

## **The Dutch policy regarding the transition towards a bio-based economy:**

### **Ex-ante evaluation from a transition science perspective**

The current global economy is highly dependent on fossil resources in providing our demand for energy, chemicals, and materials. Fossil resources however are finite and their depletion has wakened the notion of scarcity. In parallel, the global economy's supply of fossil resources increasingly relies on a limited number of countries in politically instable regions. Not only supply is an important issue. The abundant usage of fossil resources is an important, if not arguably the single most important, cause of climate change. In response to these constraints, the Dutch government is contemplating an economy in which fossil resources are increasingly replaced by renewable, bio-based, resources. For this cause, a policy program was formulated that justifies and explains the government's role in guiding the transition towards a bio-based economy (Department of Agriculture, Nature and Food Quality, 2007).

This paper provides an ex-ante evaluation of the Dutch government's policy on the transition towards a bio-based economy from a transition science perspective. The main research questions are: How can the current Dutch policy for stimulating a bio-based economy gain from recent insights brought by transition theories? What guidelines can be derived for future policy making concerning a bio-based economy? The transition science perspective offers valuable insights that can be used to reformulate and (further) specify the Dutch policy program on the transition towards a bio-based economy. More specifically, the Multi-Level Perspective (e.g., Rip and Kemp, 1998; Geels, 2002; Geels and Schot, 2007) explains the mechanisms in transition processes and provides a useful framework for long-term and strategic policy development. It does not provide any practical guidelines though. For this purpose, the Transition Management literature is more useful. This literature provides more practical guidelines on the do's and don'ts in guiding a transition trajectory (and on the

limitations faced in trying to do so) (e.g., Rotmans et al., 2000; Wiskerke and Van der Ploeg, 2004; Loorbach, 2007). Finally, the approach of Strategic Niche Management suggests that more attention should be paid to lower levels of intervention and proposes several guidelines for the formation of social networks and the quality of learning processes in niche experiments (e.g., Kemp et al., 1998; Raven, 2005; Van der Laak et al., 2007). Although the insights derived from transition science are quite universal by nature, this paper demonstrates that they can be applied to the specific context of transition towards a bio-based economy. Furthermore this paper points out that the relevance of such analysis is not limited to the Dutch context but may also be instructive to other countries' governments that seek to transform the fossil basis of their economies.

This paper is divided into four sections. The first section describes what is meant by a bio-based economy in closer detail. The second section explicates the Dutch policy program: why government is involved, what its role is and how it is trying to achieve its objectives. The third section introduces the transition science perspective. It briefly covers the literature on the Multi-Level Perspective, Strategic Niche Management, and transition management. Consequently these approaches are projected on the Dutch policy program and used to specify guidelines to improve this program in order to increase its likelihood of success. In conclusion this paper summarises the main findings and identifies the limitations which need to be addressed in future research.

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