InVEST

InVEST (Integrated Valuation of Ecosystem Services and Trade-offs) is a framework of "open source" models for mapping and valuing ecosystem services developed by Natural Capital Project. It currently has 15 models:

- Coastal vulnerability
- Habitat risk assessment
- Coastal protection
- Sediment retention
- Biodiversity
- Marine fish aquaculture
- Marine water quality
- Water quality
- Wave energy
- Overlap analysis
- Aesthetic quality
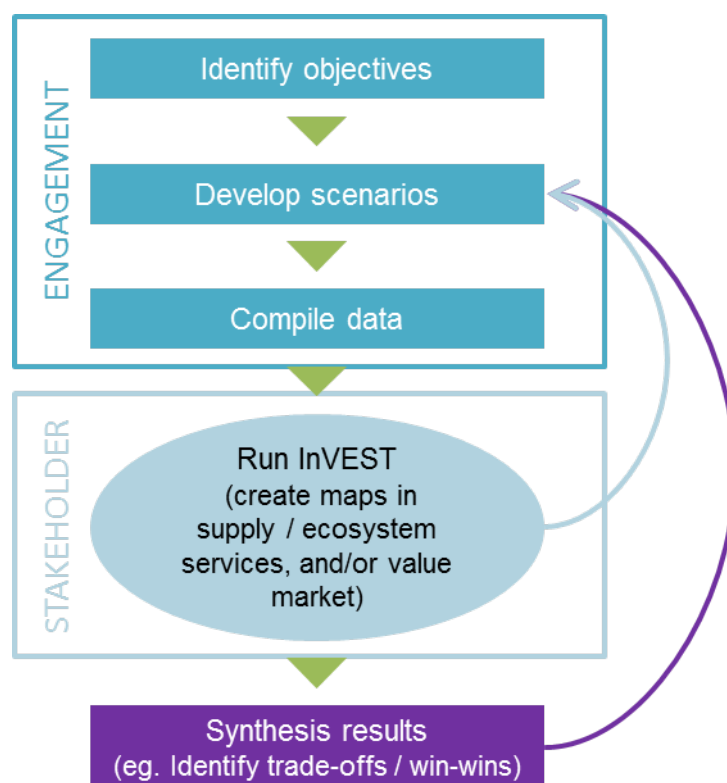- Carbon
- Crop pollination

- Managed timber production

- Reservoir hydropower production

These models are based on production functions that define how an ecosystem's structure and function affect the flows and values of ecosystem services. This allows assessing economic and biophysical consequences of alternative scenarios. The models are coupled with a Geographic Information System (GIS) and produce different outputs: maps, balance sheets and tables. InVEST can be downloaded on: www.naturalcapitalproject.org/.

The outputs of InVEST can be visualized as maps of ecosystem service delivery, trade-offs, or balance sheets.

InVEST is designed to be used as part of a stakeholder engagement process, with stakeholders participating in every step of the process. Stakeholders identify a set of objectives and several alternative management scenarios that may help achieve stated objectives, and the InVEST models estimate the level of ecosystem services produced in each scenario.

After evaluating scenarios with respect to objectives and within the context of local social and cultural values, stakeholders may choose to reiterate the process with newly created scenarios [Guerry et al, 2012].

| Time | at least 6 months |

Technical level	4/4
Advantages	downloadable tool; visual outputs.
Limits	availability and quality of data; limited number of models; understanding of the models; communicating model uncertainty.
Resources needed	data; ESRI's ArcGIS software; basic to intermediate skills in ArcGIS.
Advice	install the software and try it with demo data to have a good idea of what it is possible to do with InVEST.

For more information a user's guide is available on:

www.naturalcapitalproject.org/InVEST.html that explains how to install the software and run InVEST, provides the theory behind each model and describes the input data requirements and how to interpret output results.