Economic Valuation of Ecosystem Services in IW-Projects: Training Materials on the systematic integration of the economic valuation of ecosystem services into the TDA/SAP methodology

Session 2, Subsession 1: „Aim and Scope of a Tier 1 Economic Valuation"

Related reading: Tier 1 Guidance Document, chapters II.1 and II.2, available at: www.iwlearn.net/valuation and www.iwlearn.net/learning/manuals/economic-valuation/

Handout for the participants

Aims/objectives of the Subsession:

1. Introducing the tier 1 economic valuation approach.
2. Presenting the possible aims and objectives of a less resource-intensive EV.
3. Explaining the two methodologies used, and discussing their advantages and disadvantages.
4. Discuss the potential difficulties of tier 1 approach and the two methodologies as well as risks and opportunities of such a valuation.

Short summary of the content of the Subsession:

This subsession introduces the "tier 1" economic valuation approach, i.e. a valuation approach that is simpler and less resource-intensive than an in-depth economic valuation as presented in Session 3. The subsession presents the possible aims/objectives of such a valuation, the limitations, and the principal methodologies used.

Discussion:

This subsession includes a plenary discussion of potential difficulties to be expected when applying the tier 1 approach, as well as of the risks and opportunities of conducting such a tier 1 valuation.

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Session 2, Subsession 2: "Preparation of a Tier 1 EV: Setting the Scene and Scoping"

Related reading: Tier 1 Guidance Document, chapter II.3, available at: www.iwlearn.net/valuation and www.iwlearn.net/learning/manuals/economic-valuation/

Handout for the participants

Aims/objectives of the Subsession:

1. Introducing the set up of a tier 1 economic valuation ("scoping") according to the Guidance Document.
2. Introducing the Checklist for tier 1 economic valuations.
3. [Conducting the scoping as a small group exercise, using the Checklist provided in the Handout "Checklist for Tier 1", and the information and map provided in the Handout "Introduction to Bakul Country".]

Short summary of the content of the Subsession:

This subsession introduces the first steps in setting up a tier 1 EV: setting spatial boundaries with a set of guiding questions, the identification of ecosystems and ecosystem services to be assessed, the determination of the size of the ecosystems and the selection of the proper methodology for the economic valuation (market prices or benefit transfer).

These steps will then be performed by each participant or in small groups, using the Bakul Country example and the checklist (Handout "Checklist Tier 1"). The trainer will provide guidance and answer questions.

Afterwards, the results will be discussed and presented in the plenary.

Questions/group exercise:

For this exercise, you´ll need the "Checklist for Tier 1", and the information and map provided in the Handout "Introduction to Bakul Country".

At this point - i.e. at the beginning of the "scoping" - you are about to set spatial boundaries for the EV, identify which ecosystems are present within the spatial boundaries defined and which ecosystem services are provided by these ecosystems, and which of these might not be relevant. This process is supported by the Checklist provided in the Handout "Checklist for Tier 1".

After determining the spatial boundaries, you start by taking a closer look at the pre-filled matrices in the Checklist (table C1 for freshwater ecosystems, and table C2 for marine ecosystems): this matrices show the ecosystems that can be present in freshwater or marine ecosystems, and the ecosystem services that are usually provided by these ecosystems (according to the MAES typology (European Commission 2013) for freshwater, and to the Millennium Ecosystem Assessment (MAE 2005) and Naber/Lange/Hatziolos (2008) for marine ecosystems).

1) Your task is now to first delete from the respective table C1 or C2 all ecosystems which are not present within the spatial boundaries of Bakul determined.

→Do you want to prioritize? Do you want to exclude any?

2) In a second step, you select the ecosystem services which are similarly not present or not relevant in the ecosystems left, and change the "Y" to a "N".

→Do you want to prioritize? Do you want to exclude any?

After completing these steps, you have a filled matrix which shows which ecosystems and corresponding ecosystem services are included in your economic valuation in Bakul Country. The following main steps of the guidance will focus on these ecosystem services only.

3) After the matrix has been filled, the Checklist is used to keep track of the steps that follow the identification of ecosystems and ecosystem services to be assessed - the determination of the size of the ecosystems to be evaluated, and the evaluation itself, using local market prices or the benefit transfer methodology.

For this, it is recommended to use table C3 of the Checklist; this table is deliberately left empty, and needs to be filled by yourself, according to the ecosystems and ecosystem services selected in the matrix - however, this is easily be done and can then be used to track the progress of the analysis.

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Session 2, Subsession 3: „The Repository of Valuation Studies - conducting the benefit transfer, using market prices and summing up"

Related reading: Tier 1 Guidance Document, chapters II.4 to II.7, available at: www.iwlearn.net/valuation and www.iwlearn.net/learning/manuals/economic-valuation/

Handout for the participants

Aims/objectives of the Subsession:

5   Introducing the Repository of Valuation Studies.
6   Using and getting familiar with the Repository of Valuation Studies.
7   Illustrating the benefit transfer approach.
8   [Performing a benefit transfer exercise starting with the practical use of the repository of valuation studies]
9   Introducing the market prices approach.
10   Summing up the results of the EV elements.
11   Discussing uncertainties of both approaches/the overall result.

Short summary of the content of the Subsession:

This subsession introduces the repository of valuation studies, and the two principal valuation methodologies for tier 1 projects: the market price assessments and benefit transfer. Also, the final step of sum up the results is presented, including a discussion of assumptions and uncertainties connected to these results (which have to be transparently presented).

Group exercise 1: Use the Repository of Valuation Studies

Each participant is asked to do a search in the repository, with the objective of letting the participants getting used to the repository; questions will be answered and assistance provided by the trainer. One of the found studies will then be used in the following exercise, where the trainer leads the group through a step-by-step process to conduct a simple benefit transfer: to decide whether the values found in the repository are transferable (using the guiding questions in the Guidance Document), adjusting the values to present day US Dollar values and for socio-economic differences between the original site and the project area (or Bakul Country).

The trainer will introduce the first exercise, the work with the Repository of Valuation Studies; this exercise can be done based on the fictitious example of Bakul Country, but also using randomly selected ecosystem services.

1. Open the following URL: www.iwlearn.net/learning/manuals/economic-valuation-of-wet-ecosystems/the-repository-of-economic-valuation-studies; click the button "Open Repository", and you will find the search function here.

The search function offers eight search fields with predefined search options, which you should fill according to the ecosystems and ecosystem services to be evaluated. The search fields and options are the following:

- Broad ecosystem type: marine/freshwater/all.
- Specific ecosystem: list of specific ecosystems (such as mangroves, lakes etc.).
- Services: list of specific ecosystem services.
- Valuation Methods: list of valuation methodologies.
- Monetary Unit: Dollars, and other currencies listed in the repository.
- Socio-economic characteristics - GDP/capita: list of the countries/regions for which there are studies in the repository.
- Socio-economic characteristics - area: rural or urban.
- Warm or cold water ecosystem.

2. Enter the search parameters that were agreed for Bakul Country, or for example the ecosystem service "moderation of extreme events" (search field E) of "mangrove ecosystems" (search field C), calculated with the "damage cost avoided" (search field F) approach in "US Dollars" (search field H).

3. Below the filled fields, you´ll find the result of the search - a link for exporting the results to Microsoft Excel, and a list of the studies found.

RESULT: As result of this exercise, you will have a number of studies selected from the repository which roughly "fit" to your project area, or to Bakul.

4. You now have to determine whether the economic values of the ecosystem services identified can be transferred to your project area or to Bakul.

In order to do this, a set of "criteria" - characteristics and traits of the area/areas which are evaluated in the study/studies taken from the repository - will guide you through the process. Basically, the characteristics of the study area should be as similar as possible to your project area or to Bakul:

- The population density of the site, ranked as high/medium/low;
- per capita income should not differ by more than 100% (i.e. it should not be less than half and not more than double as high);
- whether it is an urban or a rural area;
- whether the area is economically used, i.e. through agriculture, fisheries etc.;
- the intensity of its use by tourists/visitors, ranked as highly visited/medium/rarely visited; and
- whether it is a warm or cold-water ecosystem.

RESULT: One study that "fits best" - there could also be more than one, but for continuing, let´s choose a single one.

Group exercise 2: Conduct a Benefit Transfer

Based on the selected study, the trainer will continue with the benefit transfer, and introduce the topic in his/her presentation.

Step 1: Inflation rates

In the first step, the values stated in the selected study are transformed to their current value, i.e. adapting the value to inflation using the appropriate inflation rate (in most cases of the country in which the study was conducted).

The CPI inflation rate for the US Dollar can be calculated easily via the following website: http://data.bls.gov/cgi-bin/cpicalc.pl?cost1=1&year1=1995&year2=2016

- The result is a rate, stated as, for example: "1 U$ in 1995 has the same purchasing power as 1,58 U$ in 2016".

- This ration of 1,58 has to be applied to the original value (i.e. the original value has to be multiplied by this number, raising the values).

The CPI inflation rate for the Euro zone and several other industrial or semi-industrial countries can be extracted via the following website:

Current inflation: http://www.inflation.eu/inflation-rates/cpi-inflation.aspx

The inflation rates of the last years are displayed in a summarized way only in the CIA World Factbook: https://www.cia.gov/library/publications/the-world-factbook/fields/2092.html#th

- Here, the latest available information on inflation rates in all countries of the world is listed. It is suggested to use these inflation rates as average rates in case no other, more specific information is available.

Step 2: Transfer the adapted value into U$ of the same year

In the second step, the present value of the benefit transfer study calculated in step 1 is converted into present-day US Dollars.

- It is recommended to use the following website, although many others exist (this one goes back to January 1990; public sources, such as World Bank or IMF, were also assessed but found to be not user-friendly - the private website "oanda" is easy-to-use and reliable): https://www.oanda.com/currency/converter/

Step 3: Incorporate the difference in price levels

In this step, the difference in price levels between the benefit transfer site and Bakul are accounted for. A list of countries rated according to the GDP (PPP), based on IMF and World

Bank data, can be found at Wikipedia - it is recommended to use this list as a basis, because extracting the information from IMF or WB databases is difficult.

https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(PPP)_per_capita

The adjustment is done by calculating the ratio in GDP between the benefit transfer site and the project area, resulting in a factor that will be applied to the current US$ value calculated in the steps 1 and 2 above.

Step 4: Fill in the results in the "Checklist for Tier 1" table C3.