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Cognitive maps

In 1976, in a pioneer work on cognitive maps, R. Axelrod draws a new approach to the analysis of decision making based on 'cognitive maps.' Axelrod defines a cognitive map as a graphic representation intended to capture the structure of a decision maker's stated beliefs about a particular problem. Cognitive maps are an essential step towards system thinking approach, especially for complex systems with lack of data and knowledge.

Map formats and software

Different formats and software can be used to draw the conceptual maps.

- The maps can be hand drawn.
- Microsoft PowerPoint or OpenOffice.draw (part of the freeware package OpenOffice.org) can be used to draw elements or boxes and arrows and add annotations. This type of software is interesting for communication purposes but can be inconvenient while drawing the map because of size of slides.
- Commercial modeling software like Stella[®] (www.iseesystems.com) and ExtendSim (www.extendsim.com) are designed for system modelling by using a simple set of drag and drop Icons that can also be customised. ExtendSim offers a hierarchical structure that is very helpful in organising the knowledge with relevant level of detail. These software can be used in the design stage without using the numerical modelling resources they offer.



VALMER Interreg 4A Channel project (2012-2015).

Coordination by M. Philippe, J. Ballé-Béganton and D. Bailly

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References





Conceptual map of ecosystem services as a tool for sustainable envioronmental management, adapted from Pendleton et al., 2015.



Example of conceptual model using Cmap.