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Laguna Lake Basin: Frequently Asked Questions

What is ecosystem accounting?

Ecosystems are an intricate web of interdependence between humans and nature. We depend on ecosystems for our basic needs such as food, water and fuel. We also use its natural resources to drive our economies.

Some of these resources are reflected in our country's GDP. But services naturally provided to us by a healthy, well-functioning ecosystem such as flood control, air and water filtration and soil erosion prevention are neither quantified nor assessed for their economic value.

Ecosystem accounting is a way of accounting for all the benefits -- both concrete and intangible -- that ecosystems give us. In accounting for all the value nature provides us, we can manage these resources more sustainably and leave a healthier planet for future generations.

The framework of ecosystem accounting is based on the System of Environmental-Economic Accounting (SEEA), an internationally agreed standard of concepts, definitions, classifications, accounting rules and tables for producing internationally comparable statistics on the environment and its relationship with the economy.

What are ecosystem services?

Ecosystem services are the benefits people obtain from nature's ecosystems. Tangible benefits are used in economic and other human activity such as the use of timber to build houses or for energy. There are other ecosystem benefits that are intangible like water purification and flood control. Without these ecosystem services, our quality of life would be reduced.

Ecosystem services are classified into three types:

1. **Provisioning services** - reflects material and energy contributions generated by or in an ecosystem. For example, a fish or a plant with pharmaceutical properties. The associated benefits may be provided in agricultural systems, as well as within semi-natural and natural ecosystems.

2. **Regulating services** - results from the capacity of ecosystems to regulate climate, hydrological and bio-chemical cycles, earth surface processes, and a variety of biological processes. It is also commonly referred to as "regulating and maintenance services".

3. **Cultural services** - relate to the intellectual and symbolic benefits that people obtain from ecosystems through recreation, knowledge development, relaxation, and spiritual reflection.

What is the WAVES partnership and how is it related to ecosystem accounting?

WAVES stands for Wealth Accounting and the Valuation of Ecosystem Services. WAVES is a World Bank-led global partnership that aims to promote sustainable development by ensuring that natural resources are mainstreamed in development planning and national economic accounts.The Philippines has been selected as one of the eight core implementing countries where the WAVES Global Partnership Program (WAVES - GPP) has been implemented.

Why was Laguna Lake chosen as the pilot site for the ecosystem account?

Laguna de Bay is the largest inland water body in the Philippines. It provides for the domestic water needs of Metro Manila, supports 14,000 fishermen, irrigates approximately 103,000 hectares of agricultural land, and supports hydropower production. Laguna de Bay is struggling under the pressures of a growing population, industrialization, deforestation, and rapid urbanization. These have resulted in its rapid degradation, causing massive changes in the Laguna de Bay catchment and lake, while also threatening water quality and ecology.

What were the accounts produced for the Laguna de Bay and who were the agencies/organizations involved in putting together these accounts?

There were four experimental ecosystem accounts that were produced for Laguna de Bay:

(i) **land account** containing land cover and changes;
(ii) **ecosystem condition account** indicating various water quality indicators, soil types and elevation, changes in lake bathymetry and sediment loading;
(iii) **ecosystem services production account** indicating the flow of ecosystem services such as fishery production, water supply, flood mitigation and soil erosion regulation;
(iv) **ecosystem asset account** such as water and fish stock.

The Laguna Lake Development Authority (LLDA) took the lead in developing these four ecosystem accounts. Staff from several of its technical units undertook the analysis supported by international and national experts.

But the deteriorating state of the Laguna de Bay has long been known, what is new about this information you are telling me?

True, but this is the first time that we have scientific evidence-based information that will tell us two things: the degree of deterioration and which parts of the lake and basin/catchment are most affected.

Ok, so how will this information help the LLDA manage the lake services?

The ecosystems accounts developed in this study will help LLDA and policy makers prevent further degradation of the Laguna de Bay through informed policies that will strengthen water resource management, improve water quality and align development plans or planning laws.

For example, the Ecosystem Accounts identified the critical areas needing protection and restoration of vegetation cover to minimize sedimentation build up that leads to flooding.

Additionally, as results showed that around 81% of BOD load comes from domestic wastes, we now know that treating household wastes has a lot of potential for improving the water quality of Laguna de Bay.

Lastly, the land account showing the decrease in forest cover and significant increase of built up areas has been used in updating the LLDA Master Plan.

Sources:
http://biodiversity.europa.eu/topics/ecosystem-services
http://unstats.un.org/unsd/envaccouting/eea_white_cover.pdf

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Facilitated by the World Bank, Wealth Accounting and the Valuation of Ecosystem Services is a global partnership that aims to promote sustainable development by ensuring that the national accounts used to measure and plan for economic growth include the value of natural resources.