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Foreword

In its working programme, the Dutch Advisory Council for Research on Spatial Planning, Nature and the Environment (RMNO) concentrates, among other things, on the role and the appreciation of knowledge in decision-making processes at the strategic policy level. Being instruments in integral assessment, integrated models receive special attention as a tool for the interaction between the world of research and the world of policy.

Integrated models are models which consist of various linked modules and which are used for "integrated assessment", "an interdisciplinary process of combining, interpreting and communicating elements of knowledge from various scientific disciplines in such a way that the maximum number of aspects of a societal problem can be included in their interrelationship for the purpose of policy-support" [1].

There are a number of reasons why it is so interesting to examine in what circumstances and preconditions integrated models may be contributory factors in narrowing the gap between science and policy.

First of all, there is an increasing demand for an integral approach to policy issues. There are no cut-and-dried solutions to complicated problems with many societal aspects (and therefore with many stakeholders). The environment and nature are often elements in a broader context: the environment in relation to spatial planning, the environment and liveability, the environment and the economy. This also means a confrontation with various approaches to problems. Apples seem to be compared more and more often with pears. How can one make these considerations more transparent?

Integrated models are often seen as an important tool for making these considerations transparent. Integrated models have already been used for (inter)national policymaking on complex environmental problems. The RAINS model is one example of an integrated model that was used in international negotiations for reducing acidifying deposition. The RIVM, the Dutch National Institute for Public Health and Environmental Protection, developed an integrated model (IMAGE model) for the global issue of climate change. It also served for international negotiations. Incidentally, this model was first tested by a group of international policy-makers, after which special adaptations were made for interactive use.

Also at the regional level there are various decision-making support systems that are based on linking models for water management, measures against acidification, etc.

RMNO's interest is mainly focused on the way in which integrated models are used for the interface between research and policy. How do the combination, interpretation and communication of knowledge elements go in actual practice? Are these models tools or tyrants? Will the scope for political considerations be technically curtailed? Is the pursued integration a utopia or can one actually reach meaningful conclusions about complex problems? What are the uncertainties in the forecasts? And are they actually forecasts?

On 29th March 1999, the RMNO held a seminar on this subject. The aim of this seminar was to explore under what circumstances and on what conditions integrated models can contribute to narrowing the gap between the world of science and the world of policy.

The Advisory Council formulated the questions for the seminar as follows:

- What successes have been achieved with integrated models for underpinning policies?
- For what kind of policy issues may integrated models be helpful tools?
- What need is felt by policymakers for these kinds of tools?
- Can a policymaker choose from various "quality levels" of integrated models? (Compare the IMAGE model based on simplified versions of the Global Circulation Models, which are much more complex.)
- Are there any other ways for integrated assessment, and when are they to be preferred? What is the relationship with integrated models?
- Are any models erroneously used as a kind of state-of-the-art "truth machine" ("Speaking Truth to Power", a kind of modern Delphic oracle)?
- What about the linking of different fields of knowledge within the integrated model (especially the behavioural aspects which are so difficult to model)?
- How will we deal with the different kinds of uncertainties?

– What about the validation and verification of these models? What problems may be encountered on the subject of gathering data?

Various scientists and policy-makers have been asked to look at these questions and give their opinion. You will find their contributions in this issue of Integrated Assessment. I wish you much reading pleasure and learning.

Prof. Roel In 't Veld
Chairman of RMNO

References

[1] J. Rotmans, Methods for IA: The challenges and opportunities ahead, Environmental Modelling and Assessment 3(3) (1998) 155–179.