

InVEST Toolbox

A suite of free models that map and value the benefits nature provides to human society



Ecosystem services (Photo courtesy by TEEB Europe)

The Impact

Ecosystems and natural capital need to be properly managed in order to provide for humanity in a variety of ways, like the production of goods, water purification, recreation, and conservation for future generations. The InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs) tools allow corporations and governments alike to evaluate economic tradeoffs in natural capital management choices.

Description

The Natural Capital Project at Stanford University is a research project that aims to insert the value of nature into all major decisions being made by motivating targeted natural capital investments. It partners with the Chinese Academy of Sciences, University of Minnesota, Stockholm Resilience Center, the Royal Swedish Academy of Sciences, The Nature Conservancy, and World Wildlife Fund, along with a network of more than 150 research partners and at least 350 implementing partners, including many cities and counties. The project views ecosystems as capital assets that are often only valued when they are lost. The project works to develop nature-based solutions using the InVEST tools to engage decision makers in the importance of natural capital.

The tools themselves are free models that use maps as information sources and output maps as well. The results are returned in either biophysical terms (like tons of carbon sequestered) or economic terms (net value of sequestered carbon) which uniquely put a price on services consumers take for granted. The models include carbon, coastal vulnerability, offshore wind energy, recreation, urban flood risk mitigation, water purification, wave energy, crop pollination, scenic quality and urban cooling.

Where It's Been Implemented

The Natural Capital Project is currently working with the Bay Area Regional Council, San Mateo County and the Bay Area Conservation and Development Commission to balance research and stakeholder influence to improve coastal community resilience in the San Francisco Bay Area.

Its previous projects have spanned five continents and several focus areas, ranging from blue carbon assessments in Colombia to watershed funds in Kenya to nature-based urban planning in China. Stakeholders have learned to use InVEST to assess the value of their ecosystems and incorporate findings into concrete policies and management plans.

Key Drivers

Many conservation and sustainability movements are overshadowed by a narrow focus on the economy. The natural capital framework offers an approach to give value to essential ecosystem services that we currently take for granted.

Key Factors for Success

Engagement and inclusion of many stakeholders is essential for a successful InVEST project. Reliable data is also important.

Key Obstacles

Using the models requires basic (Geographic Information System (GIS) skills. Sourcing and preprocessing data for the models can also be challenging as they often require highly specific formatting.

References and Resources

- Gretchen Daily, Co-founder and Faculty Director of the Stanford Natural Capital Project, gdaily@stanford.edu
- Elana Kimbrell, Director of Communications at the Stanford Natural Capital Project, elanak@stanford.edu
- Natural Capital Project, Stanford University.
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