

Future of Extension Services in Market Driven Societies:

European Experiences

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Abstract

The current trends regarding agricultural extension services in Europe are being explained against the background of the history of agricultural development since the Second World War, especially in The Netherlands. Changes in the organisational structure of extension can be understood if changing world views or rationalities are taken into consideration. The paper highlights three rationalities that have dominated the way of thinking of managers and policy makers in this period of history. The author argues that a fourth one is needed for coping with the challenges of tomorrow. In this 'ecological rationality' the focus is on connection and energy in human networks. Apart from a great variety of advisors with specialised technical know-how, future knowledge networks need experts and institutions that can perform the role of 'free actors' for doing whatever is necessary to keep networks healthy.

Orange fever, and the need for a new story

While writing this paper, the streets of Bern, Switzerland, are coloured orange by almost 100.000 Dutch football fans, in most extraordinary outfits, having a lot of fun together. The Swiss hosts can hardly believe what they see, but they love it. Something special is happening there and the energy is contagious. The Dutch national soccer player team has started successfully in the European championship, causing 'orange fever' throughout the country as well in the host cities where the games are being played.

How can we understand what is going on there? If we consider the principles of the market, with its producer – client relationships, its well understood self-interest and competition for maximising profit, its planning and control cycle with SMART formulated targets for getting value for money: do they explain the freedom these people feel to go beyond the usual? Does this economical theory account for the connectedness that fuels the energy they clearly feel? Something is missing in the market way of thinking.

People tell **stories** to each other about the way the world is functioning. There is no other way, because reality is always more complicated than what people ever can understand. Some **stories** become so powerful that they influence the way people act, making these storys self-fulfilling. To a certain extend, that is, because reality keeps on changing. If people stick too long to such a story, increasing tension will be felt between the world they wish to create and the world that appears to them: then reality refuses to obey any longer to the models that were supposed to keep it under control, usually in rather unpleasant ways. At this point it is time for a new story, paradigm in the terminology of Kuhn (1970), rationality according to Habermas (1981) or mental map in the words of Senge (1990). Or as Albert Einstein put it: "You cannot solve problems with the same way of thinking that caused those problems".

This paper describes three different rationalities that dominated the post war history of agricultural development in Europe. It shows with examples from the agricultural extension system in The Netherlands, how these rationalities worked well for a certain period of time, and failed to produce effective answers when conditions changed, making way for another rationality. The transition to the 'knowledge market' was a major one, including the privatisation of the government extension service and the shift from funding input to funding output of agricultural research. This transition was inevitable and necessary, as you will see. But it also led to a new generation of problems we did not have before.

The statement I will make is that it requires another way of thinking again to understand what additional principles should be added to those of the market, if we want to make progress towards sustainable and healthy development, mobilising all the forces in society that want to build a better world. I call this ‘the ecological rationality’, taking networks and societies as living organisms that can be sick or healthy.

Nowadays we live in a network society (Castells, 1996). At present, at least in The Netherlands, there is a revival of interest in the power of networks for bridging the gap that has grown between research, practitioners and other stakeholders. In the last few years I was involved in a largescale experiment with 120 networks of farmers in animal husbandry who came forward with initiatives for sustainable improvements in their sector. Researchers facilitated those networks, focussing on energy (enthusiasm) and connection. The results amazed many people, also at the Ministry of Agriculture that had funded the experiment. We learned that such networks need a ‘free actor’ who is capable of doing whatever appears to be necessary to keep the interaction healthy. Here we deviated from the usual management approach of well-defined targets and calculable results. I will explain how this approach fits into the ‘ecological perspective’, I just mentioned. My argument will be that in the most successful years of Dutch agriculture, the farmers availed of an entire army of such ‘free actors’, being the government extension officers in those days. The connections that made the system so strong got lost with the introduction of the knowledge market. The network approach in the ecological perspective is offering opportunities to restore that connecting function in a contemporary way.

The paper concludes with possible functions for extension in the near future.

Knowledge as the best way

The first story to discuss here is the ‘instrumental rationality’¹. The more we understand of how the world is functioning, the better we know the best way to progress. Knowledge is similar to the best way. Rational decisions are to be taken, based on *uncontested knowledge*, validated by scientific research.

Production increase for food security

After the second world war production increase was the first priority. The choice was made to create optimal conditions for average family farms to increase their production. Improvement of many small enterprises would be more effective than favouring few big ones. These conditions included: providing equipment from Marshall help and investment subsidies, guaranteed bottom prices for strategic farm products, and emphasis on knowledge. The government extension service became an important facility for teaching farmers new techniques.

Meanwhile, local organisation was recognised as a precondition for improvement. Farmers should reach agreement about the way to go because their active support for change was needed for modernising agriculture. *Community development* became the second branch of extension activities. The minister of agriculture delegated part of his power to the farmers leaders on the condition that they would create unity among the farmers (Frouws, 1994). In the 50ties many ‘Area Improvement Projects’ were implemented in which the agricultural extension workers were active along with advisors in home economics. **These projects included improvements in both the social and the physical infrastructure. In this period also the farmers cooperatives for input supply, processing, marketing and banking received strong impulses. They would play a crucial role in the decades that followed.**

Success and new problems

The policy was so successful that it caused new problems at the end of the 50ties. The national market for food products became saturated.

Productivity improvement for competition at the international market

A new choice was made: family farms with potential for growth should produce for the international market, and others had to be bought out. Farmers should give up mixed farming and choose a specialisation. The emphasis was on increase of productivity, reducing production costs, and increase of scale. The newly created European open market created many opportunities, and the successful Dutch policy

¹ After Habermas (1981) distinction between the instrumental, strategic and communicative rationality)

was extended to European scale. Government policy continued to focus on optimal conditions for farmers with potential to earn a decent income: provide knowledge (research, education, extension), guarantee bottom prices, protect the market, and improve the physical infrastructure, notably through land restructuring allowing for more efficient farming on larger plots of land.

For the extension service this change in policy had important consequences. Now farmers had to make choices: there was not one best way of farming anymore. They had to select by themselves what technology would fit them best, and for many it was better to stop farming at all. Agricultural extension got an additional task: to help farmers with their decision making process. Apart from technical knowledge this required communication skills. This was the time when extension education became a profession and Wageningen University professor Van den Ban defined *extension* as “assistance to decision making processes”. He stressed that the client is free to choose, and that extension can be effective as long as it proves to serve the interest of the farmer (Van den Ban 1970; Van den Ban and Hawkins 1996).

Extension as intermediate in the agricultural knowledge system

When specialisation increased, farmers formed study clubs the various sectors in which they exchanged results and experiences. The government extension workers actively supported these clubs. In the formal structure for research and extension the translation of research results to farmers was considered as a task too important to leave it to the researchers themselves. Therefore the extension service developed an intricate network with national intermediate services for every sector (e.g. dairy production) and discipline (e.g. housing techniques) located at the research stations. These units ensured the two-way exchange between researchers and farmers in order to speed up the innovation process in agriculture. The regional extension offices did not only provide services to farmers, but they also actively participated in networks with farmers representatives and local governments on policy matters.

Success and new problems

Again the policy was successful. Average productivity of Dutch farmers became the highest in the world, and the small and densely populated country reached the top three of the world largest exporters of agricultural products. New serious problems arose as well. Intensive production systems caused huge manure surpluses and pollution with pesticides. In addition, overproduction created butter-mountains and milk-lakes subsidised by European taxpayers money. The farmers organisations, that had become very powerful, in close collaboration with research, extension and policy makers in agriculture, managed to trivialise these problems when they came up in the 70ties, but the moment would come that they could not longer be ignored.

From promoting production to containing the damage

In The Netherlands that moment came in 1984. The European Community introduced production quota for milk and other products, and in the same year the Dutch government imposed the first restrictive rules for reducing pollution with manure. These events marked an abrupt change in policies from production increase to containing the damage, and from this moment interests of farmers and government were not the same anymore, at least not in the short run. A long series of environmental measures followed.

The instrumental rationality fails to produce answers

Scientific research had to be reoriented from stimulating growth to damage control, and was supposed to answer questions like what norms should be acceptable for levels of nitrate in the soil or residues in vegetables. But this appeared to be difficult. Proper knowledge was lacking, new research took too much time, and different interest groups mobilised their own scientists producing opposing answers. Uncontested knowledge could not be sufficiently supplied anymore as legitimate basis for action. This lack of knowledge was used as an argument for the farmers organisations to postpone painful policy measures such as reducing the number of livestock. In case of conflicting interests and complicated problems, it becomes hard to find uncontested knowledge. Today we see the same phenomenon in the global discussion on climate change.

Knowledge as a product

The second story is the ‘strategic rationality’. In this perspective the world is an arena. The dynamics in society are not being determined by a Grand Design, but by interests and struggle for power. In the neo-

liberal vision, based on this rationality, free forces challenge each other to find a division of tasks where every actor does what he can do best. *Knowledge is a product of value*. This value depends on the interests it serves, and is not equal to everyone. Knowledge can also be competitive advantage, and access to knowledge is an effective weapon in maintaining power at one side, or empowerment of the disadvantaged at the other.

This rationality gave relief in the strangulating relationship between farmers leaders and policy makers and responded much better to the situation as it had grown. Furthermore, ongoing specialisation among farmers gave rise to **private farm advisors** who were in a better position to provide measured and frequent advice than the generalist government extension workers with limited funds, and farmers were willing to pay for such services. The extension service was losing ground, also because extension agents had difficulties in serving two masters: the farmers and the government.

Privatisation of the extension service and the rise of the knowledge market

In 1990 the government extension service was reorganised. 700 staff formed the DLV², as independent agency for farm advice, partly funded by government and for another part by the farmers organisations. Another 500 staff remained under government in the IKC's (Information and Knowledge Centre). These services were supposed to maintain the connections between research, practice, policy makers and other stakeholders. During the reorganisation process, when the instrumental way of thinking was still dominant, this linkage function was considered to be too important to leave it to the market. Farmers were expected to pay for advice that would bring them profit, but not for maintaining the free flow of information in the knowledge system.

It turned out differently. DLV started to charge farmers for their services and reclaimed a market share where other private advisory companies had become quite successful as well. DLV bypassed the IKC's by establishing direct links with researchers. For its profile of being at the farmers side DLV kept distance from the IKC's as 'policy instrument'. At the other side, the policy makers at the Ministry of Agriculture claimed the subject matter specialists in the IKC's for policy support only, giving lower priority to the linkage function (Wielinga 2001). After a range of staff reductions and mergers, in 2005 the remainder of the IKC's was integrated in the Department for Knowledge of the Ministry of Agriculture, Nature and Food **Quality**. In the market way of thinking this linkage function would be picked up by the market if anyone thought it was important, if not, probably it was not so important after all.

Government redefined its role as defining conditions for clean production, instead of providing facilities for farmers. In the knowledge system government tried to become a client in the market by formulating targets for research and extension programmes and paying for output, partly for its own consumption of knowledge for policy development, and for the other part as substitute client for target groups in society for which such knowledge was supposed to be important although they would not be willing to pay for it.

Effectiveness and efficiency

A client wants value for money. Also knowledge had to be produced and transferred in an effective and efficient way. Research and extension programmes should be SMART³ formulated and executed along modern management principles. Meanwhile there were many providers of advisory services in a shrinking market, because the number of farmers was still steadily shrinking.

New problems

Although the knowledge market gave opportunity to much more specialised services, problems arose as well. In the competitive market, commercial advisory services would be inclined to go for the most profitable part of the market, leaving more difficult functions unattended. Especially tasks for connecting actors and stimulating collaboration were seen as complicated, and results of ones efforts were hard to measure. Output funding of research made researchers serve financiers instead of farmers and brought

² DLV: Dienst Landbouw Voorlichting [*Agricultural Extension Agency*], later on: De Landbouw Voorlichting [*The Agricultural Extension*]

³ SMART: Specific, Measurable, Acceptable, Realistic and Timebound

along much bureaucracy. Many people started to complain about the once so famous agricultural knowledge system: farmers had difficulties in finding assistance that went beyond the usual, farm advisors could not do anything extra anymore because then they would not reach their business targets, researchers complained about unproductive paperwork and policy makers blamed research for filling the shelves of their institutes with knowledge that was not being used in practice.

Limits of the strategic rationality

Meanwhile, other actors had entered the playing field, all putting claims on the rural space. Agriculture had to compete with nature conservists, recreation entrepreneurs, urban citizens wanting to live in the rural area, consumers claiming clean products and meat that was produced in an animal friendly way. While the rural space became an arena of interdependent actors, the strategic rationality did not contribute to find acceptable solutions for competing claims: every actor would look for knowledge that best serves his own interests. Naïve scientists who were still thinking in their instrumental way of uncontested expert knowledge, would frequently be abused as weapon in struggle about positions.

Accepted knowledge

The third story is the 'communicative rationality'. Here, the world is seen as a Global Village where people depend on each other for survival. If stakeholders depend on each other for a shared solution, and none of them is in the position to force others to follow, all of them have to accept the knowledge on which the solution is based. It helps to see knowledge as an individual property, rather than something objectively validated and written down in books or articles. Each individual has its knowledge, acquired by culture, education and experience. These different constructs of reality of people can converge through collective learning processes. Instead of transferring messages, such processes should take the knowledge of each individual seriously. Accepted knowledge emerges from interaction.

Participatory methods

This constructivist view of knowledge is the philosophical basis for participatory methods, interactive policy development and multi stakeholder approaches. It has its roots in development work in the 70ies of the last century, in movements for empowerment and democratisation. In the present time it has become actual again, facing the network society where hierarchical structures rapidly lose their power and many stakeholders need to find their way together without having competence over others. In this rationality *extension acts as facilitator* of multi actor learning processes. Such processes take place in programmes for area development, local leadership, networks and production chain improvement.

Weaknesses

There are several weaknesses that make policy makers and managers hesitant to count on participatory approaches. First, they require specialist skills that are not always available. Second, results are usually difficult to predict, and thus hard to account for. This does not fit well in the prevailing culture of measurable targets and performance indicators. Third, and probably the most important one, is the fact that such processes are easily obstructed by those who do not wish to cooperate. The legitimate ground for action this time is consensus. It requires voluntary contributions and trust to develop accepted knowledge. These conditions are not always met, for example if positions of power are unequal or effective obstruction strategies. But what is the alternative, if consensus cannot be reached, expert knowledge is not accepted, and power is not sufficient to impose necessary action?

Knowledge as responsive capacity

People, institutions or societies should be capable of finding effective responses to their changing environment. They should be able to perceive signals of imbalance, give meaning to it and mobilise forces for collective action. In this view knowledge is not only a construct of reality, it includes also the capacity to respond adequately, individually as well as collectively.

The world as a living organism

In the living nature ecosystems remain healthy as long as they are resilient. Living organisms are capable of perceiving signals, give meaning to it, and generate an adequate response. Through this 'cognitive cycle' they are connected to their environment. This is true for individuals as well as ecosystems. Living organisms are networks of connected parts that reproduce the organism, while the organism reproduces

the parts. An organism is healthy as long as all essential parts remain interconnected. If connections are broken, the organism gets sick and will eventually die, to make place for new life.

In the evolutionary process organisms developed an ever increasing task division and specialisation, with feedback mechanisms that grew along with the complexity. The human species developed language that increased its capacity to respond to changing environments enormously. In their ‘Santiago theory’ Maturana and Varela (1987) conclude that human systems are living entities. Knowledge should not be seen as something a person can possess and transfer to someone else by communication. Instead, communication is the coordinating mechanism for structural mutual coupling. Knowledge is what enables people to coordinate their behaviour together. They define knowledge as “effective action in the domain of existence”.

Healthy and sick networks

Networks of people behave like living organisms (Capra, 1996). They form complex structures which enable a division of tasks and specialisation, leading to benefits of scale as long as the network participants are interconnected. A network can be said to be healthy if there is a growing willingness on the part of the participants to contribute to the network, and to mutually attune their efforts. This becomes obvious from the participants sense of satisfaction and enthusiasm. The network becomes an identity participants want to be part of. Networks can be sick as well. Then participation takes more energy than it generates, and the willingness to contribute and attune decreases. The difference is connection: when essential connections are broken up, the network gets sick.

Evolution is not a smooth process: sometimes structures have to be broken down for creating space for new life. Every level of complexity develops its own mechanisms for keeping the system connected. I find it an inspiring thought that the human society can develop further into higher levels of complexity, as long as the connecting mechanisms will grow along. Meanwhile it is a breathtaking question if mankind will be in time to adjust these mechanisms for coordination in time to cope with the major threats of today: the unequal distribution of wealth and the ecological challenge. A change in dominant rationalities will be part of this adjustment.

Connection as legitimate ground for action

In this ‘ecological rationality’ as I call it after Röling and Maarleveld (1999), individual and collective learning processes are just as important as in the communicative rationality. The difference is that action is no longer made dependent on consensus. Interventions are legitimate if they contribute to connection between essential actors. Warm interventions work through communication: arguments, dialogue, negotiation, that creates awareness and understanding. Cold interventions work through taking position that force others to respond. This can involve the use of power. However, in this perspective power should not be used to win and impose order, but to force actors to connect with each other in a respectful way.

Experience with 120 networks of farmers in animal husbandry

What does this line of thinking mean for practical approaches in knowledge transfer, knowledge exchange and knowledge co-creation? It takes the ambition of people as a starting point, and it puts the focus on connections between them. Furthermore, it requires at least one ‘free actor’ who is in the position to do whatever is needed to create and maintain these connections.

In a large scale experiment (2004 – 2007) in The Netherlands this line of thinking appeared to be helpful in understanding the mechanics behind innovative networks, for working out practical tools and methods for network facilitators (Wielinga, Zaalmlink, et al 2008). Entrepreneurs were asked to come forward with initiatives that could contribute to sustainable development in their sector. They should present themselves as a network. Yearly some 50 networks were selected, based on the quality of the initiative and the enthusiasm they showed. Each network received a researcher for facilitating the search and learn process, and a limited budget for hiring additional expertise. These facilitators were given the freedom to do whatever appeared to be necessary for the process: stimulate interaction between the participants, connect them with experts, and also with representatives of other stakeholders or policy makers. In three years time, some 120 networks produced an impressive stream of ideas, publications, demonstrations, techniques and new initiatives. Facilitating on energy and connection calls for a different set of tools, as

compared to the usual planning and control cycle. Gradually these tools have been developed in order to provide language for reflection.

Free actors in retrospect

The ecological rationality sheds new light on history. The movement for community development in the 50ties can be explained as an early intervention to stimulate farmers in taking position in their own development. This position would become very strong later on. In the period 1958 – 1990 the government extension service developed an intricate network for connecting stakeholders within the agricultural sector: farmers, researchers, teachers and policy makers. Now we could say that especially extension agents performed their role as free actors very effectively in networks of stakeholders who shared a vision on the future and a strong feeling of identity. They were proud on what was achieved. In my opinion it is fair to say that the common vision on the best way to develop was not imposed by a political elite or indicated by science, but the result of intensive interaction and dialogue in the steering network of farmers leaders, leading scientists and politicians in response to farmers experiences.

The dark side of the success was that the agricultural sector had neglected its connections with the outside world. When agricultural growth had reached its limits, the alarm signals were ignored. The internal dialogue turned into a dangerous form of groupthink. The structure that had been very effective for the farming community became a blockage when society called for adjustment.

In the nineties, when the old structure was broken down and market relationships took over, the role of free actors to keep the system healthy was overlooked. The market puts emphasis on self interest and competition. For common interests and collaborative action, additional mechanisms are required to keep the system connected and healthy.

Excursion through Europe

So far, I illustrated the shifting rationalities with the history of the Dutch agricultural knowledge system. Now it is time to see to what extend this history can be recognised in other European countries. What can we expect to be the future of extension services in Europe? Within the scope of this paper I cannot be exhaustive. The overview is limited to examples. In former days two systems were dominant in Western Europe: government based and farmers organisation based extension systems. University based extension like the US land grant system did not play a significant role.

Government based extension systems

Government extension agencies existed in The Netherlands, England and Wales (ADAS), Scotland, Switzerland and some of the states in West Germany. ADAS was privatised in 1988 and served as an example for The Netherlands that followed in 1990. In the 80ies government services in the Western world were heavily criticized for being bureaucratic and inefficient. They should take large commercial enterprises as an example, reduce their size and go back to their core business: policy development. This was the prime reason for putting executive agencies at a distance from government. The Swiss LDL was one of the last to follow in 2006. The service now has become an association with funding from government, farmers organisations and income from commercial services.

Farmers organisation based extension systems

In France, most formerly West German states, Denmark and Italy, amongst others, extension services were, and still are, provided by farmers organisations. Just like in Switzerland nowadays, funding usually comes from general contributions from farmers, commercial services and government subsidies or programmes. Strong connections between extension and the farmers unions can become a blockage for the sector in adjusting to new challenges in society. This can for example at least partly explain the usually fierce opposition from French farmers against reforms imposed by the European Union.

The new EU member states

The breakdown of the communist system in 1989 implied a shock therapy for agriculture to adjust to the market driven society of the West. Top down technology transfer had to be transformed into modern advisory service for independent entrepreneurs. In most of the new member states farm advise has been taken over by private consultants. Many of the former state farms have turned into large scale private

enterprises, hiring their own advisors. In Poland, part of the extension service remained under government, and specialised on assistance to farmers in applications for EU subsidies. Hungary, the Czech Republic, and other countries have put up a certification system for private consultants who wish to be eligible for participation in programmes funded by the national government or the EU.

Cross compliance

In 2007 the EU implemented the 'Cross Compliance' regulation. This implies that farmers only can get EU subsidies if they respect the EU rules and regulations about environment, sustainable production, animal welfare etc. Therefore every member state should have an extension system where farmers can be informed about these rules.

Intermediate structures

In some countries, like the Czech Republic, government provides information centres as intermediate structure. The IKC's in the Netherlands, as mentioned before, were intended to play this role as well, before they were absorbed by the policy makers of the ministry of agriculture. Within the most important agricultural sectors in The Netherlands the Practical Training Centres still have a connecting role. These centres have farm facilities for practical training of students in 'green education' and adult practitioners.

The changing role of extension has been highlighted. In the last section of this paper some attention will be given to the changing role of governments in the European context. Conclusions for countries in Asia and the Pacific will be left open for discussion.

Conclusions for the future of extension services

Changing landscape

The 'knowledge landscape' for farmers in Europe is changing, and in this landscape agricultural extension as a concept is losing ground. Extension agencies have changed their names into information centres, advisory services or consultancy, and at Wageningen University in the Netherlands 'Extension Science' has become 'Communication and Innovation Studies'. Instead of technology transfer with its top-down character, we prefer to talk about knowledge networks, knowledge exchange and knowledge co-creation, expressing a more equal relationship between stakeholders. The old idea that knowledge has to be generated by research and transferred to users does not fit into our present reality.

Also the position of agriculture is changing. Instead of being a separate field of economic and scientific interest, agriculture has become embedded in the wider fields of food quality and quality of the rural space, including sustainability. Agricultural Universities change their name into "University of Life Sciences" (e.g. Norway, Czech Republic, Estonia, Poland, Denmark, The Netherlands). Where in the past the farming community dominated the rural area, now many more players have entered the playing field, all putting their claims on the rural space.

These changes have influenced the communication lines between farmers, research and other stakeholders quite dramatically. They also had profound consequences for the role of governments, or, more specifically, the role of departments of agriculture. From facilitating farmers to grow, the focus shifted to containing the damage and more recently to serving the consumers with safe food and an attractive landscape.

The third major trend has been given ample attention in this paper: the introduction of market relationships between farmers, knowledge workers (advisors, researchers, etc.) and other stakeholders. Once there was a time when extension services were facilities free of charge for farmers, and research was publicly funded for leading the way to a modern society. These times are over. Knowledge has got a price, as a product at the knowledge market.

Connecting functions in the knowledge system in the near future

Instead of the word 'extension' it is probably better to speak of the 'connecting functions' in the knowledge system, as complementary to research and training. I distinguish at least three large categories.

[1] *Commercial advice.* There are clients willing to pay for adequate advice from specialised consultants. These clients can be highly specialised and export oriented farming enterprises or extensive farmers combining production with nature management, recreational services or care for disabled persons doing healthy farm work. Each of these entrepreneurs can have a variety of questions, about equipment, investments, strategic reorientation, taxes, subsidies and so on, each requiring different experts. This is the area where the market does its work. It is important to mention here that access to information on internet has considerable impact on the character of face-to-face contacts in advisory work.

[2] *Facilitating search and learn processes within a branch of activities.* In this category, networks of entrepreneurs improve their operations by learning from each other and connecting to expertise from e.g. research. Most networks that were assisted in the experiment as mentioned before belong to this group. Centres for information, practical training and applied research are in a good position to facilitate such networks, that feed the quality of their operations in return. They could take the role of the 'free actor'. Such activities should, at least partly, be funded collectively.

[3] *Mediation in multi stakeholder processes.* Where solutions have to be found for competing claims of multiple stakeholders, mediation is needed. In many regions throughout Europe such cases can be found, and it can only be expected to occur more frequently. For this connecting function subject matter knowledge is less important than in the first two categories.

For governments, investing in the last two categories of functions is of growing importance. The idea that realistic targets for future development can be determined by government and supported by scientific research originates from the instrumental rationality, which has lost its validity in a society where national and international forces compete for positions and developments are hard to predict. Instead, actors in society must be given room for developing initiatives in connection to each other. They should know the borders of their playing field and the rules of the game: that is the task of government. Furthermore governments should prevent monopolies and exclusion of groups, since this disturbs connections. For facilitating the game, the free actor approach could be an interesting option.

Epilogue

The orange fever can be understood from an ecological perspective. The feeling of connectedness generates energy. The national team had become a healthy network with trust and creativity, and this had a remarkable impact on the fans. While finishing this text, the orange dream of winning the European soccer championship has been shattered by the Russian national team with a Dutch coach: Guus Hiddink, who once also was successful with Koreans. His secret: instead of fixed targets for every player, he gave them freedom for creativity and fun, within clear borders. This had also become the policy of the coach of the Dutch national team that resulted in three attractive and successful matches. But Hiddink **with his Russians were** even more effective. Congratulations.

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About the author

Eelke Wielinga is expert in extension science, knowledge systems and network dynamics. He worked in development projects in Bénin and The Philippines, and as officer for extension policies at the Dutch Ministry of Agriculture. In the end of the 80ies he coordinated international cooperation for the government extension service and witnessed its privatisation process. In the 90ies the department for Science and Knowledge Dissemination he worked for made the shift towards the knowledge market. In the conviction that something essential from the system that had been so successful in the past was being overlooked, he started a study on the changing role of government in the Dutch agricultural knowledge system. This study: "Networks as Living Tissue" was awarded as PhD thesis in 2001. At present, Wielinga works part time as senior researcher for Wageningen University and Research on projects related to networks and knowledge development, and he has his own consultancy firm as well: LINK Consult.