ESR17 - Julian R. Berlin

CHANGES Meeting,

Les Diablerets, Switzerland

07 Apr– 11 Apr

Main idea and current implementation status

CBA in the SDSS

TU Delft Delft University of Technology

Agenda

- Introduction
- Preconditions for the module
- Estimation of the benefits
- Output of the module
- Current progress (Demo)
- Ongoing work
- Future work & improvements

Introduction

- The aim of the module is provide one or several methods to evaluate the efficiency of an investment in a quantitative terms and get an overview of all the costs involved in the risk reduction alternative.

- The user interface includes a investment definition wizard, where the user can indicate the costs associated with the Implementation of the measure, the period of investment, the lifetime of the project, the interest rate, among other parameters.

Preconditions for the module

- **Administrative unit map defined**
- **Risk reduction alternative(s) defined**
- **The annualized risk** has been calculated for the project for each adm unit defined (Risk for business as usual and with risk reduction alternative)
- **Global Interest rate** for the whole project (to compare each alternative under same conditions)
- **Period of analysis** (same idea as above)
- For the **Scenario usage**, for each future reference year:
  - New risk for the new situation without risk reduction
  - New risk for the new situation with risk reduction in place

Estimation of the benefits

- The benefits are estimated in the following way:

$$\text{Benefits} = R_0 - R_1$$

Where:

R_0 = Economic Losses without risk reduction

R_1 = Economic losses with the risk reduction alternative in place

Output of the module

- A metric about how good is our investment in economic terms, for the moment the module will support the following metrics:
  - BCR (benefit-cost Ratio)
  - NPV (Net Present Value)
  - IRR (Internal Rate of Return)

  These metrics will be used as criteria in the MCDM

- All cost & benefit data will be stored in DB

Current version (Demo)

- Current implementation can be found at:
- http://changes.itc.utwente.nl/CHANGES-SDSS/
- Menu →Cost Benefit analysis → Conduct CBA for alternative

Ongoing work

- Continue working on the CBA.
- Poster for EGU 2014 centered of the CBA for SDSS.
- Providing help and support in the vulnerability management of the SDSS.

Future work & improvements

- Make the UI for comparison of different alternatives (same method, same period of analysis)
- Improve the current UI in terms of usability
- Make the persistence of the module
- Add support for Cost-Effectiveness analysis
- Add support for monetization of intangible elements
- Work out the best way to visualize the results
- Contribute to the book of changes in the following sub-sections:
    - Architecture part of the SDSS
    - CBA

Questions ?