



**Video Conference on Trial Accounts  
22 January 2014 - 9am-12pm Manila time**

## **1. Welcome and Introductions**

A videoconference (VC) was held on January 22, 2014 9am-noon Manila time with the Australian Bureau of Statistics ABS and the World Bank (WB) Manila and Washington DC office on the trial accounts prepared by the Department of Environment and Natural Resources (DENR) and the Laguna Lake Development Authority (LLDA) under the Philippine Wealth Accounting and Valuation of Ecosystem services (Phil-WAVES) project. During this video conference the trial accounts, draft work plans and data inventory for the ecosystem accounts for Southern Palawan and the Laguna Lake Basin were discussed respectively with the technical teams of the Australian Bureau of Statistics and the WB. (for a background and the agenda see annex 1 & 2). The objective of the VC was to:

- i. Provide an update on the trial accounts and next steps agreed at the VC on November 25, 2013;
- ii. Discuss the draft work plan developed by the TWGs;
- iii. Present the draft data availability and gap assessment (if available); and
- iv. Discuss the preparations for the WB mission in February.

The videoconference was very well attended by the members of the technical working groups of DENR and LLDA, representatives of the Palawan Council of Sustainable Development (PCSD) that will collaborate with DENR on the Southern Palawan ecosystem account, the Office of the Presidential Advisor on Environmental Protection (OPAEP) and the National Economic and Development Authority (NEDA). From the ABS, a group of land and water accountants participated in the VC led by John Power. Representatives from the WAVES team in both Washington DC and Manila also participated. For a full list of participants see annex 3.

As part of the discussion, the roles and responsibilities of the TWG and the recently hired environmental economist – Gem Castillo - was further clarified. The TWG of LLDA and DENR/PCSD will lead the development and implementation of their respective trial and ecosystem accounts. The consultant will (i) support the TWGs in Southern Palawan and the Laguna Lake basin in developing ecosystem accounts by contributing with expertise in environmental economics; (ii) manage and carry out valuation of the selected ecosystem services; and (iii) perform policy analyses of the identified policy issues together with the TWGs. His Terms of Reference are included in annex 4. During the upcoming mission, it will be assessed what additional technical support will be needed to help facilitate the compilation of the accounts and associated policy analysis.



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### 2. Presentation of the Trial Accounts for the Laguna Lake Basin

LLDA has made good progress on the implementation arrangements and work planning. The Work plans for water and land accounts were presented and discussed in great detail. These work plans were prepared by the respective sub-TWGs following the end-of-year assessment and planning workshop held on January 7, 2014. They provide a good basis for the upcoming training workshop on ecosystem accounting planned for Feb 10-14, which will – as one of its outputs – help the TWGs to further develop and refine these work plans.

For the **land accounts**, LLDA has been working with FMB and NAMRIA to obtain access to the 2010 land cover maps. In fact, the team just obtained access to the NAMRIA 2010 land cover map on the day of the VC. It is important to note that both teams will now be using the same land cover maps for 2003 and 2010 that have been compiled by NAMRIA. This will help facilitate comparisons and ensure consistency. The 2003 land cover map was produced using Landsat, while the 2010 land cover map used Alos-Avir and Spot 5. Both land cover maps use the same 21 FAO land cover class categories and were compiled using the same procedure (visual interpretation with field validation for 2010). However, the discussions highlighted that there were some discrepancies between the 2003 and 2010 maps, which should be further clarified during the planned meeting with NAMRIA.

LLDA agreed that it will be able to produce a first draft of the land cover change matrix in time for the mission in early February. This land cover change matrix will cover LLDA's administrative area of jurisdiction, including the cities/municipalities of Makati, Mandaluyong and San Juan. Depending on data availability, the land cover change matrix will also be prepared for the individual municipalities as well as the sub-watersheds, as both levels of disaggregation are important for policy formulation and analysis. In doing this disaggregation, it will be important to develop an approach to dealing with LGUs that straddle two sub-watersheds. To assess the extent to which this it will be important, LLDA will record the level of geographic disaggregation at which the different data sources are available.

The LLDA will also use the data availability and gap assessment matrix prepared by the consultant to determine what data is available to capture important provisioning, regulating and cultural ecosystem services associated with each land cover class. The worksheet uses the Common International Classification of Ecosystem Services (CICES) data framework adopted by the SEEA Experimental Accounting Guidelines. At this time, LLDA only needs to indicate (1) if data will be available, (2) what type of data are available and at what level of disaggregation, (3) where it can be sourced, (4) who handles the data, (5) how it can be accessed, (6) is there a need to do primary data collection, and (7) how the data was produced. This work will be done in collaboration with the consultant prior to the mission.

The next step after compiling the land cover change matrix would be to compile a land use change matrix. However, it was pointed out during the discussion that the land use data is



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collected at the LGU level. All the LGUs are supposed to use the same classification, but it will be a time-consuming task to collect and consolidate this data given the large number of LGUs (around 59) in the study area. It will need to be clarified to what extent the LGUs are indeed using the same classification and how difficult it will be to collect and consolidate this data. I should also be clarified to what extent they can be transformed into a GIS format. LLDA agreed to check with their technical staff to what extent it will be feasible to access this data. If land use data is not available a loose approximation based on the land cover data will have to be developed.

For the **water accounts**, the LLDA presented a detailed work plan, which is aimed to produce first results in time for the negotiations of the water pricing scheme in August 2014. For this reason the LLDA suggested to focus on the domestic use water accounts. The ABS expected that it should be possible to concentrate on households in the first instance and gave the example of water suppliers/concessionaires in Australia reporting separate volumes supplied to Residential and Commercial customers. The ABS also confirmed that for households the supply data from water suppliers/concessionaires inform the use side of the SU tables in their Water Account. For areas beyond the coverage of the two concessionaires, data can be taken from different water service providers.

The LLDA also sought to clarify to what extent it will be possible to capture the users of the lake in the water accounts. One of the dominant uses of the lake is fisheries, which has an important impact on the water of the lake. ABS clarified that it is treated as in situ use in water accounting, and consumption would be equal to zero. The ABS agreed to double-check this in the SEEA Central Framework and get back to the team. Given the importance of fisheries for the Laguna Lake and the policy need to set correct user fees, the LLDA asked whether it would be possible to compile an aquatic resources account, which is currently not in the work program. The ABS and WB agreed to consult on this and get back to the TWG during the upcoming mission.

With regards to the work plan, the WB sought to clarify what the development of an ecosystem accounting model and data structure would involve. The consultant clarified that this will be further discussed after the trial accounts have been compiled and the data availability and gap assessment has been completed. The WB also cautioned that it might be difficult to do a monetary account and that it would be more effective to carry out policy analysis instead. The policy analysis should in fact be initiated in parallel with the construction of the physical flow and asset account to ensure that sufficient time is available to produce some good quality preliminary results in time for August. The work plan will be further revised during the planned training on ecosystem accounts and follow-up discussions to reflect these suggestions. The ABS has offered to share the General Statistical Business Process Model to further help with the work planning. In addition, the consultant agreed to prepare a first assessment of the policy priorities and associated ecosystem services with the TWG in time of the ecosystem accounting training.



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The next steps for the compilation of the Laguna Lake Basin ecosystem account are summarized in Table 1 **Error! Reference source not found.** below:

**Table 1: Next steps for the compilation of the Laguna Lake Basin ecosystem account**

| <b>Task</b>   | <b>Responsible agency</b>   | <b>Time line</b>                   |
|---|---|------------------------------------|
| Update data availability and gap assessment matrix for land cover data and share with TWG of LLDA   | Consultant  | By January 24th                    |
| Clarify in situ use with regards to aquaculture   | ABS   | By January 24 <sup>th</sup> - DONE |
| Share the General Statistical Business Process Model  | ABS   | By January 24 <sup>th</sup> - DONE |
| Produce a land cover change matrix for the administrative area of jurisdiction of LLDA, including the cities/ municipalities of Makati, Mandaluyong and San Juan; if possible break down by municipalities and sub-watersheds | LLDA sub-TWG for land accounts  | Jan 27- Feb 3                      |
| Prepare a draft data availability and gap assessment using matrix shared by the consultant accounts   | LLDA for land accounts with support from the consultant                         | Jan 27- Feb 3                      |
| Assess possibility to access land use data from LGUs and to what extent they are compatible   | LLDA for land accounts  | Jan 27- Feb 3                      |
| Clarify discrepancy between 2003 and 2010 land cover maps   | NAMRIA  | Jan 27- Feb 3                      |
| Clarify to what extent it will be possible to capture the impact of aquaculture – either through an aquatic resources or the ecosystem account  | WB, ABS   | Jan 27- Feb 3                      |
| Finalize the data availability and gap assessment   | LLDA sub-TWG for water accounts   | Jan 27- Feb 3                      |
| Prepare an initial assessment of the policy priorities and the associated ecosystem services  | Consultant with support from LLDA sub-TWG for water, land and aquatic resources | Jan 27- Feb 7                      |

### **3. Presentation of the Trial Accounts for Southern Palawan**

The DENR has made good progress in preparing the ecosystem account. It has further refined and improved its trial land cover change matrix for Southern Palawan, has prepared a detailed



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and ambitious work plan at its end-of-year assessment and planning workshop on December 19<sup>th</sup> and has made additional organizational changes to support implementation of Phil-WAVES.

However, the DENR highlighted that – similar to the LLDA – the main problem encountered by the TWG is the compilation and completeness of available data. It will be critical to finalize the data gap and availability assessment as soon as possible so that the data needs can be identified. To fill possible data gaps, it might be possible to collaborate with other ongoing projects in Southern Palawan. To get a better overview of the available data and needs, the DENR agreed to complete the data availability and gap assessment matrix prepared by the consultant prior to the mission. As has been mentioned above, this matrix will help determine what data is available to capture important provisioning, regulating and cultural ecosystem services associated with each land cover class. This work will be done in collaboration with the consultant prior to the mission.

The DENR also stressed that it will be critical to fast-track the initial valuation and economic analysis, as this information is critical to inform decisions on conflicting land uses. This should go beyond the terrestrial data as the recent devastation wreaked by Typhoon Yolanda has clearly highlighted the importance of the ecosystem services provided by coastal and marine resources including mangroves. A mid-term outcome should thus be set to inform these policy priorities. The WB agrees with this suggestion. These changes will be reflected in the revised work plan prepared during the ecosystem accounting training and follow-up discussions. The data availability and gap assessment matrix will further help clarify what initial analysis will be possible with the available data. ABS suggested, in light of the additional interest in marine ecosystem services, adding a marine aspect to the gap assessment matrix comprising either one column for all marine areas or a marine habitat/cover classification set of columns similar to the terrestrial component. The consultant has also agreed to prepare a first assessment of the policy priorities and associated ecosystem services with the TWG in time of the ecosystem accounting training.

In terms of the scope of the work, it was agreed that the trial and ecosystem accounts should be compiled for both the watershed and the individual political boundaries. The analysis at the watershed level is critical to capture the interactions between the different resource uses and users. In contrast, political decisions are generally taken based on administrative boundaries. It will thus be important to carry out and contrast the analysis at both levels.

The DENR also provided an update on the organizational side. A full-time project coordinator for Phil-WAVES has now been hired, who was involved in the earlier PEENRA initiative. This institutional memory and understanding of natural capital accounting will be very helpful in promoting the implementation of the ecosystem account for Southern Palawan. TWGs have also been formed for water, land, soil and biodiversity.



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The DENR then provided a detailed update of the revised land cover change matrix, which has been further improved now including 14 instead of 8 land cover categories. The ABS sought to clarify where the boundary discrepancy is coming from and to what extent this is due to the different resolution of the 2003 and 2010 land cover maps. The ABS recommended up-scaling the 2010 map to the 30m resolution to make sure that the boundary discrepancy only captures real changes in the boundary. The TWG was also advised to refrain from hiding columns and filtering out the blanks, as this can hamper cross-checking the correctness of the data and computations.

Changes in the perennial crop class, which seems to be largely driven by oil palm, make up some of the most significant changes in the land cover matrix. Similarly, changes between open and closed forest are substantial. It will be critical to clarify to what extent this is due to actual changes on the ground or differences between the 2003 and 2010 data set (different level of resolution, field validation only for 2010, and difficulty in verifying boundaries of palm oil plantations in 2003). One possible way to address this problem would be to use the 2005 PCSD land cover map, which is not using the official categories but was extensively field validated. The technical team agreed to follow up and determine to what extent the 2005 PCSD land cover map is compatible with the 2010 base map.

In reviewing the work plan, the WB highlighted that it is very ambitious listing a broad range of accounts to be compiled. It will be important to revisit this list once the data availability and gap assessment has been completed to prioritize based on the revised policy priorities and data availability.

During the VC the following next steps summarized in Table 2 were agreed.

**Table 2: Next steps for the compilation of the Southern Palawan ecosystem account**

| <b>Task</b>  | <b>Responsible agency</b>              | <b>Time line</b> |
|--|--|------------------|
| Update data availability and gap assessment matrix for land cover data and share with TWG of DENR/PCSD               | Consultant                             | By January 24th  |
| Clarify the number of participants in the ecosystem accounting course  | DENR/PCSD                              | By January 24th  |
| Update the land cover change matrix for the watershed and the individual municipalities and make suggested revisions | DENR/PCSD                              | Jan 27- Feb 3    |
| Prepare a draft data availability and gap assessment using matrix shared by the consultant                           | DENR/PCSD with support from Consultant | Jan 27- Feb 3    |
| Assess possibility to access land use data from LGUs and to what extent they are compatible                          | DENR/PCSD                              | Jan 27- Feb 3    |



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| <b>Task</b>  | <b>Responsible agency</b>              | <b>Time line</b> |
|--|--|------------------|
| Update data availability and gap assessment matrix for land cover data and share with TWG of DENR/PCSD | Consultant                             | By January 24th  |
| Clarify the number of participants in the ecosystem accounting course                                  | DENR/PCSD                              | By January 24th  |
| Assess possibility to use 2005 PCSD land cover map to improve and enhance the 2003 land cover map      | DENR/PCSD                              | Jan 27- Feb 3    |
| Clarify discrepancy between 2003 and 2010 land cover maps  | NAMRIA                                 | Jan 27- Feb 3    |
| Prepare an initial assessment of the policy priorities and the associated ecosystem services           | Consultant with support from DENR/PCSD | Jan 27- Feb 7    |

**4. Mission preparations**

The DENR provided an update on the arrangements for the training venue. They are currently awaiting confirmation for the reservation in the Timberland resort. It was agreed with the resort to split the bill for DENR and the WB, with the WB fare set at PHP 3,600 per person per night. Given the distance of the training venue from the city center, it will not be possible to invite the Secretaries of DENR and LLDA to attend the last day.

Discussions were also held on the number of participants to be included in the training. The DENR highlighted the need to include additional observers in the training due to the current restructuring of the DENR and the large size of its TWG given its existing sectoral approach. The WB explained that the course trainer has made a request for a maximum of 24-28 participants to ensure effective delivery of the course. However, it was agreed that each TWG would send 14 officials each with 2 additional spots reserved for NEDA and that there might be the possibility of including additional observers. The DENR will clarify as soon as possible how many additional observers it would like to send and the WB will then check with the trainer whether this is acceptable. WB also mentioned that it is planning to videotape the entire training so that it can also serve as ready reference for others who wish to learn more about ecosystem accounting.

For the SEEA Training, WB Manila will coordinate with NSCB for the venue and other details.

For the field visits, it was agreed that LLDA will send a revised itinerary for the field trip to the Laguna de bay area. Likewise, DENR and PCSD will jointly prepare and send a proposed itinerary for the site visit to Southern Palawan. The WB team is expected to arrive on Puerto Princesa in the afternoon of Monday, February 17.

For the meetings in Manila, it was clarified that it is expected that there will be 3 meetings each with the two TWGs. The first meeting will be for a general updating , a more focused discussion



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on policy issues and preparations for the training and site visits.; the 2nd will be with ESA and NAMRIA to discuss the technical requirements for the EO services and products to be provided by ESA.; and, the last one will be a working session to further develop the work plan and discuss in detail the concrete next steps. The wrap up will be in the afternoon of Feb 21. NEDA representatives mentioned that they will try to get Secretary Balicasan to attend the said wrap up.



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**Annex 1: Background, objectives and expected outcomes of the Video Conference**

The WAVES Global Partnership Program (GPP) promotes sustainable development worldwide through the implementation of wealth accounting that focuses on integrating natural capital accounting (NCA) in conventional development planning and policy analysis. Past attempts to institutionalize NCA – both globally and in the Philippines – have often failed due to the lack of a clear policy link, disagreements on methodology, lack of global leadership and limited capacity and resources. The WAVES GPP tries to tackle these issues by (i) helping countries adopt and implement NC accounts and pilot ecosystem accounts that are relevant for policy priorities; (ii) using a universally accepted standard (SEEA 2012) for NCA and establishing a partnership to develop methodologies for ecosystem accounting; (iii) using the convening power of the WB to rebuild a consensus and (iv) building capacity.

The Philippines was identified as one of the pilot countries for the WAVES GPP, because: (i) there is a high Government demand for indicators, tools and methodologies that will help determine the sustainable use of natural resources and inform development planning and policy analysis; (ii) a more sustainable use of natural resources could potentially have a large impact on the poor and thus economic growth, as the poverty incidence is particularly high among natural resource-dependent sectors; and (iii) the Government has a high latent capacity in NCA from previous initiatives, while academic and private organizations have the necessary skills for ecosystems accounting.

The objective of the Philippine Wealth Accounting and Valuation of Ecosystems (Phil-WAVES) initiative is to promote sustainable development through the implementation of wealth accounting that focuses on the value of natural capital and integrating NCA in development planning and policy analysis. Phil-WAVES will generate more rigorous evidence on the value of natural capital and assess different ecosystem use scenarios to inform development planning and policy analysis. There is a strong demand for more evidence-based decision-making in the Government of the Philippines’ social compact and key development plans. This initiative feeds into this demand.

The Phil-WAVES project has begun the work on the two selected ecosystem accounts in Southern Palawan and the Laguna Lake basin. The lead agency for the Southern Palawan ecosystem account is the Department of Environment and Natural Resources (DENR) in collaboration with the Palawan Council for Sustainable Development (PCSD). The lead agency for the Laguna Lake basin ecosystem account is the Laguna Lake Development Authority (LLDA), which will collaborate with the Federation of River Basin Councils. The two sites are quite different in terms of their challenges and natural resources uses.



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**Southern Palawan:** There are numerous competing demands on resources in biodiversity-rich Southern Palawan—the area is home to a number of indigenous tribes; there is great potential for ecotourism and agriculture; the three large protected areas are threatened by uncontrolled bird hunting, increasing conversion of forest lands, mining claims, destruction of watershed areas, illegal gathering of forest products, and wildlife poaching; and there are four mining companies currently operating in the area.

Managing these demands is a challenge to the region’s sustainable and inclusive economic development. In particular, the minerals sector is highly contentious due to land conflicts and the associated large environmental and social costs. Ecosystem accounts are expected to provide decision makers with the necessary data and evidence-based analysis to make the best development decisions for the region. A framework will also be developed so that the analysis can be updated annually and/or be replicated elsewhere.

**Laguna Lake Basin:** The Laguna Lake Basin is a vital ecosystem and center of economic activity for the capital city of Manila and neighboring provinces. The lake is home to one-fifth of the country’s population who rely on the lake for water, food, energy, recreation and livelihoods. As a center of various economic activities, the Laguna De Bay region is considered to be of high strategic and economic importance.

However, the lake’s ecosystem is at risk, as fish catches dwindle due to poor water quality and the proliferation of predatory aquatic species. In addition, increased rainfall brought about by climate change frequently causes the lake’s waters to overflow, flooding the neighboring municipalities. The ecosystem accounts conducted by Phil-WAVES are expected to help the LLDA properly price the lake waters for water concessionaires that extract and use it for drinking purposes, and for fish pen and cage operators who use it for aquaculture.

Good progress was made on the ecosystem accounts in the second half of CY 2013. Public consultations were held with the various stakeholders of the Laguna Lake Basin and Southern Palawan from August to November, while training and planning workshops on ecosystem accounts were organized in Manila and Canberra, Australia. Having identified policy issues and their linkages to the accounts, a first set of accounts was identified for each site. Trial accounts were subsequently compiled by the TWG of LLDA and DENR/PCSD and discussed with the Australian Bureau of Statistics and the World Bank during a VC on November 25, 2013. End-of-year workshops were also organized by both LLDA and DENR/PCSD to (i) review the progress of implementation of activities committed under the CY 2013 work program and (ii) develop the 2014 Work and Financial Plan consistent with the general work program under WAVES Global Partnership.



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**Annex 2: Agenda (Manila time)**

- 9:00-9:15                    **Welcome and Introductions**
- 9:15-9:45                    **Update on the Southern Palawan trial account**
- (1) Updated Land cover change matrix**
- (2) Update Land cover by land use (or zoning) table**
- (3) Draft Work plan**
- (4) Draft data availability and gap assessment (if available)**
- DENR/PCSD
- 9:45-10:15                    **Feedback from ABS & WB**
- 10:15-10:30                    *Coffee Break*
- 10:30-11:00                    **Update on the Laguna Lake Basin trial account**
- (1) Updated Land cover change matrix**
- (2) Updated Land cover by land use (or zoning) table**
- (3) Updated Laguna Lake Water Balance**
- (4) Draft Work plan**
- (5) Draft data availability and gap assessment (if available)**
- LLDA
- 11:00-11:30                    **Feedback from ABS & WB**
- 11:30-12:00                    **Discussion of Next Steps and upcoming mission**  
Moderated by Bebet Gozun, Phil-WAVES Interim Country Coordinator
- 12:00-1:00                    *Lunch*



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**Annex 3: Participant list**

**Manila:**

- |                           |        |
|---------------------------|--------|
| 1. Gina Aljacera          | NEDA   |
| 2. Mary Jane Alvarez      | NEDA   |
| 3. Nereus Acosta          | LLDA   |
| 4. Dolora N. Nepomuceno   | LLDA   |
| 5. Lennie C. Santos Banjo | LLDA   |
| 6. Emitterio C. Hernandez | LLDA   |
| 7. Ireneo G. Bongco       | LLDA   |
| 8. Jocelyn G. Sta Ana     | LLDA   |
| 9. Adelio Rico            | LLDA   |
| 10. Alvin Faraon          | LLDA   |
| 11. Edwin Domingo         | DENR   |
| 12. Zenaida Muñoz         | DENR   |
| 13. Liberty Fernandez     | DENR   |
| 14. Ley Marañon           | FMB    |
| 15. Raul Magabo           | NAMRIA |
| 16. May C. Lacao          | PCSD   |
| 17. Bebet Gozun           | WB     |
| 18. Gem Castillo          | WB     |

**Canberra:**

- John Power, focal point for Phil-WAVES at ABS
- Richard Dunsmore, Land Account specialist at ABS
- Thomas Walter, Land Account specialist at ABS
- Brendan Freeman, Environmental Accounts specialist at ABS

**Washington, DC**

- Stefanie Sieber WB
- Sofia Ahlroth WB



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**Annex 4: TOR for Phil-WAVES Environmental Economics Consultants**

**A. Background**

Ecosystems are deteriorating worldwide and with them the capacity to support human well-being; a problem that is exacerbated by climate change. Part of the solution lies in policy making that takes into account the full value of natural capital – i.e. agricultural land, minerals, energy, forests, fisheries, and water – and the associated ecosystem services, including air and water filtration, flood protection, carbon storage, pollination for crops, and habitat for fisheries and wildlife. To achieve this, ecosystem valuation activities are increasingly focused on ‘greening’ national income accounts. National income accounts are crucial because they constitute the primary source of information about the economy and are widely used for assessments of economic performance and policy analysis.

The objective of the Partnership on Wealth Accounting and Valuation of Ecosystem Services (WAVES) is to promote sustainable development worldwide through the implementation of wealth accounting that focuses on the value of natural capital and on integrating Natural Capital Accounting (NCA) in development planning and policy analysis. In particular, WAVES will: (i) implement NCA based on the UN’s 2012 System of Environmental and Economic Accounts (SEEA) in 6-10 developing and developed countries; (ii) incorporate natural capital accounts in development planning and policy analysis; (iii) develop internationally accepted, standardized guidelines for ecosystem accounting; and (iv) establish a partnership to promote widespread adoption of NCA beyond the pilot countries. WAVES is a trust funded partnership, which is managed by the World Bank in partnership with several UN agencies, interested developing and developed countries, NGOs and other organizations.

The Philippines was identified as one of the pilot countries for WAVES, because: (i) there is a high Government demand for indicators, tools and methodologies that will help determine the sustainable use of natural resources and inform development planning and policy analysis; (ii) a more sustainable use of natural resources could potentially have a large impact on the poor and thus economic growth, as the poverty incidence is particularly high among natural resource-dependent sectors; and (iii) the Government of the Philippines has a high latent capacity in NCA from previous initiatives, while academic and private organizations have the necessary skills for ecosystems accounting.

The objective of the Philippine Wealth Accounting and Valuation of Ecosystems (Phil-WAVES) technical assistance (TA) is to inform development planning and policy analysis on the sustainable use of key natural resources by: (i) developing macroeconomic indicators that account for natural capital values in order to measure the sustainability of economic development; (ii) developing national accounts for prioritized natural resources - minerals and



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mangroves – based on the UN’s 2012 SEEA and analyzing the impact of different natural resource management and revenue sharing scenarios on income and economic development; (iii) developing and constructing ecosystem accounts for Southern Palawan and the Laguna Lake basin and analyzing the trade-offs associated with different resource and ecosystem use scenarios; and (iv) building capacity for institutionalization of the prioritized SEEA modules.

As noted above, Southern Palawan and the Laguna Lake basin have been identified as pilot areas for ecosystem accounting. The project is funded by the World Bank through a technical assistance grant to develop ecosystem accounts for both sites and provide strategic linkages to policy decision-making at the local level within the Department of Environment and Natural Resources (DENR) and Palawan Council of Sustainable Development as well as the Laguna Lake Development Authority (LLDA) respectively and in close collaboration with the National Government through NEDA, the Office of the Presidential Adviser on Environmental Protection NSCB, the Climate Change Commission (CCC), Department of Agriculture (DA), Department of Finance (DOF) and Department of Budget and Management (DBM).

The chosen ecosystems have a myriad of competing interests, opportunities and threats which policy makers have the challenge of reconciling to effectively balance social, economic and ecological priorities. The Phil-WAVES initiative through developing economic values for natural capital and ecosystem services and through analysis of different resource and ecosystem use scenarios aims to generate useful information so that policy makers can make better informed decisions.

The initiative has been designed to engage stakeholders throughout, to harness their input in the analysis to ensure that outcomes of the case study fully consider the views and interests of affected and influential stakeholders. The project is designed in this way not only to ensure that the analysis reflects complex local realities and so that it is not an abstract statistical analysis exercise but to help ensure buy-in and promote institutionalization of the ecosystem accounting tool itself.

In August and September 2013, a series of public consultations and planning and training workshops were held to help launch the initiative in Southern Palawan and the Laguna Lake basin and engage influential and affected stakeholders. The outcomes of the planning and training workshops were:

- I. Better understanding of the Ecosystem Accounting tool and how it can be used to help shape effective policies.
- II. Refined policy priority questions to guide the case study development.
- III. More clarity on how to practically apply/adapt the ecosystem accounting tool to the policy priority questions and context in Southern Palawan and the Laguna Lake.



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- IV. Stakeholders’ fully engaged and their views fully harnessed as the project moves forward into the full implementation of the initiative.

Following the workshop, the Technical Working Groups (TWGs) have begun to consolidate data and compile trial accounts. In November-December, video conferences are planned to follow up on the trial accounts and develop a detailed work plan for the ecosystem accounts and ecosystem service valuation in the two areas. During January – June 2014, the accounts will be developed and valuation of relevant ecosystem services will be performed.

To accomplish this, the Philippines-WAVES team is seeking two local environmental economists to help finalize the work plans, support the TWGs in developing ecosystem accounts and do the valuation of the relevant ecosystem services with technical support from the WAVES Secretariat, Australian Bureau of Statistics (ABS) made possible through funding from the Australian Agency for International Development (AusAID) and the European Space Agency (ESA).

**B. Description of the project**

For each of the two chosen areas, a team of national and international experts will use and as necessary adjust the experimental SEEA methodology for ecosystem accounting.

In Southern Palawan (SP), the work will be co-led by DENR (FASPO) and the Palawan Council on Sustainable Development. The SP team will comprehensively examine the ecosystem services associated with the below- and aboveground natural resources (e.g. minerals, forestry, agriculture, water, biodiversity, etc.) and surrounding coastal and marine resources (e.g. mangroves and fisheries). Where possible, the analysis will draw on primary and secondary data of the province and other relevant sector agencies as well as data and analysis collected by other key stakeholders, such as local government units (LGUs), academe, NGOs, the private sector and other development partners. ESA will provide and analyze satellite imagery for Southern Palawan, while the WB Capturing Coral Reefs Ecosystem Services (CCRES) project will provide data and analysis for the marine and coastal ecosystem. Under the leadership of DENR (FASPO) and advised by all relevant Government agencies and key stakeholders, including LGUs, local and indigenous peoples (IPs) communities, academe, NGOs, and the private sector, they will develop the asset and flow accounts and model the associated regulating, provisioning and cultural,<sup>1</sup> biodiversity, carbon sequestration, habitat protection, waste assimilation, as well as shoreline and storm surge protection services of the ecosystem.

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<sup>1</sup> Cultural services will only be included in the valuation to the extent that they can be valued with the valuation methods compatible with the national accounts, i.e. the production function method, value of avoided damages, hedonic pricing and cost methods. They will thus primarily include recreational services and tourism values..



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The analysis will then evaluate different resource and ecosystem use scenarios and associated trade-offs. Different management structures of the ecosystem services will also be evaluated to determine how best to resolve the direct conflict between mineral sites and existing and proposed protected areas, ancestral domains and potential ecotourism. The winners and losers will also be identified as well as the impact on income and income distribution of the local and IP communities. The analysis will also explore whether there are differential impacts for women in terms of income and access to natural resources. A framework and methodology for replication will subsequently be developed. The analysis and development of replication framework and methodology will be led by DENR (FASPO) and be advised by all relevant Government agencies, and key stakeholders, including LGUs, local and IPs communities, academe, NGOs, and the private sector.

At the Laguna Lake basin (LA), the work will be led by LLDA. The LA team will measure current and alternative uses of the water and habitat ecosystem of the Laguna Lake basin, and model the associated ecosystem services, including habitat for capture and cultured fisheries, drainage of a highly urbanized watershed, flood control, pollution from various sources and potential water demand from Metro Manila. Where possible, the analysis will draw on primary and secondary data of the LLDA and other relevant sector agencies as well as data and analysis collected by other key stakeholders, such as water concessionaries, LGUs, academe, NGOs, the private sector and other development partners. ESA will also provide and analyze satellite imagery for the Laguna Lake basin. Under the leadership of LLDA and all relevant Government agencies and key stakeholders, including water concessionaires, LGUs, local and IPs communities, academe, NGOs, and the private sector, they will develop the asset and flow accounts and model the ecosystem services.

The analysis will then study different resource and ecosystem use scenarios and analyze the associated trade-offs. The winners and losers will also be identified as well as the impact on income and income distribution of the local and IP communities. The analysis will also explore whether there are differential impacts for women in terms of income and access to natural resources. A framework and methodology for replication will subsequently be developed. The analysis and development of replication framework will be led by LLDA and be advised by all relevant Government agencies, and key stakeholders, including local government units (LGUs), local and indigenous peoples (IPs) communities, academe, NGOs, and the private sector.

**C. Scope of the Consultancy**

The scope of the consultancy is to contribute to the projects as described above with expertise in environmental economics and to manage the economics part of the projects. The work will include



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1. Supporting the TWGs in Southern Palawan and the Laguna Lake basin in developing ecosystem accounts by contributing with expertise in environmental economics;
2. Managing and carrying out valuation of the selected ecosystem services; and
3. Performing policy analyses of the identified policy issues together with the TWGs.

Technical support will be provided by ABS/AusAID, ESA and the WAVES Secretariat.

#### **D. Job Description**

The consultants will provide expertise in environmental economics to the teams working on each of the study sites. The work should include the steps outlined below:

1. Review and compile relevant background/reference materials;
2. Participate in video conferences in Nov 2013-Jan 2014 to discuss selection of ecosystem services and valuation methods;
3. For each of the two areas, develop a detailed work plan for the ecosystem services valuation and policy analysis, in collaboration with the TWG and the WB and ABS team. The plans should cover the period January-June 2014 and include the relevant steps to achieve the objective as outlined above;
4. Manage and perform valuation of the selected ecosystems services according to the work plan in close collaboration with the TWGs; and
5. Participate in the policy analysis together with the TWGs.

**Step 1.** Conduct a rapid review of available sources on valuation of ecosystem services in the Philippines and compile information from previous valuation studies that can be useful for each specific study. A first scan of available information should be done in time for the VCs in step 2. Relevant background material includes e.g. the SEEA Experimental Ecosystem Accounts.

**Step 2.** The TWGs, ABS and the WB team will provide reading material for the consultants to be updated on the project prior to the VCs. The purpose of the VCs is to prioritize policy issues, ecosystem services, valuation methods and policy instruments to be analyzed, using the results from the workshops in Aug-Sep and results from the trial accounts. Consultants are expected to provide some first advise on the workplan and policy issues, summarized in a scoping report.

**Step 3.** Develop a detailed work plans for each site, which should follow the outline of the draft work plan (to be drafted by the TWGs, WB and ABS team together with consultants). This work plan should include identifying stakeholders, identifying benefits from the selected ecosystem services, the distribution of these benefits to stakeholders, collection of relevant economic data for the region (household income and income distribution, value added and employment for



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relevant sectors) and collection of data on prices and costs needed for the analysis. These data will be used by the consultants for establishing a baseline understanding of the current use and the incomes generated for different stakeholders, which will then be used as a baseline for the scenario analysis undertaken in step 5.

**Step 4.** Conduct the valuation studies of current resource uses, which should follow the principles outlined in the detailed workplan. In particular they should use valuation methodologies that are compatible with the national accounts, i.e. the production function method, value of avoided damages, hedonic pricing and cost methods. Cost methods include avoided restoration costs, defensive expenditures and replacement costs. When using costs for measures that have not actually been taken previously, evidence must be given that there is a corresponding willingness to pay for these measures among relevant stakeholders. The ecosystem services to be valued can include provisioning and regulatory services. Cultural services will only be included in the valuation to the extent that they can be valued with the valuation methods mentioned above, and will primarily include recreational services and tourism values.

**Step 5.** Conduct the policy analysis, which should study possible resource and ecosystem use scenarios and analyze the associated economic, social and environmental trade-offs. The winners and losers should be identified as well as the impact on income and income distribution of the local and IP communities. The analysis should also explore whether there are differential impacts for women in terms of income and access to natural resources. In the Laguna Lake area, the policy analysis could include a review of the effluent fee scheme. This could be applied to the use scenarios and a change of the fees be analyzed. In Southern Palawan, conflicting prospective land uses involving e.g. mining, tourism and cultural services could be analyzed.

**Step 6:** A framework and methodology for replicating similar analyses in other sites should subsequently be developed.

The work will be done in coordination with the TWG, the ABS, ESA and the WB team.

### **E. Input from the World Bank and other involved agencies**

The data collection will be led by each implementing agency - DENR/PCSD for Southern Palawan and LLDA for the Laguna Lake basin. This will involve drawing on data that other agencies might have, including NSCB, DA, other government agencies, and possibly academe, NGOs and the private sector (and CCRES in Southern Palawan, see below). A data inventory will be conducted in time for the VCs on the trial accounts to determine data availability and access.



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DENR/PCSD and LLDA will be responsible for providing consultants with physical data on ecosystems, ecosystem services and land use. Data on economic activities by sector and on tourism will be provided by DENR/PCSD and LLDA in collaboration with NSCB (tbc).

ESA will provide and analyze satellite imagery for the Laguna Lake Basin and Southern Palawan. The WB Capturing Coral Reefs Ecosystem Services (CCRES) project will provide data and analysis for the marine and coastal ecosystem in Southern Palawan.

**F. Deliverables**

|     | <b>Output</b>  | <b>Date</b>     |
|-----|--|-----------------|
| 1.  | Detailed work plans for Southern Palawan and Laguna Lake   | Mid January     |
| 2.  | Presentations at workshop in the Philippines               | February        |
| 3.  | Draft reports on valuation studies from both sites         | mid May         |
| 4.  | Outline of policy analyses*                                | May             |
| 5.  | Final reports on valuation studies                         | Late June       |
| 6.  | Presentation of valuation studies                          | Late June       |
| 7.  | Draft reports on policy analysis*                          | Early July      |
| 8.  | Final reports on policy analysis*                          | Late July       |
| 9.  | Presentation on policy analysis                            | August          |
| 10. | Draft reports on framework and methodology for replication | Early September |
| 11. | Final reports on framework and methodology for replication | Late September  |
| 12. | Presentation on framework and methodology for replication  | October         |

\*in collaboration with the TWGs

**G. Key Qualifications**

- Ph.D. in economics
- Excellent knowledge and experience of market and non-market valuation approaches
- Good knowledge about national accounts and understanding of the implications for valuation methodologies used for ecosystem services accounts
- Extensive experience of applying environmental economics and valuation approaches in the Philippines
- Excellent command of English

**H. Contract terms**

**Duration:** 60 days (divided equally between consultants) starting on November 25, 2013 until June 30, 2014.



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Upon satisfactory completion of the valuation study the contract will be extended for another 60 days (divided equally between consultants to prepare the policy analysis and framework for replication).

### **I. Supervision and Payment**

- The Consultants will report directly to Ms. Stefanie Sieber (Task Team Leader WAVES, Philippines) and will collaborate closely with the team, including the TWGs of LLDA and DENR/PCSD, the ABS and ESA team, Ms. Maya Villaluz (Co-Task Team Leader WAVES, Philippines) and Sofia Ahlroth (Senior Environmental Economist).
- The Consultants will receive payments upon the presentation of the agreed upon deliverables, duly approved by the Task Manager.
- The World Bank will cover any travel and mission related expenses related to work performed under this Terms of Reference.