Chapter 6

Monitoring, Analyzing and Understanding the Dynamics of Complex Processes:
The Case of the Public Debate on Pesticides in The Netherlands

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ABSTRACT

This chapter describes the methodology and the outcomes of an analysis of the public debate on pesticide risk reduction in The Netherlands in the period 1995-2008. The objective of the chapter is to get transition management on the research agenda of scientists and professionals in the discipline of informatics. The challenge for this discipline is to design societal Information Systems next to existing agricultural, environmental, and geographic Information Systems. Societal Information Systems could help action researchers and policymakers to better understand and eventually intervene in transition processes in agriculture. Content analysis is the corner stone of the methodology. The analysis revealed the existence of two social systems: the general public focusing on pesticides, and the agricultural community focusing on crop protection. Application of a dramaturgic approach revealed the key moments and the key actors in the debate, and also revealed the discourses of the key actors, respectively challenging and defending the existing institutions.

INTRODUCTION

The emphasis in this chapter is on a methodology for monitoring and analyzing public debates on sustainable development in Dutch agriculture. The methodology and the matching informatics

are described, and outcomes are shown for the public debate on pesticide risk reduction in The Netherlands in the period 1995-2008. The methods presented are content analysis and dramaturgic approach.

Content analyses have been conducted for other controversial subjects in agriculture and horticulture. A very interesting one with respect

to regional planning was about the differences in process and speed of the development of Agriport A7 and Bergerden, two new greenhouse location projects in The Netherlands. Agriport A7 developed quite fast, whereas Bergerden felt short of expectations. The main actors and drivers in the two locations were quite different: in Agriport A7 private sector actors (entrepreneurs) and private sector drivers (climatic conditions and agro-logistics) were dominant. In Bergerden, on the other hand, public sector actors (policymakers) and public sector drivers (energy innovation and relocation policy) were dominant. In Agriport A7 the key actors were successful in grasping chances and developing win-win solutions. In Bergerden the key actors tried to enforce progress through fixation on conventions.

Very interesting with respect to sector development was an analysis of the reporting on organic agriculture in the conventional farmers' weekly *Boerderij* in the period 1999-2008. In the course of the years the numbers of articles increased, and the reporting changed from mainly negative in the years 1999-2002 to mainly positive in the years 2006-2008. The public sector actors (policymakers and researchers) emphasized the difficulties of conversion to organic agriculture. The private sector actors (farmers and food industry) underlined the perspectives of organic agriculture. The policymakers and researchers were not aware that their discourse was undermining their own objectives with respect to conversion to organic agriculture. These two examples (greenhouse locations and organic agriculture) stress the importance of social factors in transition processes. Attitudes and social dynamics are crucial for achieving policy targets.

The challenge for sociologists, political scientists and policymakers in this context is to acquire understanding of the dynamics of public debates. Informatics can be helpful in designing or improving methods to analyze, understand and simulate public debates on basis of the content of written sources: How to identify the roles of different actor groups? How to recognize opponents and proponents in the public debate? How to identify the decisive moments in the debate? What makes an actor ready to change current institutions? What are the right conditions for a fruitful public debate? How to accommodate the dynamics in actor-based simulation models? Additional tools for analyzing and predicting the course of public debates are very welcome.

The objective of the chapter is to get *transition management* on the research agenda of scientists and professionals in the discipline of informatics. The chapter aims to make experts in agricultural and environmental informatics aware of the impact of attitudes and social dynamics on the achievement of policy goals. They are challenged to further explore and exploit the information on the roles and relations of actors and drivers that is available in written documents on public debates. The analysis presented in this chapter was achieved manually. With the help of experts in informatics it must be possible to develop *societal information systems*.

BACKGROUND

In this section both the societal background of the public debate on pesticides and crop protection in The Netherlands and the methodology for retrieving and analyzing the public debate are described.

Societal Background

The Dutch government applie special action plans for the reduction of pesticide use and pesticide risks since 1991. In the first pesticide action plan (LNV;1991) the main focus was on volume reduction (50% compared to 1984-1988). The target was achieved: in 2000 the volume reduction amounted to 52% (EC-LNV; 2001). In the second pesticide action plan (LNV; 2001) the main focus was on environmental impact reduction (95% compared to 1998). The target is within reach: in

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