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WORK PACKAGE 7: ECONOMIC AND ENVIRONMENTAL ASSESSMENT

OBJECTIVES

The main objectives of WP7 are:

- To assess the life-cycle sustainability of new technologies through an environmental life-cycle analysis and a socio-economic cost-benefits analysis,
- To introduce a structured innovation management process, identify business opportunities and associated relevant business models and develop exploitation strategies and associated partner and funding strategies.

PROJECT PROGRESS AND INTERIM RESULTS

Life cycle analysis (LCA)

The LCA is conducted according to the ISO 14040 series and follows the methodology described in the ILCD handbook¹.

The first phase is the definition of the goal and scope of the study. This is the object of the **deliverable 7.1**. At the moment, it has been proposed that the LCA should focus (in a first run) on “accounting” all environmental burdens associated to the new technologies. Another objective could appear later in the project as for example “comparing” new technologies to a “reference” technology.

In view of collecting environmental information for the “accounting”, questionnaires have been prepared for all unit operations of the partner companies involved in the project. These are to be completed for collecting information for the costs-benefits analysis.

Costs-benefits analysis (CBA)

Cost benefit analysis (CBA) is an analytical tool for judging the economic advantages or disadvantages of an investment decision by assessing its costs and benefits in order to assess the welfare change attributable to it². CBA estimates and compares the total benefits and costs of running a mine to the members of the

¹ European Commission - Joint Research Center - Institute for Environment and Sustainability (2011) International reference life cycle data system (ILCD) handbook, http://eplca.jrc.ec.europa.eu/?page_id=86

² Guide to Cost-Benefit Analysis of Investment Projects, Economic Appraisal tool for Cohesion Policy 1014-2020, Directorate-General for Regional and Urban Policy, p.11





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community, where the mine project is going to develop. To do this, a CBA takes into consideration all stakeholders in the community affected by the mine and values the effects on their welfare in monetary terms. These benefits and costs are combined over the whole community and estimate the **net social benefit or cost** (the total benefit less total cost) to the community.

The **deliverable 7.3** (Cost-benefit analysis manual) provides guidelines for the CBAs to be conducted within SLIM (figure 1).

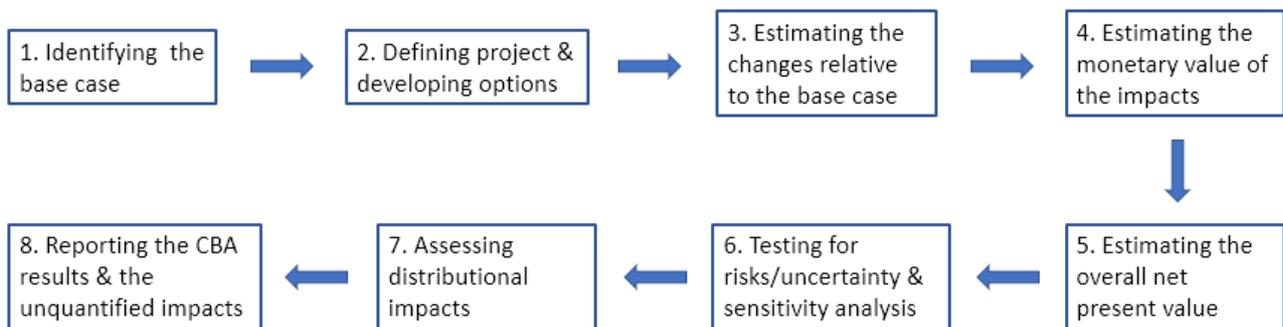


Fig. 1: Steps in conducting a CBA

Exploitation strategy

There are several ways to exploit innovation or R&D results. For EU projects it can often be divided on to either a dissemination route or a commercial route (figure 2). The exploitation strategy is one of the specific cross-cutting activities in SLIM which will support replication and accelerate the uptake of innovation and information developed. To gather the exploitation-relevant information needed for business opportunity identification and innovation management, different methods and tools were used so far:

- Exploitations workshops,
- The SLIM Checklist for Exploitation;
- The SLIM Value Proposition Canvas;
- The Innovation Radar Questionnaire.

Using a combination of these tools, we have been able to create a good overview (and initial description) of the innovations coming out of SLIM, upon which we will build as the project progresses. Each exploitable result will be fully characterized by the end of SLIM and plans for innovation exploitation after the project will be described.

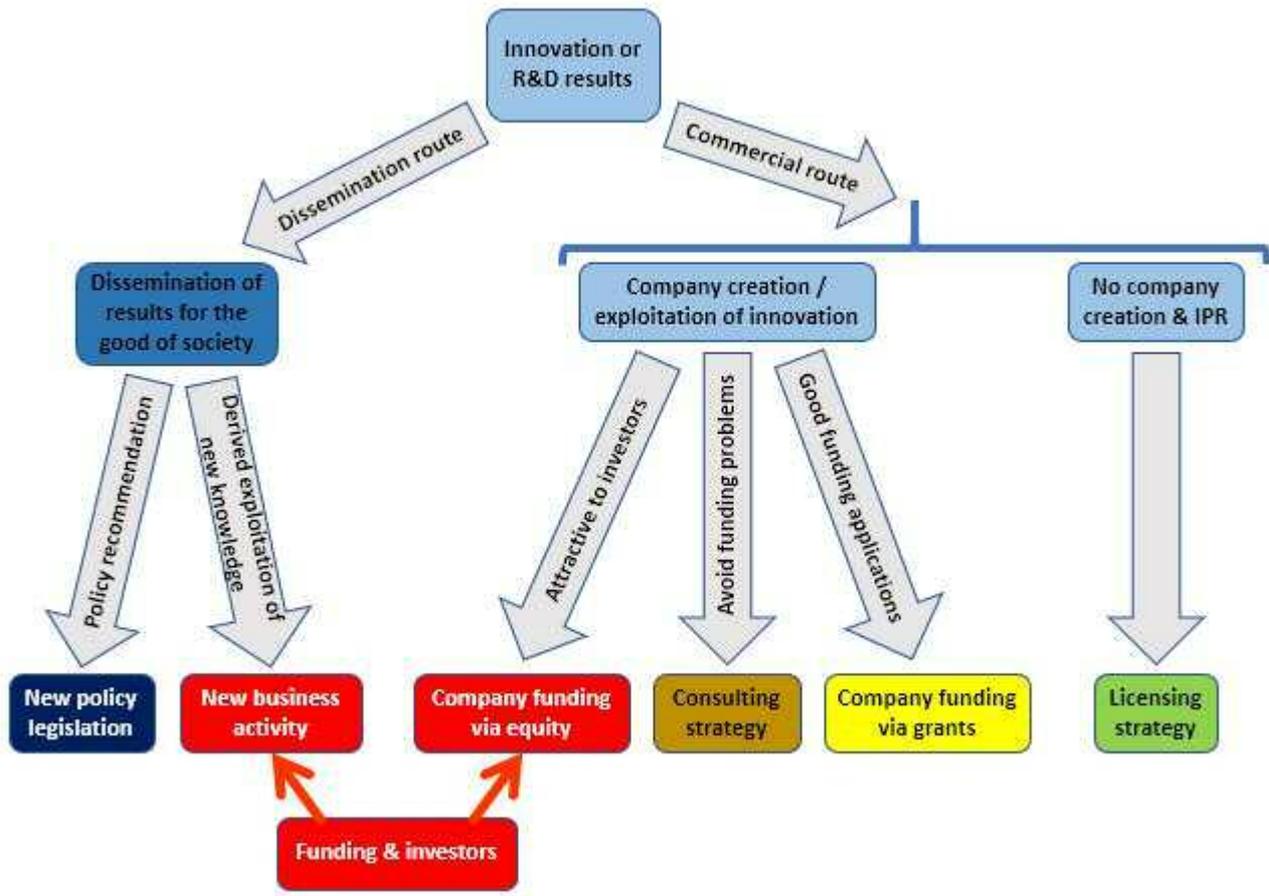


Fig. 2: Exploitation routes