Factsheet on a recommended practice

D3.4

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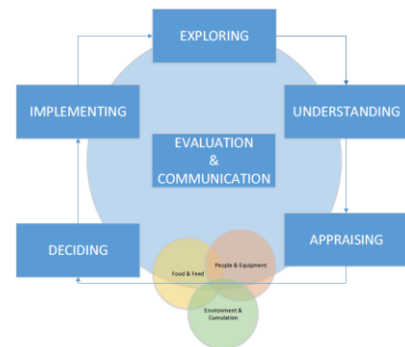
The objective of this deliverable is to illustrate the recommended practice of analysing the possible cause-effect chains including mitigating and recovery measures for one selected hazard. This is done from the perspective of SOMOS Work Package 3, i.e., the analysis focuses on cumulative effects, ecosystem interactions, and other changes in the surroundings.

The framework developed in the SOMOS project (see figure 1) describes the approach to explore, understand and appraise hazards (in the first three steps) and to come to decision and implementation (steps four and five).

Here, we build on the work conducted in task 3.1 "Identify safety aspect of Interactions and Cumulative Effects" where key hazards were identified. Subsequently, and reported in D3.3 and D3.5, the nature of these hazard was explored.

Given the fact that hazards of multi-use are often characterized by uncertainty, complexity and ambiguity, it is concluded that a flexible participatory approach is required, bringing together knowledge of all stakeholders in a joint process of identifying and addressing cumulative effects and ecosystem interactions.

Figure 1: the SOMOS Framework

It is recommended to use the *mental modeller approach* . It is a well-known method used in participatory assessment, is flexible, can be used for quantification in a later stage and makes it easy to model the interaction between various hazards.

This factsheet illustrates the mental modeller approach (see figure 2). The cause-effect chains for the hazard "slow changes to biodiversity" is visualized using the Mental modeller software. On the left, we start with the top event: seaweed farm and windfarm change biodiversity. Moving right, next are the four identified hazards, in grey boxes. From this hazard example, blue arrows are drawn towards the consequences marked in orange.
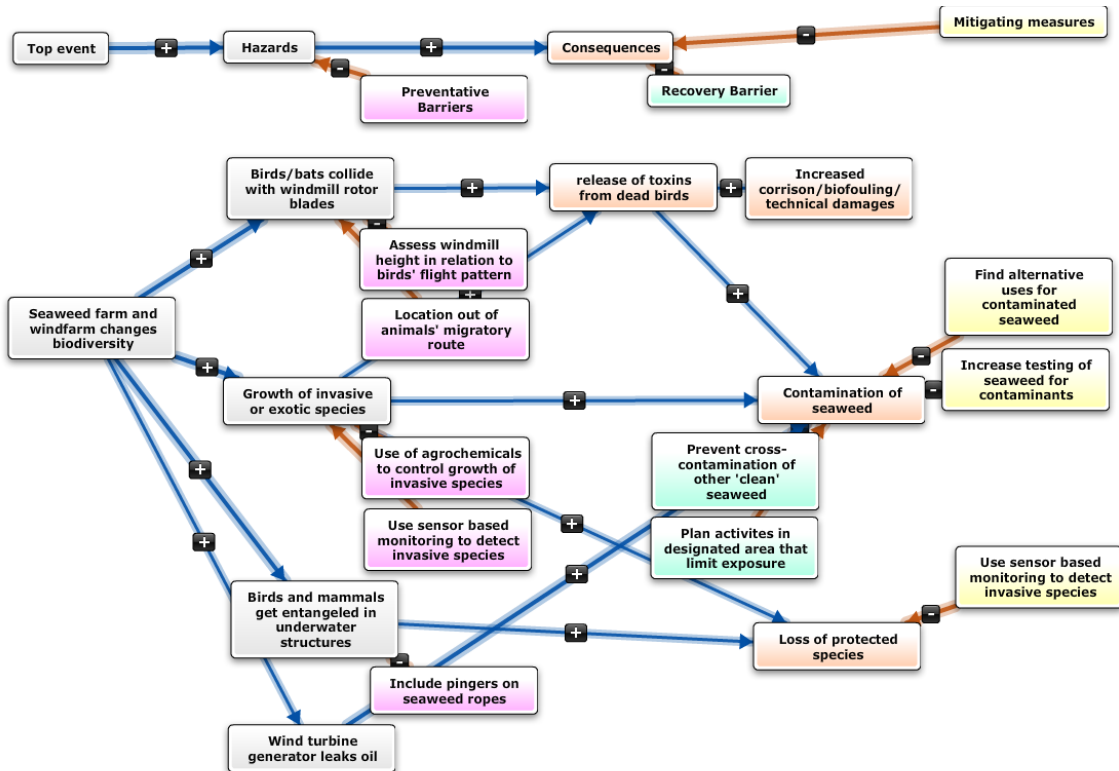
Figure 2: Mental modeller visualisation for slow changes to biodiversity due to the presence of a combined wind-seaweed farm

Note: Blue arrows indicate a positive relationship, i.e. a hazard resulting in a consequence, whereas orange arrows indicate negative relationships, such as preventative, recovery or mitigating measures that would counteract the event of a hazard or consequence. In addition to the cause-effect chain, the figure also visualizes three different barriers/ measures: preventative – in purple, recovery – in green, and mitigating – in yellow. The preventative measures are expected to prevent the hazards from happening. The recovery measures set in, to recover from the consequence, and the mitigating measure is a last remedy to adapt to a consequence in a way that mitigates its negative effects.

2. Justification

This deliverable has been peer reviewed by Luc van Hoof (project coordinator).