



EFORWOOD
Sustainability Impact Assessment
of the Forestry - Wood Chain



Deliverable D1.5.5

A technical report documenting the results of the MCA and CBA procedures for a regional-defined single chain in Baden-Württemberg

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Executive Summary

For the evaluation of sustainability impacts in Eforwood, a two-fold set of approaches is proposed and put to test:

- (1) Multi-criteria analysis (MCA) is designed to integrate data from the Eforwood database with qualitative stakeholder information and preferences.
- (2) Cost-benefit analysis (CBA) and cost-efficiency analysis (CEA) perform evaluation on monetary terms.

After clarifying methodological issues in the deliverables PD1.5.2 and PD1.5.3, the evaluation tools were tested on a “real-life” example, the Baden-Württemberg single chain. The major preparatory tasks were to select available indicators, to adapt the existing chain and to search for and define feasible alternatives for the single chain evaluation. The work of the evaluation group has been strongly conditioned by the limited number of available indicators and the lack of reliable data available at the time the deliverable was to be carried out (06/07 – 12/07). In this respect, additional effort by MCA and CBA teams was required in order to be able to perform a meaningful evaluation exercise. While poor data quality is a threat to the validity of results from either of the methods, it is especially critical for the cost-benefit analysis, the sound implementation of which requires a consistent, reasonably complete and accurate dataset. Moreover, the lack of actual choice or policy alternatives to be analysed eventually precluded the CBA team from implementing cost-efficiency analysis due to conceptual infeasibility.

As a consequence of the abovementioned problems, the MCA and CBA teams focused their attention on different methodological tasks.

The MCA team put weight on software-development and initial stakeholder involvement. A software-prototype was developed based on the PROMETHEE outranking method and implemented in C++ offering a windows-based client-server technology. A stakeholder workshop was organized in Freiburg to (i) test this prototype for its applicability, and to (ii) gain experience in the procedure of stakeholder involvement in Eforwood. The feedback gathered after the workshop concerned both software-usability and general aspects of Eforwood. The MCA-prototype was well-accepted with the attempt to gather preference information, to facilitate group decision making and to support an informed decision-making process. There were also warnings that there are still many sources for black-box effects and over-simplification. Regarding the Eforwood context, the flexibility of the system to mirror

2 specific circumstances by chains and indicators as well as a consistent definition of system boundaries was mentioned as crucial.

The CBA team focused on the implementation of monetary evaluation of the single chain. The main issues were to test and evaluate the conversion from data as reported to the Database client into the monetary flows and values needed for undertaking a CBA and to identify gaps and needs for improvements in data reporting. We illustrate the potentials of including the value of externalities in FWC evaluations, focusing on GHG-emissions as well as non-GHG-emissions. Considerable effort in supplementary data collection was made to that end, and the experience gathered will be made available for the Modules of EFORWOOD to ease their future collection for the EU-level chains.

Summarizing, we conclude that (a) it could be demonstrated by a real life example how MCA and CBA could be applied to the analysis of FWCs, (b) data and information collected for the single chain phase of EFORWOOD still includes substantial gaps and uncertainties with regard to the exact content and context of reported indicator values. A standardized use of chain topology as well as indicator data for evaluation modules is not possible, yet; (c) MCA and CBA may interact much closer to make the best use of available information. In the current exercise the closer interaction was hampered by insufficient data.