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System Innovations in Rural Areas

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Preface

Rural areas in the Netherlands have been subject to increased tensions between the dynamics of economy and landscape quality. Drastic innovation will be needed to cope with those tensions. One thing is clear: government alone cannot accomplish this innovation – even if it could previously - and neither can other parties. A participatory and integrated approach of innovation will be required. To come to such an approach is really a system innovation. The present paper describes what this approach may be like. The new approach was tested in reality in The IJssel Valley. The resulting experiences are evaluated on the basis of recent insights. The article concludes by presenting a few points of learning.

A former version of this article has been presented at the Fourth International Conference on Multiple Use of Land that was held from June 20-22, 2002 in Bellingham, Washington USA. This article has been adapted somewhat and is now made available for a larger reading public.

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1. Introduction

In the countryside of the Netherlands growing tensions are developing between the dynamics of economy and the quality of space (ICES/KIS-3 2001; NRLO 1998). As a result of a growing economy and a growing population, increasing amounts of space are needed for transportation, economic activities and housing. If it were possible to recognize all claims for space, the Netherlands would need an area as large as the province of Zuid-Holland (RPD, 2001). Furthermore, space is at risk of being split up between all kinds of functions. As a major landscape producer, agriculture is in danger of being ruined amidst the violence of those claims for space. Scheduled expansions of nature are brought about with great difficulty only (NPB, 2002).

At the same time, having an attractive environment is becoming an increasingly important factor determining the location of a business. Many companies are footloose, looking for an environment that is a good place for their employees to live, work and have their leisure activities. Moreover, people will spend more time in their houses or their immediate environments in the 21st century. As a result of increased prosperity, for example, they make higher demands on the quality of that environment. What they want to find is rest, room and quiet: a green experience to counterbalance the hectic urban life.

In order to cope with the tension between the dynamics of the economy and the quality of space it will be necessary to make drastic and strategic changes, so-called 'system innovations' (NRLO, 1998). However, it is no longer possible to implement such innovations in a traditional top-down manner. This has to do with their complex substance, although it is also associated with the growing number of relevant actors.

The present paper will first discuss the traditional top-down and linear model of innovation in rural areas. Next, it will present an outline of a participatory model of innovation (section 3). The next section will describe how this model was made operational and applied in a specific area (IJssel Valley). Section 5 will assess the application. The paper ends with conclusions that are presented as points of learning.

2. The traditional innovation model

Until the late 1980s the spatial quality of rural areas in the Netherlands was strongly determined by design and management efforts for the benefit of agriculture and its productive capacity. Innovation policies at the time were designed to increase agrarian productivity.

What was used in those days was a linear innovation system, which was also referred to as 'the RIE trio', RIE being short for Research, Information and Education (Rutten & Van Oosten, 1999). The following three phases are distinguished in the model (Van Dijk et al., 1993; Verkaik, 1997):

- Knowledge development (fundamental, strategic, applied and practical research);
- Knowledge dissemination, including providing information and education;
- Knowledge application, i.e. introducing new methods and techniques on the shop floor (figure 1).

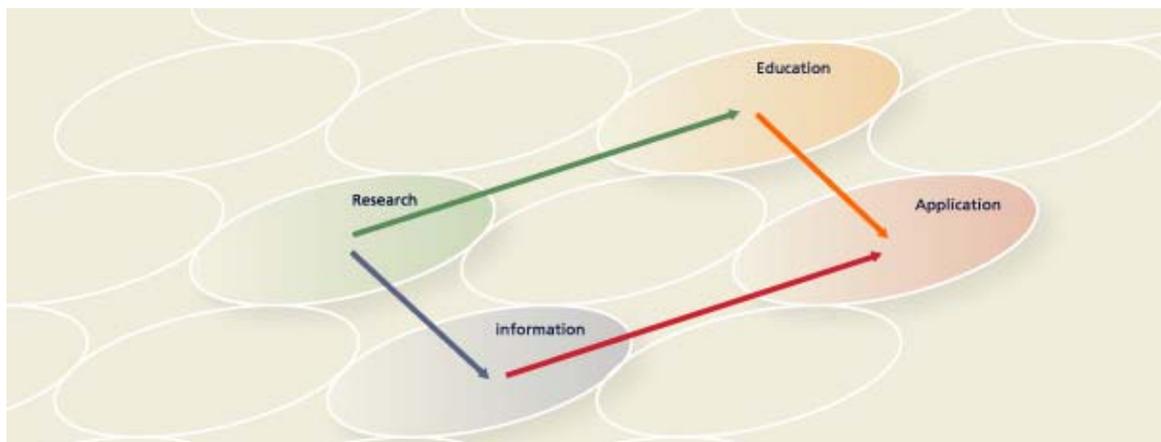


Figure 1. The RIE model

The model used to be effective when objectives were unambiguous and self-evident to all those concerned. The aim was to increase the production volume of agriculture, to reduce cost prices, to improve product quality and to achieve the best possible types of land use, water management and land development for agriculture. The marks it left in the landscape can still be seen: large and square plots, canalized drainage, few hedge banks, conspicuous farm buildings, blocks of greenhouses and poor access to rural areas (Verkaik & Souwer, 2001).

3. A participatory model of innovation

The time that rural area development focused unambiguously and exclusively on food production is past. Rural areas, it is said, should change from production space into consumption space (ICES/KIS-3, 2001). Although this clearly suggests a new objective, it obscures the fact that many different interpretations are involved here. For example, one group wants to have more space for attractive housing, another group wants to have more space for nature, yet another for improving transportation, a fourth group for non-agricultural economic activities, et cetera. Furthermore, our space has been 'historically mortgaged' (Kremers, 2001). Here Kremers refers to those environmental problems in rural areas that are still to be solved (manure!), to the debate on animal health and welfare, the decreasing quality of landscape and nature and the crumbling legitimization of agriculture in society. A third issue involves the tremendous dynamics of the environment, which is the result of several mega trends. Schnabel (2000) summarized these trends with five i-words: internationalization, informationalization, individualization, intensification and informalization.

Summarizing, it can be said that a complex situation has developed with many actors who, in addition, have differing goals, which are not easily reduced to a common denominator. As Frouws (1994) put it: "Perspectives are no longer shared by all those concerned. Increasingly, people have an eye for differential development opportunities. It is possible to imagine several different ways of responding to various challenges and issues." The challenge is to accomplish innovations that transcend individual interests and sectors while taking into account both current and long-term bottlenecks (system innovations), which provide room for the dynamics of the economy while at the same time working out favorably for the quality of rural areas.

It is no longer possible to achieve this type of innovation through a linear process as described in the RIE model; rather, it requires that all kinds of parties cooperate and that initiatives are taken from the bottom up. In view of this it has been suggested to apply the so-called 'KEGS model' (Kalden, 1999), in which knowledge institutes, enterprises/citizens, government bodies and social organizations cooperate to achieve innovation (Figure 2). Knowledge institutes and their researchers and scientists may either be actively initiating or carrying out assignments. Designing studies will be particularly suitable for revealing new – technological or spatial – possibilities while at the same time incorporating the knowledge and experience of other *stakeholders* into the design process.

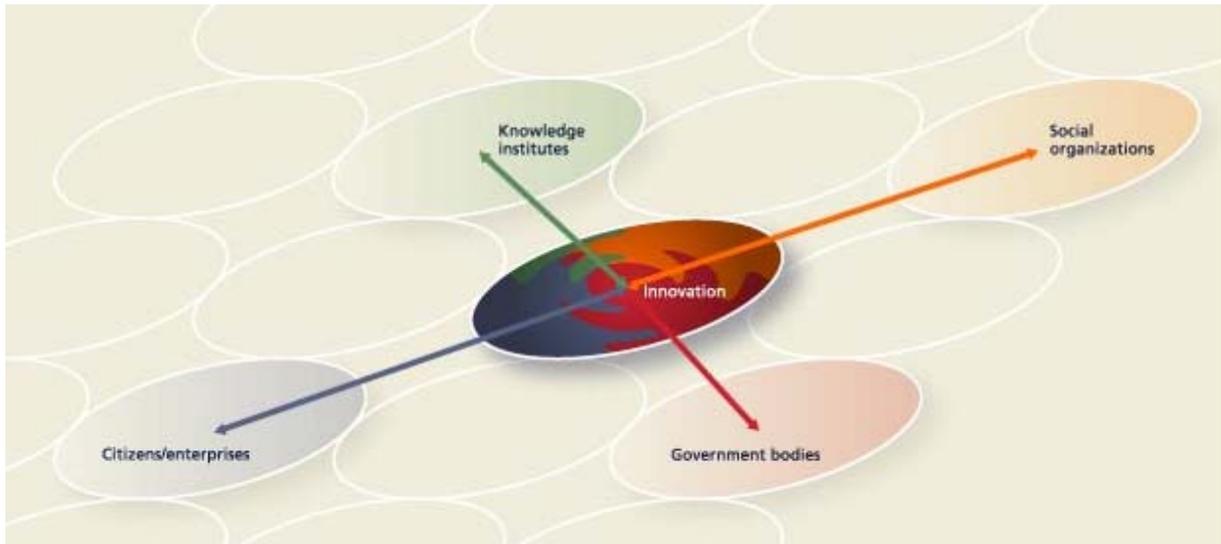


Figure 2. The KEGS model

In the KEGS model the government is just one of the parties. It is about governance (society-controlled) rather than government (government-controlled) (Teisman, 2000). Furthermore, all the parties are more or less equal. Naturally, this will complicate efforts to develop these types of processes. Although many efforts have been made to achieve innovation in various fields, all this energy frequently has produced gradual change only – where big steps ahead are needed.

In order to deal with this problem a methodology is being developed that can be seen as an operationalization of the KEGS model. Its aim is to encourage regional *stakeholders* (including government bodies) to jointly develop innovative plans, inspired by external researchers and other experts. Later, the plans may be carried out through pilot projects: *stakeholders* may then decide to become *shareholders*, making their own investments in necessary innovations. A first version of the method has been tested in the IJssel Valley case.

4. Case

Area Information



Map 1. IJssel Valley

The IJssel Valley (see Map 1) is an area of high unused potential (Van Muyden & Souwer, 2001). A variegated landscape, varied nature, small-scale and large-scale farms, many sites of – cultural – historic interest, beautiful small and old parishes, but also large and active centres brimming over with economic activity.

Yet, the IJssel Valley as such is not on the map. The area is fragmented when it comes to tourism, being more an appendix of other regions. It is not an administrative and policy-making unity, comprising seven municipalities, six tourist offices, three large public land owners and two chambers of commerce. What is lacking is a shared view of how it should be developed. Active organizations are focused on their own target groups and they show little, if any, area-specific and mutual adjustment beyond their individual target groups. Consequently, people are poorly prepared to face the challenges described in general terms in the previous section.

A broadly composed innovation group has emerged in the region whose main self-imposed duty is to make preparations for realizing a process of regional development throughout the area. Meetings with local actors were organized in four sub regions in order to develop innovative ideas. The workshops resulted in an overview of projects (innovations) with a short-term perspective (five years at most). Mainly, they concern incremental improvements (of what already exists) without taking into account the bottlenecks that may be facing the region in the future, for example increasing ageing in the primary sector, the necessity to make room for water storage and the growing need for places for recreational activities. Also, the suggested innovations are strongly sector-specific. The Innovation Network Rural Areas and Agricultural Systems, a PPP-network acting as a catalyst for achieving innovations in rural areas and agricultural systems, was therefore asked to think along about a follow-up which should lead to a coherent picture of opportunities and possibilities for a period of 10-25 years from now and which would focus more specifically on system innovations. This sequel was realized by using insights gained in the Habiforum-project on the Multi-Purpose Use of Space in the Southwest of the Netherlands and the Regional Dialogue of Northern Limburg (Project team Zee en Land, 2002).

Method applied

Thus far the method has two main parts: a workshop and a marketplace. The workshop is a session of several days, which is attended by both external specialists from all kinds of disciplines and by local experts. Together the parties constitute the KEGS model as mentioned in section 3. In the IJssel Valley case, there were three parallel groups of about 10 persons. A specific goal of the workshop was that each group developed a picture of the future of the IJssel Valley (some kind of 'motto'), with a number of more detailed elaborations for each future perspective. See Box A for an illustration. Note: the picture of the future is not a blueprint, but rather an inspirational vista that is not bound to borders (Rotmans & Loorbach, 2001).

What mottos put into words is a – desired – identity; from there, they create new perspectives, as the Workshop made clear. An example was the motto of 'The Vital Valley', taking contemporary values such as clean and sound water, room and quiet as a starting-point. Fresh concepts resulting from the motto included: Eau de Valley (mineral water), using the fact that the water quality in this region is high, parks displaying cultural history and natural agriculture and thus combining many rural amenities, and alternative ways to deal with industrial needs for water using the presence of the river IJssel. These concepts are really new

Box A. Representing perspectives by using mottos

In order to create those pictures of the future, including elaborations, the following obvious steps were taken:

- Brief lecture about developments relevant to the region, the main objective being to extend the 'horizon of thinking';
- Regional SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) based on personal knowledge and documents, which was also designed to make external experts theoretically familiar with the area;
- Well-prepared tour of the area of about half a day, designed to test the theoretical SWOT analysis;
- SWOT review based on impressions gained during the excursion;
- Defining the desired future perspective, based specifically on opportunities and strengths;
- Specifying and elaborating details of the selected picture of the future (projects or similar ideas);
- Preparing a presentation in the form of a market stall.

Many of these elements can also be found in the methodology of the Search Conference as it was developed by Emery & Purser (1996) and others.

The last item in the list above brings us to the second main element: the market. It is meant to bring a confrontation with *stakeholders*. In the case of the IJssel Valley some 60 people were invited, broadly representing the following categories: nature and landscape; non-agrarian economy and recreation; agriculture; government; and education. On the market *stakeholders* can virtually buy motto elaborations. Their buying behavior can be analyzed. This results not only in an overview of the amount of interest received by various elaborations, but also of how those interests are divided between parties. This input can then be used to encourage discussion. For example, some elaborations are purchased by almost everyone. The interesting question then is why the idea is still waiting to be implemented.

In the IJssel Valley a similar discussion was held immediately after the market was closed. During the plenary discussion between both Workshop workers and Market visitors, intensive reflection dealt with the buying behavior displayed and, more

particularly, the discussions that were held in the stalls. Its illustrating and stimulating effects were broadly perceived as a sound basis for joint further action. This positive experience was strengthened even further because the discussion was chaired by a prominent person from the region. He was a former minister who, for many years, also was the Queen's Commissioner (the highest regional government position) of the province holding the IJssel Valley.

The idea was to submit the results shortly after this happening to a broadly composed foundation, which would then be responsible for the implementation of project ideas. However, due to the foot-and-mouth disease crisis, which struck hard in the IJssel Valley, this transference was postponed indefinitely. Gradually, what also emerged was that the provincial authorities still refused to accept the IJssel Valley as an independent region, considering it as part of the Veluwe, a larger nature-reserve. The latest state of affairs is that the ideas developed will be presented to the Veluwe Reconstruction Committee, a committee which was established in view of the problems in intensive animal husbandry and which has substantial resources at its disposal. The Reconstruction project leader has been enthusiast about the ideas that were developed. The question remains, however, what will be done with the ideas in practice. Generally, other regions have demonstrated that Reconstruction Committees tend to be focused so much on showing results that they are quick to push aside risky ideas. Whether this will happen here too, remains to be seen.

5. Evaluation

The methodology of using a workshop and a marketplace is based on several assumptions:

- Long-term views of the future (visions) are indispensable to involve many different actors, thus creating a basis for system innovation;
- In order to achieve visions that are sufficiently creative and innovative it is important that, in addition to people who are active in the local region, people from outside having formal, scientific knowledge are involved as well;
- A large array of disciplines should be involved in order to develop an integral vision;
- Once a shared, although perhaps somewhat vague, picture of the desired future has been created, this may be the basis for identifying and implementing projects aimed at bringing that vision closer.

The first three assumptions have proved to hold quite true in the IJssel Valley case. The weak point is especially in the last assumption. At least two reasons can be mentioned for this:

- A difference in time horizon between actors;
- The organization of the system innovation process.

Difference in time horizon

Since goals pursued by system innovations tend to have long-term definitions they cannot be realized until that future point in time. For many parties, particularly businesses, however, it is not possible to make material *commitments* to those goals as their survival depends on having success in the near future (InnovatieNetwerk, 2000). This difference in time horizon is one of the issues (tension spans) that merit attention in system innovations. Other tension spans in system innovations include partner selection (openly accessible or focused on competitors) and the amount of consideration given to different interests (Verkaik, 2002). In developing projects the relevant actors may choose in favor of one of the extremes of tension spans, although it is much more productive to do justice to both values included in tension spans.

What is the best way to deal with the tension span of time? The best way is to use *back casting* to clarify the pathway extending between the desired pictures of a – faraway – future and the current situation. Once this pathway has become more or less clear, it is possible to define intermediate goals. In the process of achieving intermediate goals the future perspective may be made more specific, new intermediate goals may be defined, etc.

Using intermediate goals has three advantages:

- Energy is released. After all, it is more fun to work on something that will soon bring results rather than to make an effort for something that will not bear fruit until after a longer period of time;
- Parties having different time horizons are still given opportunities to make mutual agreements;
- It also provides a possibility to realize the desired future in changing coalitions. For example, company A contributes to realizing intermediate goal 1, whereas company B is the right partner for achieving intermediate goal 2.

Figure 3 is an attempt to summarize the steps of an ideal system innovation process.

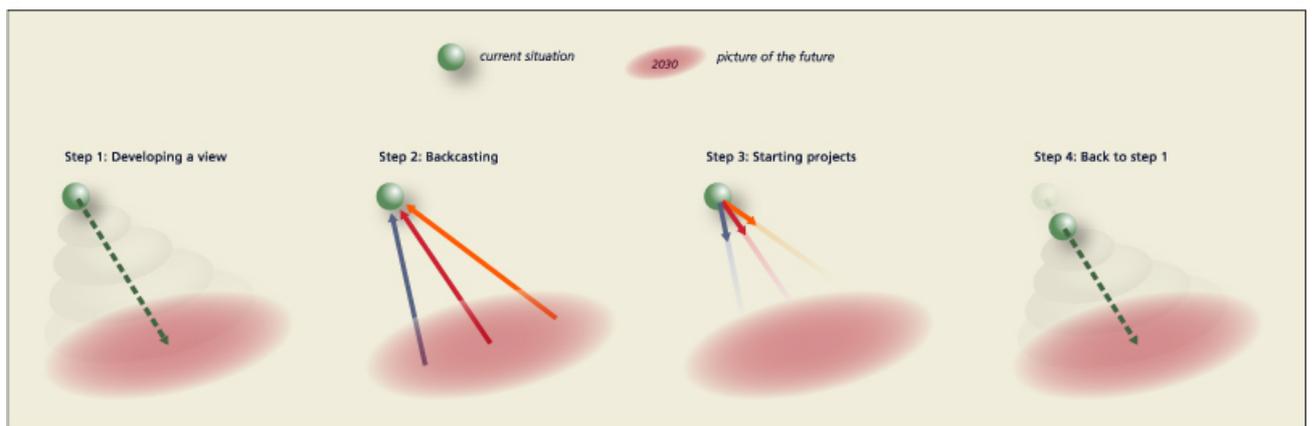


Figure 3. The steps of a system innovation process

Organization of the system innovation process

In a recent publication (2002) Rotmans, Dirven & Verkaik suggested that a change organization has three components:

- A transition arena of social actors;
- An independent support organization;
- Policy-making teams at the home bases of participating actors.

According to Rotmans and colleagues, a transition arena involves many actors: companies, knowledge institutes, social organizations, government bodies, citizens and intermediaries. They are the actors who will jointly go looking for transitions in an interactive and cyclic learning process. In that sense the workshop can be seen as the transition arena in the case of the IJssel Valley. Perhaps the temporary nature of this arena stood in the way of a successful outcome, although this does not need to have been the case at all.

The independent support organization (item 2 of Rotmans et al.) should facilitate and support transition arena functions, and inspire to find fresh innovation processes. Basically, this independent support organization was there. The process was started from a broadly composed group of initiators who had given an assignment *to themselves* (making preparations for a process of regional development throughout the area). The fact that the intention to transfer the initiative to a foundation failed to be realized is likely to be attributable to the third item mentioned by Rotmans et al., i.e. the policy-making teams at home base.

In their view, they are high-quality teams that are actively supported by top management. The teams should be given sufficient room for helping develop new cultures and procedures – and, consequently, the transition process. It implies that they should have sufficient means to support both the transition arena and the independent organization. In addition, they must be able to encourage that institutional and other obstacles obstructing transition are removed.

The latter element probably contains the main drawback of the method used in the IJssel Valley project. We failed to develop policy-making teams at home base. One of the results was that although the provincial authorities, represented by one of their officials, actively contributed to the workshop, they later retreated to the ‘old’ policy concepts which stated that the IJssel Valley should be seen as part of the Veluwe rather than as an independent unity. This may also easily explain why the provincial authorities feel pleased with the fact that the initiative is now placed with the Veluwe Reconstruction Committee. The obvious question arising is whether this will result in the innovation movement being hedged in by traditional institutions, thus depriving it of its zest.

6. Conclusions

What can the above case teach us?

- Pictures of a desired and 'faraway' future are important to make parties meet and to increase their enthusiasm.
- Possible transition pathways can be identified by 'back casting' from a desired future to current conditions.
- The pathways can then be made more specific by defining intermediate goals and by organizing projects to realize the intermediate goals.
- Workshops lasting several days are an adequate method to make people in a region think about the desired future as well as about projects to get there.
- It is important for those workshops to have a mixed group of participants: people from the region as well as external experts, various disciplines, etc.
- A marketplace lends itself well to broader discussions about workshop outcomes.
- An independent and facilitating organization is indispensable to organizing an innovation process.
- Innovation will not become reality if it fails to have strong and supportive teams at the home bases of participating actors. This really is an addition to our KEGS model.

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