providing data on: (i) Protected area tourism's contribution to GDP; (ii) employment in protected area tourism; (iii) size and characteristics of protected area tourism; and (iv) tourist expenditure and consumption data for protected area tourism.	250,000
6. Value of protected areas	Contribute to sustainable financing of national protected area network	Analysis of combined ecosystem service values – ecotourism, water resources and non-timber forestry values - in selected protected areas to feed into sustainable financing policy for the PA network	250,000
7. Fisheries and coastal resources	Scoping of the data and resource requirements for implementation of ecosystem and natural capital accounting in the fisheries and coastal resources sector is carried out.	Detailed Action Plan for ecosystem and natural capital accounting in fisheries and coastal resources sector, with subsequent activities to be defined based on outcomes. Possible activities relate to ecosystem service accounting to feed into ICZM planning or fisheries sector accounts	140,000 (to be confirmed)
8. Capacity building	National counterparts are empowered to undertake natural capital accounting tools and use the results in policy development	Trained national counterparts in Government, research institutes and civil society	240,000
9. Project management	WAVES activities are managed in partnership between the World Bank and Government	A core team of World Bank and Government staff are resourced to manage and support WAVES activities	390,000

7. Enhancing Sustainability of Outcomes

A key objective of WAVES Madagascar will be to optimize the sustainability of the mechanisms and tools that are established for natural capital accounting – both in terms of institutional structure and technical capacity - following completion of the workplan implementation. To this end, two streams of activity are proposed to complement the technical account development activities: (i) a

comprehensive program of capacity building; and (ii) continued discussions with Government on the development of institutional arrangements to facilitate the continuation of natural capital accounting activities post-WAVES.

Capacity building activities will account for over 15 percent of the WAVES budget and will be integrated into all technical activities. The focus is on “hands-on” training for national counterparts in Government, research institutes and civil society in the development and use of natural capital accounts. Training topics will include application of SEEA methodologies, links between the SEEA and the system of national accounts, ecosystem service accounting methods, and the utilization of environmental accounting outcomes in policy development at the sector and macro-economic level. Opportunities for attendance at external forums and training events for key counterparts will be identified as will opportunities for specialists working on WAVES Madagascar to present lecture or seminars to broader audiences.

Capacity building has commenced in 2013, when the national statistics agency, INSTAT and technical working groups received training on the structure of accounts and methods to assess the monetary value of natural capital in different sector. P4GES also gave a training on the use of the Water World tool in 2014, to which members of the Water technical working group were conveyed. Each study to be carried out by consultant includes a capacity building component to ensure results are well understood and appropriated, and the work can be replicated in the future.

Discussions with the new Government in place on institutional arrangements for natural capital accounting will continue throughout workplan implementation. Issues that will be discussed will include the institutional home of satellite accounts, the roles and responsibilities of various agencies including the national statistics institute and line ministries, as well as the policy or legislative mechanisms that may be appropriate to ensure ongoing compilation and use of satellite accounts.

8. Implementation Arrangements

Implementation arrangements for WAVES Madagascar are shown in Figure 2 and described below.

The WAVES Madagascar National Steering Committee, in partnership with the WAVES Global Partnership Secretariat, is responsible for overseeing implementation of activities in Madagascar. This Steering Committee is presided by the Secretary-General of the Ministry of Economy and Industry and Conservation International. The Steering Committee also includes representatives from sector line ministries (i.e. water, environment, fisheries, mines, forests and coastal zone management) and the private sector (Chamber of Mines, tourism organizations and enterprise bodies).

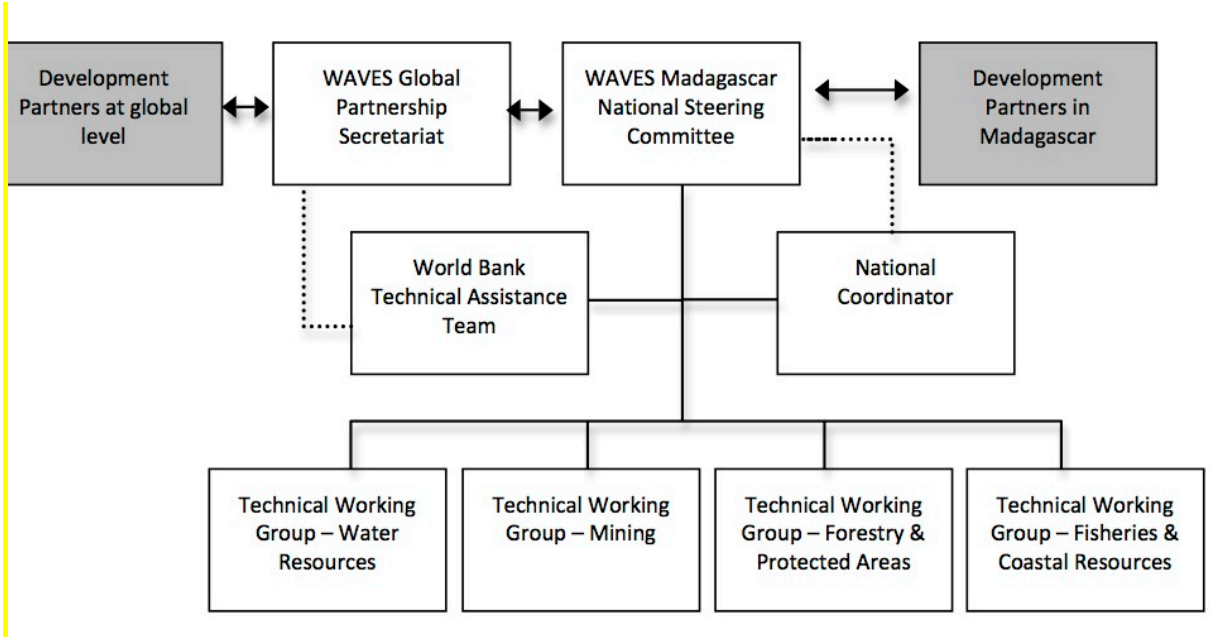
A series of Technical Working Groups have been established by the Steering Committee to provide technical guidance and support to activities in different thematic work areas. To date Technical Working Groups for the macro-economic performance monitoring, mining, water resources and protected areas/forestry sector have been established. They include high level representatives and technicians of the relevant Ministries, as well as members of local civil society. These technical working groups meet on a regular basis and actively participate in discussions on policy issues, conceptualizing studies and overseeing data collection.

The World Bank-led WAVES Global Partnership Secretariat coordinates global activities and provides technical advice and support to the Steering Committee and the World Bank in-country technical assistance team. The Secretariat provides the link to the WAVES Policy and Experts Technical Committee that is leading the methodological development activities of WAVES at the global level.

The WAVES National Coordinator has been recruited by the Government to act as the Government focal point and liaison for WAVES Madagascar. The National Coordinator provides secretariat and support services to the Steering Committee and the Technical Working Groups, and liaises closely with the World Bank technical assistance team in the day-to-day management of WAVES activities.

The World Bank Technical Assistance team is based in Madagascar and provides day to day project management support and technical assistance to the Steering Committee and the National Coordinator. This team acts as a key technical liaison with the Global Partnership Secretariat and other WAVES partner countries.

Figure 2: WAVES Madagascar Implementation Arrangements



9. The Way Forward

In light of the recent commitment of the Minister of Economy to adopt national capital accounting in Madagascar, the next year will see further substantive progress in the implementation of the WAVES Madagascar workplan. Preliminary data will be available in the mining, forestry and water resources sectors, and the technical working groups will begin preparing initial accounts with the support from an international environmental accounting specialist. This work will be accompanied by relevant training aimed at the technical working groups, Ministry technicians and members of INSTAT, to ensure they develop the required capacity to continue this work. The training will be provided by the international technical assistant, as well as the consultants having carried out studies as applicable, and possible partners such as ESPA.

The first round of estimates of complementary macro-economic indicators – ANS, ANNI, natural capital wealth – will be prepared towards the end of the year as initial data from satellite accounts becomes available.

A communications and outreach strategy tailored for Madagascar will begin implementation in coming months, together with a national monitoring and evaluation framework to allow WAVES impacts and results to be monitored and reported to Government and stakeholders. It will help to

ensure natural capital accounting is recognized as an important tool for resource management across key ministries and agencies.

Towards the end of 2014 the WAVES Madagascar Annual Planning Meeting will be held to review progress to date and to prepare the detailed workplan for 2015.

Annex 1: Madagascar M&E framework

GLOBAL RESULTS-BASED MONITORING MATRIX – PDO 1

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
PDO 1. To implement natural capital accounting in partner developing and developed countries							
Outcome Indicators:							
a. Country has committed to institutionalize natural capital accounting based on lessons learned from the WAVES program	No commitment				TBD under new government	TBD under new government	TBD under new government
Intermediate Outcomes Indicators							
1.1 Country has completed the milestones for the WAVES Preparation Phase ²	None	All completed					
1.2 Country has asset accounts for selected natural assets	No accounts			Completion of national water stock account by river basin	Subsoil assets for large mines; forest accounts for Non-Protected Areas only	Forest accounts: (Prot. Areas+ non-Prot. areas), mineral accts for small scale mines	Refine accounts
1.3 Country has flow accounts for selected natural resources	No accounts				Water flow account for one river basin	National water accounts by river basin for priority zones	Refined water accounts

² National Steering Committee (NSC) established, Feasibility study approved by NSC and WAVES Secretariat, Stakeholder consultation on draft work plan, Work plan approved by NSC and WAVES Secretariat

1.4 Country has experimental ecosystem accounts (if intended in country work-plan)	none		Target: 0 countries		Partial ecosystem account based on protected area ecotourism	Begin protected area ecosystem accounts, including tourism, water services and carbon capture, TBD**	Preliminary forest ecosystem accounts, TBD**
1.5 Country has macro-economic indicators derived from the SEEA accounts (if intended in country work-plan)	None				First round of economic indicators derived from SEEA account	Update macro indicators	Update macro indicators
1.6 Country has capacity for maintaining NCA (evidenced by dedicated government staff for NCA and regular reporting mechanism for production of natural capital accounts)	None		WAVES coordinator recruited by Government	Technical Working Group established and trained for all accounts	Dedicated staff recruited with Ministry of Economy, TBD** Training continues through workshops with international expert	Training continues through workshops with international expert	Training continues through workshops with international expert

1 National Steering Committee (NSC) established, Feasibility study approved by NSC and WAVES Secretariat, Stakeholder consultation on draft work plan, Work plan approved by NSC and WAVES Secretariat

** Madagascar and Costa Rica have new governments in 2014 and the work plan will be discussed with the new government to develop them further . Extension of end date to 2017 allows time for ecosystem accounts.

GLOBAL RESULTS-BASED MONITORING MATRIX – PDO 2

OBJECTIVES & OUTCOME (RESULTS) INDICATORS	Base-Line June 2011	Prep year June 2012	Yr 1 Jun-13	Yr 2 Jun-14	Yr 3 Jun-15	Yr4 Jun-16	Yr5 Jun-17 (proposed)
PDO 2. To incorporate natural capital accounting in policy analysis and development planning in core implementing countries							
Outcome Indicators:							
a. NCA informs policy dialogue on growth, environment and poverty reduction, evidenced by citing NCA or using NCA indicators and data in, development plans, sector strategies and plans, executive orders, legislative documents, and the broader policy analysis literature (may include World Bank ESW, AAA and project formulation documents)	none				NCA informs PRSP and World Bank ISN; other TBD with new govt.	World Bank CPF uses NCA; Other use TBD with new govt	TBD under new govt
Intermediate Outcomes Indicators							
2.1 Country has policy notes and analytical work based on NCA	None			1 st macro indicators policy note;	Macro indicators, water efficiency policy notes and technical reports	Mining and forest sector policy notes, add'l TBD with new govt	TBD with new govt
2.2 Country has capacity for using NCA in policy dialogue(evidenced by government staff trained in using NCA)	None			Training of 20 staff on policy use of NCA by int'l expert	Continued training on uses of NCA by int'l experts	Continued training on uses of NCA by int'l experts	Continued training on uses of NCA by int'l experts

*Costa Rica and Madagascar have new governments in 2014 and discussion will take place in 2014-2015 to identify the new development priorities and how NCA can contribute.

Annex 2: WAVES Madagascar: Detailed Workplan, Budget and Schedule

Work Area	Objective	Expected Overall Outcomes	Planned Outputs by Year ³				Indicative Budget (USD) ⁴
			Year 1 - 2013	Year 2 - 2014	Year 3 - 2015	Year 4 - 2016	
1. Macro-economic indicators	To develop new macro-economic indicators that integrate economic values of natural resources, and that are complementary to existing indicators, are developed to guide and facilitate monitoring of sustainable development.	Macro-economic indicator development and annual revision including adjusted net savings (ANS), adjusted net national income (ANNI) and natural capital wealth	Agreement on the use of adjusted net savings (ANS), adjusted net national income (ANNI) and natural capital wealth as macro-economic indicators	Macro-economic policy note	Initial estimates of new macro-economic indicators (ANS, ANNI, natural capital wealth)	Revised estimates of new macro-economic indicators (ANS, ANNI, natural capital wealth)	30,000
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, integration into macro-economic indicators, and policy analysis	Technical working group established, capacity building, structure of account elaborated	Creation of first mining sector accounts and Action Plan for progressive refinement Commence policy analysis related to mineral rent recovery, distribution & investment	Refined mining sector accounts Continue policy analysis related to mineral rent recovery, distribution & investment Feasibility study on inclusion of small-scale mining in future accounts	Refined mining sector accounts	150,000
3. Managing watersheds and water	Contribute to regional integrated water resources	National and river basin level monetary and physical accounts for water resources	Technical working group established, capacity building, data needs	Commencement of water accounts preparation in sub	Preparation of water accounts in priority zones	Preparation of consolidated accounts	400,000

³ An annual review of the workplan will be undertaken to develop detailed annual activity schedules

⁴ Includes allocation from WAVES Multi-Donor Trust Fund of USD1.5 million and allocation from IDA-financed EP3 project of USD0.5 million.

Work Area	Objective	Expected Overall Outcomes	Planned Outputs by Year ³				Indicative Budget (USD) ⁴
			Year 1 - 2013	Year 2 - 2014	Year 3 - 2015	Year 4 - 2016	
<i>resources</i>	management planning	and integration into macro-economic indicators, and policy analysis.	assessment	basin	Commence policy analysis related to integrated water resource management	Continue policy analysis related to integrated water resource management	
4. Sustainable timber sector exploitation	Contribute to the development of a policy on sustainable timber exploitation	Biophysical and monetary value of exploitable timber	Technical working group established, capacity building	Preparation of timber stock account	Consolidated of timber account Commence policy analysis related to sustainable timber exploitation	Refine account Continue policy analysis related to sustainable timber exploitation	150,000
5. Contribution of the tourism sector to the economy	Contribute to a policy on promotion of nature-based tourism that supports economic development and poverty reduction	Partial tourism satellite accounts, providing data on: (i) Protected area tourism's contribution to GDP; (ii) employment in protected area tourism; (iii) size and characteristics of protected area tourism; and (iv) tourist expenditure and consumption data for protected area tourism.	Technical working group established, capacity building	Tourism and operator surveys in protected areas Scoping study for full tourism account	Partial account on protected area ecotourism If feasible, commence full TSA account Commence policy analysis on ecotourism contribution to the economy	Refine account Continue policy analysis on ecotourism contribution to the economy	250,000
6. Value of protected areas	Contribute to sustainable financing of national protected area network	Protected area accounts Analysis of combined ecosystem service values in selected protected areas to feed into fiscal policy analysis	Technical working group established, capacity building	Commencement of data collection (tourist and enterprise surveys)	Economic valuation of ecotourism contribution of protected areas Commence ecosystem service valuation for water resources, carbon capture	Refined protected area ecosystem accounts Continue policy analysis of protected area network benefits capture and financing strategy	250,000

Work Area	Objective	Expected Overall Outcomes	Planned Outputs by Year ³				Indicative Budget (USD) ⁴
			Year 1 - 2013	Year 2 - 2014	Year 3 - 2015	Year 4 - 2016	
					and ecotourism Commence policy analysis of protected area network benefits capture and financing strategy options	options	
7. Fisheries and coastal resources	Scoping of the data and resource requirements for implementation of ecosystem and natural capital accounting in the fisheries and coastal resources sector is carried out.	Detailed scoping study and Action Plan for ecosystem and natural capital accounting in fisheries and coastal resources sector	n/a	n/a	Scoping Study for preparation of fisheries sector satellite accounts	To be confirmed based on outcomes of Scoping Study	140,000 (to be confirmed)
8. Capacity building	National counterparts are empowered to undertake natural capital accounting tools and use the results in policy development	Trained national counterparts in Government, research institutes and civil society	Ongoing program of hands-on technical training and facilitated involvement in project activities related to natural capital accounting tools, integration of results in policy development, and establishment and interpretation of complementary macro-economic indicators.				240,000
9. Project management	WAVES activities are managed in partnership between the World Bank and Government	A core team of World Bank and Government staff are resourced to manage and support WAVES activities	National coordinator, World Bank technical assistance, Steering Committee and Technical Working Group functioning, participation in international events, communications and outreach.				390,000
						TOTAL	2,000,000



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