

AgroEcological Transitions

Changes and Breakthroughs in the Making

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Role of NGOs in system innovation towards animal friendly pork production in the Netherlands

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We do not intend to blame but to awaken the consumer.
Campaign leader of activist NGO

Abstract

This chapter analyses the dynamics between NGOs, researchers and sector organisations in system innovation towards animal friendly pork production in the Netherlands in the period 2005-2012. The findings are based on content analysis of 262 national newspaper articles in which a moderate NGO and an activist NGO addressed pork production topics. The content analysis shows that the two NGOs focused their attention on different issues and targeted different actors in the value chain. The activist NGO focused on campaigning against abuses in slaughterhouses and transport of livestock and against castration of pigs and mainly addressed consumers. Furthermore, they developed a consumer information system on animal welfare and environmental impact of various types of meat. The moderate NGO focused on developing a better housing system and an intermediate market segment for animal friendly pork. For that purpose they cooperated with researchers, pig farmers union, slaughterhouses and retail companies. In addition, the moderate NGO mainly addressed farmers in the articles. Despite these differences, the two NGOs supported each other in achieving a more animal-friendly pork production and consumption. While the activist NGO raised normative pressure on the current production and consumption system, the moderate NGO engaged in partnerships with the pork sector to experiment with alternatives. The study reveals the relevance of catching trends and incidents at landscape level, to strengthen pressure on the regime, in addition to multi-actor arrangements at niche and regime level.

Keywords: System innovation, animal welfare, pork production, NGOs, consumers

1 Introduction

NGOs can play an important role in system innovation processes because they can, among others, mobilise normative pressure to trigger regime change (Elzen et al., 2011; Geels and Schot, 2007). This chapter studies the dynamics between NGOs, research and sector organisations in innovation processes that aim to address sustainability issues, to get a better understanding of the role of NGOs in system innovation processes.

The subject of the study is the case of animal welfare in pork production in the Netherlands in the period 2005-2012. That period saw many campaigns, activities and efforts of various actors to address and reduce animal suffering in pork production. The selected period followed after several livestock crises caused by animal disease outbreaks in 1997 (classical swine fever), 2001 (foot-and-mouth disease) and in 2003 (avian influenza). In September 2003, the Minister of Agriculture started a fundamental debate on the

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future of intensive livestock industry (Veerman, 2003). He managed to get all value chain partners, including consumers, engaged in this debate. Following this debate many campaigns, activities and efforts took place in the pork sector. The chosen period of analysis ends with the introduction of a new intermediate animal welfare label on the pork market.

Our results show that two NGOs played a central role in triggering a system innovation in the pork sector and they both used different types of means and discourse for their quest to improve animal welfare (Vullings, 2009). One NGO focused on criticising the pork production chain while the other NGO sought partnerships with the pork sector to improve current conditions. The different roles that NGOs can play to further sustainable development has also been described by Elkington (SustainAbility, 1996). He distinguishes different types of NGOs that either focus on disrupting the status quo through confrontation (i.e. 'shark' NGOs) or NGOs that seek constructive collaboration with business, government and other stakeholders in order to change the status quo (i.e. 'dolphin' NGOs). In this chapter we use this distinction and refer to NGOs as either activist NGOs (i.e. shark NGOs) or moderate NGOs (i.e. dolphin NGOs). The objective of this study is to get a better understanding of the roles of and relation between such activist and moderate NGOs, in interaction with government, research and industry (primary producers, and other value chain partners), in system innovation towards animal friendlier pork production in the Netherlands.

2 The role of NGOs in system innovation processes

In order to put the NGO interventions into an innovation context, the multi-level perspective has been taken as a concept to delineate NGO activities and their effects (Figure 1) (Geels, 2002; Geels and Schot, 2007). The multi-level perspective makes a distinction between three levels (macro, meso and micro) that interplay during system innovation processes. The socio-technical landscape (macro) refers to the overall context of the regime and niches and contains aspects such as social values, political beliefs and economic or environmental circumstances. The socio-technical regime (meso) represents the established sector involving practices with shared routines, which are formalised through institutional rules or embedded as norms. Niche-innovations (micro) are the level at which alternatives for the status quo are developed. The multilevel perspective illustrates that landscape-, regime- and niche-developments influence each other. For example, *'changes at the landscape level create pressure on the regime and destabilisation of the regime creates windows of opportunity for niche-innovations'* (Geels and Schot, 2007, p. 400). So, developments at landscape, regime and niche level may eventually amount to a fundamental change within the structure of the regime (i.e. system innovation).

Although NGOs are not depicted in the above representation of the multi-level perspective several system innovation scholars do address the issue of NGOs in system innovation processes (Figure 1). Some studies highlight that NGOs play an important role in creating normative pressure to trigger regime change (Elzen et al., 2011; Geels and Schot, 2007). When we relate the role to creating normative pressure to the multilevel perspective we place such activities at the border between landscape and regime level. Geels and Schot (2007) argue that these outside pressures need to be strong and prolonged in order to achieve regime orientation. Elzen et al. (2011) note that NGOs in the pork sector raised attention to a variety of issues and that this considerably weakened their normative pressure. This description of NGOs fits the description of the activist NGOs as mentioned in the introduction of this chapter.

Other scholars, in the field of sustainable development, describe the trend of partnerships between NGOs and industry to collectively work on sustainable development (Bitzer and Glasbergen, 2015; Harangozó and Zilahy, 2015). Such a partnership emerges and operates at the niche level or at the boundary between the niche and the regime level. Furthermore, this description of NGOs fits the description of the moderate NGOs as mentioned in the introduction of this chapter.

Increasing structuration
of activities in local practices

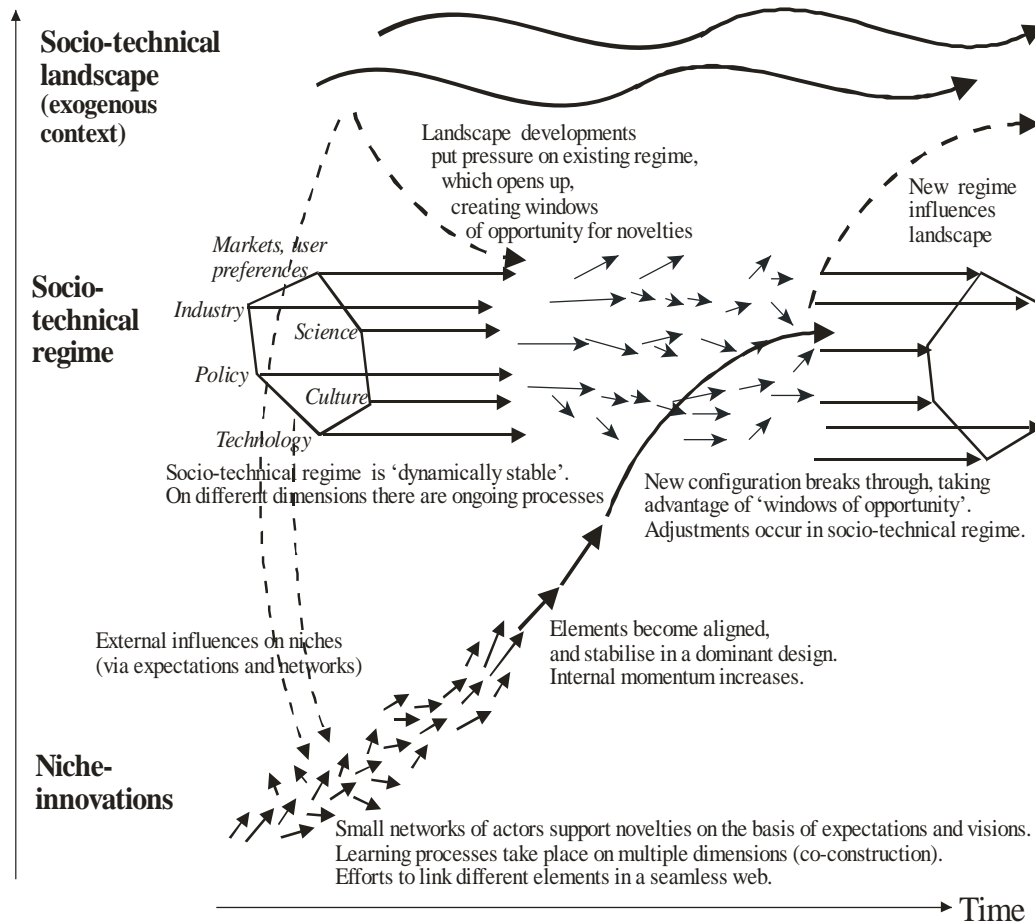


Figure 1: Multi-level perspective on transitions (adapted from Geels, 2002, p. 1263 (Geels and Schot 2007, p.401).

When we relate the descriptions of the roles of NGOs to the multi-level perspective, we expect that activist and moderate NGOs each play their own role in system innovation processes in which activist NGOs target their intervention at catching landscape developments that pressure regimes while moderate NGOs focus attention on developing alternatives in niches. In this chapter, we explore if activist and moderate NGOs in the case of the pork sector concentrate their activities on either the boundary landscape-regime or niche-regime level. To answer this question, we studied newspaper articles on the topic of NGOs and the pork sector in the period of 2005-2012 and question:

- Which issues were raised by activist and moderate NGOs?
- Which links of the production chain were addressed by activist and moderate NGOs?
- How did activist and moderate NGOs relate to each other in achieving animal friendly pork production in the Netherlands?

3 Content analysis

The contents of two sets of articles, showing the news coverage of an activist NGO and a moderate NGO in a selection of national newspapers, were analysed and compared. The next sections shortly describe the methodology. First the selection of newspapers and NGOs is explained, further data collection and analysis is explained and after that the contents of the two datasets are described and compared.

3.1 Selection of newspapers and NGOs

The search machine LexisNexis (<http://academic.lexisnexis.nl>) has been used to discern which national newspapers, moderate NGOs and activist NGOs were most present (expressed in frequency of articles) in the public debate on animal welfare of pigs in the Netherlands. Table 1 shows the results.

NGO	Lexis Nexis	Boerderij	Trouw	Volkskrant	NRC	Alg. Dagblad	Parool	Fin. Dagblad	Other
Animal Protection Society	202	75	30	29	12	8	7	9	32
Pigs in Distress	170	58	22	19	17	13	14	2	25
Awake Animal	133	41	19	26	7	6	4	2	28
Friends of the Earth	125	31	17	19	9	4	4	7	34

Table 1: Numbers of articles on animal welfare of pigs in Dutch national newspapers in 2005-2012, referring to specified NGOs. The highlighted cells mark the national newspapers, the NGOs and the resulting numbers of articles that were selected for further analysis.

The newspapers with the highest numbers of articles on the debate on animal welfare of pigs were Boerderij Vandaag, Trouw, Volkskrant and NRC. Boerderij Vandaag is an agricultural daily. The others are general newspapers. The agricultural daily was deliberately included in the selection, in order to cover the agricultural vision on the debate. The NGOs with the highest numbers of references in the debate were Animal Protection Society and Pigs in Distress. The Animal Protection Society ('Dierenbescherming') is known as a moderate NGO. They are inclined to improve animal welfare in cooperation with the livestock industry. Pigs in Distress ('Varkens in Nood'), Awake Animal ('Wakker Dier') and Friends of the Earth ('Milieudefensie') are known as activist NGOs. They are inclined to blame the livestock industry for animal suffering. The highlighted NGOs and newspapers in table 1 have been selected for further analysis. The highlighted cells contain 262 articles, of which 133 from the agricultural daily and 129 from the general newspapers.

3.2 Analysis of newspaper articles

With LexisNexis Academic the 262 articles have been retrieved and printed in full text. The reason for analysing printed articles has been to get as close as possible to the contents of the articles. Two sets of articles have emerged from the retrieval:

1. 146 articles mentioning Animal Protection Society
2. 116 articles mentioning Pigs in Distress

The overlap between the two sets of articles was small: merely 30 of the 262 articles mention both NGOs. Overlapping articles are included in the analyses of both the moderate and the activist NGO.

After printing, the contents of each article were analysed, according to the core questions of content analysis: who says what, to whom, why, to what extent and with what effect? (Lasswell, 1948). By doing so the actors (the 'who' question) and subjects (the 'what' question) have been identified. Next the reasons (the 'why' question) and targets (the 'to what extent' question) were recorded. The results were gathered in Excel files: one for the Animal Protection Society and one for Pigs in Distress. For each article, bibliographical (date, newspaper, editor, title and number of words) and content data have been recorded. When an article contained various actors and/or subjects, then actors and/or issues were summarised separately in the Excel file. On average each article resulted in three references.

Bibliographical data						
dd	mm	yyyy	Newspaper	Editor	Title of article	Words
30	11	2007	NRC Handelsblad	Hans van der Lugt	End to castration harm of piglets	561
30	11	2007	NRC Handelsblad	Hans van der Lugt	End to castration harm of piglets	561
30	11	2007	NRC Handelsblad	Hans van der Lugt	End to castration harm of piglets	561
Content data						
Actor	Organisation	Subject	Reason	Target		
Annechien ten Have	Farmers' Union	deal on castration	additional costs	paid by consumer		
Theo Roos	Retailer Umbrella	non-castration 2009	more animal welfare	satisfied consumer		
Frank Dales	Animal Prot. Society	spur Animal Prot. Soc.	animal friendly prod.	free range, groups		

Table 2: Example of bibliographical and content data from the content analysis of newspaper articles on pig welfare.

An example is given in Table 2 (in the original spreadsheet bibliographical data and content data were placed next to each other). In this article, dated 30 November 2007, three organisations reflect on their deal with respect to castration under anaesthesia. The farmers' union, the retailer umbrella organisation and the Animal Protection Society each have their own perspective (subject, reason, target) on that deal. The subject is castration of pigs. The content data (especially the subjects) show that the Animal Protection Society struck a deal with retailers and pig farmers. The targets show that the retailers felt the pressure of the consumers and that the pig farmers tried to pass on the costs of castration to the consumers. The example shows that the Animal Protection Society addressed the retailers and the pig farmers (the 'to whom' question). The effects of the deal were progress in animal friendly production, satisfied consumers and farmers being paid for the costs of castration (the 'with what effect' question). This example shows how the core questions of content analysis come together in three references and how the references together provide a multi-actor picture of the event described.

After completing the basic work of summarising individual articles in one or more references, the animal welfare issue at hand in each reference has been identified and tagged to the reference. This has resulted in 8-10 animal welfare issues for each of the NGOs. Table 3 shows how subjects from Table 2 were clustered in animal welfare issues. The table shows a few examples of issues observed and the way in which they were expressed in the newspaper articles.

Issue	Subject expressions	Issue	Subject expressions
Housing system	animal friendly housing creative toys for pigs pigs in larger groups better living conditions pigs in Comfort Class stable	Meat marker	meat marker creates dilemmas meat marker informs consumer environmental impact of meat truth behind bar codes meat marker scientifically sound
Interm. segment	Better Life label value added for consumers closer relation with citizens cost compensation for farmers cooperation in value chain	Anaesthesia	inspection on anaesthesia fails CO ₂ anaesthesia during slaughter CO ₂ methods unacceptable stress during anaesthesia CO ₂ meets regulations
Meat quality	more attention for taste good taste of Livar pigs more intramuscular fat increasing final pH of meat consumer wants healthy food	Transportation	abuses in animal transport secret report Food Inspection compliance with regulations animal transport is in order restrictions on animal transport
Castration	society against castration castration under anaesthesia conversion to non-castration objections immunocastration European ban on castration	Animal suffering	inconveniences of animals images of burned animals abuses in pig production illegal practices on pig farms suffering of circus animals

Table 3: Subject expressions representing the content of a selection of issues raised by NGOs

The subjects express both what the NGOs aim(ed) to achieve as well as the problem they aim(ed) to tackle. The results of the content analysis are presented in the next sections.

3.3 Issues of Animal Protection Society

In this section, the issues raised in the newspaper articles mentioning the Animal Protection Society are presented. First a series of interrelated issues is presented, showing the course of the debate on housing systems. Subsequently, a series of separate issues is described. In both cases the issues are ranked according to sequence in time. Table 4 shows the interrelated issues. The core periods of the various issues (concentrations of references) are highlighted in the table.

Issue	2005	2006	2007	2008	2009	2010	2011	2012	Total
Welfare standards	3	4	0	0	0	3	1	0	11
Welfare criteria	1	4	0	0	0	1	0	2	8
Housing system	5	11	36	1	5	5	1	3	67
Interm. segment	0	0	3	5	7	23	13	11	62
Meat quality/taste	0	1	2	0	0	2	3	7	15
Total	9	20	41	6	12	34	18	23	163

Table 4: Number of references in newspaper articles on animal welfare of pigs (interrelated issues) mentioning Animal Protection Society, classified into issues and years. The highlighted cells mark the core periods of the various issues.

In the years 2005-2012 the Animal Protection Society put much effort in the development of an animal-friendly housing system and later in the development of an intermediate animal welfare label for a segment in the market between conventional and organic pork. The process started with an exchange of trends, opinions and responsibilities with regard to welfare standards between a retail company, the Pig Farmers Union and social scientists in 2005/2006. In reaction to this diverging exchange, the Animal Protection Society together with the Pig Farmers' Union decided to define the basic needs of pigs and translate them into welfare criteria. The main work was done in 2006 by researchers of Wageningen UR.

Starting from these welfare criteria, researchers of Wageningen UR and representatives of both the Pig Farmers' Union and the Animal Protection Society (de Greef *et al.*, 2011) designed an animal-friendly housing system (Comfort Class stable). In 2006/2007 the technical results of the Comfort Class stable received broad attention in the news, especially in the agricultural newspaper. However, the researchers and the representatives of the Pig Farmers' Union and the Animal Protection Society were reluctant to talk about the economic results. In 2009/2010 the researchers admitted that the costs were 10-15% higher than in the conventional system. At the same time pig farmers told in newspaper articles that they needed compensation for the costs of distraction material, straw and additional labour.

The higher costs and the invisibility of animal friendly produced pork in the market were reason for the Animal Protection Society (Sligter, 2010) to develop the intermediate animal welfare label (Better Life label). The Better Life label was developed (2008/2009) and introduced (2010/2011) in close cooperation with slaughterhouses and supermarket chains. Through the introduction of the Better Life label pig farmers with animal-friendly production were able to get a price premium for their investments in animal welfare. The development of the intermediate animal welfare label was followed by requests of supermarket chains for improvement of meat quality/taste.

Apart from working on improvement of housing systems and development of market segments, the Animal Protection Society was also involved in a number of separate issues. These issues are specified in Table 5. Again, the core periods of the issues (concentrations of references) are highlighted in the table.

Issue	2005	2006	2007	2008	2009	2010	2011	2012	Total
Castration of pigs	1	8	7	3	7	4	0	0	30
High-rise pig farms	0	8	1	0	1	1	0	0	11
Mega-production	0	0	3	3	0	2	2	6	16
Total	1	16	11	6	8	7	2	6	57

Table 5: Number of references in newspaper articles on animal welfare of pigs (separate issues) mentioning Animal Protection Society, classified into issues and years. The highlighted cells mark the core periods of the issues.

The Animal Protection Society rejected routine castration of male piglets and industrial production in high-rise pig farms and mega-farms. In 2006 they explained to agree with castration under anaesthesia (den Blijker, 2006^c). After Pigs in Distress revealed that castration was twenty times more stressful than castration itself, the animal Protection Society stroke a deal on castration with the supermarkets and the pig farmers to stop selling meat of castrated pigs (den Blijker, 2010). In 2006 they -together with Friends of the Earth- entered protests against an 'agro-park' for pork production in the harbour of Amsterdam and explained their objections in newspaper articles (den Blijker, 2006^a and den Blijker, 2006^b). In 2012 they refused to extend a Better Life star to a mega-farm with animal friendly production, because of the size of the farm (Moesker, 2012).

3.4 Issues of Pigs in Distress

In this section, the issues raised in the newspaper articles mentioning Pigs in Distress are presented. First the issues targeting consumers and retailers are presented and then the issues targeting the pork production chain. Table 6 shows the issues targeting consumers and retailers. The core periods of the various issues (concentrations of references) are highlighted in the table.

Issue	2005	2006	2007	2008	2009	2010	2011	2012	Total
Organic	0	0	4	1	0	0	0	0	5
Less meat	1	0	5	0	8	1	0	0	15
Meat prices	0	1	6	7	3	6	3	0	26
Meat marker	0	0	0	0	31	4	0	26	61
Interm. segment	0	0	0	0	0	11	7	2	20
Total	1	1	15	8	42	22	10	28	127

Table 6: Number of references in newspaper articles on animal welfare of pigs mentioning Pigs in Distress, targeting consumers and retailers, classified into issues and years. The highlighted cells mark the core periods of the issues.

In 2007 and 2009 culinary journalists, together with Pigs in Distress, argued in favour of buying organic meat and buying less meat. They argued that animal welfare in organic production was much better than in regular production, and later that high levels of meat consumption were harmful for human health and for the environment. In addition, Pigs in Distress explained to citizens and consumers that low meat prices constrain farmers' investments in animal welfare. Subsequently the Party for the Animals asked the government to ban the import of cheap meat from abroad and to introduce standards for animal welfare in pork production. In addition, in campaigns they blamed supermarket chains for unethical behaviour by offering regular meat at record low prices, resulting in less demand for organic meat and less attention for animal welfare. Their statements were supported by experiences of pig farmers and findings of researchers and experts. Supermarket chains replied that the buying behaviour of the consumers forced them to decrease the prices.

In the second part of the period Pigs in Distress introduced the so-called 'Meat Marker'. The 'Meat Marker' shows the consumer how different types of meat and protein products score in terms of animal welfare and environmental impact. The first version (2009) was a small card showing the scores of 18 types of meat on animal welfare and environmental impact. The second version (2012) was an app for iPhones enabling consumers to scan the barcodes of 16,000 meat products in supermarket shelves and to see the animal welfare quality and the environmental impact of these products (Lugt, 2009; Janssen, 2009; Postma, 2012; Moesker 2012). Moreover, Pigs in Distress supported the activities of the Animal Protection Society with regard to the intermediate segment in the market. They challenged supermarket chains to start selling 'Better Life meat' and thus reduce animal suffering and get a better reputation (Moesker, 2011).

Apart from challenging consumers and retailers to make a shift to animal-friendly produced meat, Pigs in Distress also denounced various abuses in the pork production chain. Table 7 shows the issues targeting pig farmers, livestock transporters and slaughterhouses. The core periods of the various issues (concentrations of references) are highlighted in the table.

Issue	2005	2006	2007	2008	2009	2010	2011	2012	Total
Housing	0	1	6	1	1	0	0	1	10
Anaesthesia	0	14	0	2	19	0	0	0	35
Transportation	0	1	12	5	10	1	0	1	30
Castration	0	0	0	6	11	11	0	4	32
Animal suffering	0	3	0	3	5	1	1	11	24
Total	0	19	18	17	46	13	1	17	131

Table 7: Number of references in newspaper articles on animal welfare of pigs mentioning Pigs in Distress, targeting the pork production chain, classified into issues and years. The highlighted cells mark the core periods of the issues.

The main issues (in terms of number of references) of Pigs in Distress targeting the pork production chain in 2005-2012 were anaesthesia in slaughterhouses, transportation of livestock, castration of piglets and animal suffering. They raised the issue of anaesthesia in slaughterhouses for the first time during the campaign for elections of the parliament in 2006. The issue then focused on the best method for anaesthesia (CO₂ or electric shock) and inspection by the Food Safety Authority. The debate was stirred up by researchers of Wageningen UR and representatives of the meat industry. In 2009, the issue was raised for the second time. The attention then went to animal suffering caused by CO₂. Pigs in Distress showed videos with shocking scenes of anaesthesia with CO₂ in slaughterhouses. The Minister of Agriculture explained in parliament that the slaughterhouses met the EU regulations.

Transportation of livestock was first raised in 2007. Focus was on violation of the regulations by transport companies. Pigs in Distress showed shocking scenes (blood on trucks) of livestock transports. Politicians asked for better inspection procedures. In 2009 the issue returned, again because of transport companies breaking the regulations. Pigs in Distress disclosed a secret report of the Food Inspection Authority on violations of transport regulations and intimidation of inspectors. Transport companies replied that most animal transports were in compliance with the regulations. Politicians again asked for better inspection procedures.

In 2008 castration of piglets became an issue for Pigs in Distress. They took out a summons against two supermarket chains in order to stop the sales of meat of castrated pigs. The retailers replied that castration was to be stopped in 2015 and that, in the meantime, castrations would take place under anaesthesia (ANP, 2008). In 2009 Pigs in Distress revealed research results showing that anaesthesia was twenty times more stressful than castration itself (den Blijker, 2009). This finding fuelled the discussion on castration. In this environment the Animal Protection Society succeeded to strike a deal (January 2010) with the supermarkets and the pig farmers to stop selling meat of castrated pigs as of January 2011 (den Blijker, 2010).

In 2007, the national government issued a policy position on animal welfare in kept animals, including a report on discomfort issues in livestock husbandry (Leenstra, 2007). The resulting debate in parliament included criticism (and a plea for a ban) on circus animals and attention for living conditions of pets. In 2012 Pigs in Distress continued the debate on health problems of pigs (pneumonia) and measures to avoid tail biting (tail docking). A new issue was started in 2012 with the observation that animals in the meat industry are considered and treated as ‘things’ instead of being living creatures.

3.5 Comparison of involvement in issues

The previous sections showed in which issues Animal Protection Society (moderate NGO) and Pigs in Distress (activist NGO) were involved. The ‘baskets of issues’ of the two NGOs are shown in Table 8. The issues were classified into three links in the value chain: consumer/citizen, processing/retail and primary producers. Within each cell the issues were ranked according to the number of references in the content analysis. The overlap in issues between the two NGOs is highlighted in grey.

Addressees of NGO activities	Animal Protection Society (moderate NGO)	Pigs in Distress (activist NGO)
Consumer/citizen		meat marker (61) meat prices (26) animal suffering (24) less meat (15) organic (5)
Processing/retail	intermediate segment (62) meat quality/taste (15)	anaesthesia (35) castration of pigs (32) transportation (30) intermediate segment (20)
Primary producer	housing system (67) castration of pigs (30) mega-production (16) high-rise pig farms (11) welfare standards (11) welfare criteria (8)	housing system (10)

Table 8: Comparison of involvement of moderate NGO and activist NGO in issues on welfare of pigs described in national newspapers in 2005-2012. The highlighted cells mark the overlap in issues between the two NGOs.

There is little overlap in the issues on welfare of pigs raised by the moderate and the activist NGO. The ‘baskets of issues’ only had ‘housing system’, ‘castration of pigs’ and ‘intermediate segment’ in common. The moderate Animal Protection Society had the lead in developing an alternative housing system and intermediate segment and Pigs in Distress joined them in these issues. The activist Pigs in Distress had the lead in putting the castration of pigs on the public agenda (with a focus on retailers), after which the Animal Protection Society struck a deal on this issue with retailers and primary producers.

Also, the overlap in parties addressed by the moderate and the activist NGOs was small. The moderate Animal Protection Society was mainly involved in issues targeting primary producers (e.g. housing system) and processing/retail (e.g. intermediate segment). The activist Pigs in Distress was mainly involved in issues targeting consumers/citizens (e.g. meat marker and meat prices) and processing/retail (e.g. anaesthesia and transportation). This means that the two NGOs focused on different levels in the value chain.

Furthermore, the overlap in approach of the moderate and the activist NGOs was small. The moderate Animal Protection Society mostly tried to create feasible solutions (e.g. housing system, intermediate

segment). The activist Pigs in Distress were more inclined to denounce existing behaviours or practices in the value chain (e.g. anaesthesia, transportation, castration and low meat prices) and promote the reduction of meat consumption. An exception to this rule was the introduction of the meat marker. With this tool, Pigs in Distress tried to create a solution for the dark side effects (animal suffering and environmental impact) of meat consumption. This picture confirms the 'dolphin' character of the moderate Animal Protection Society and the 'shark' character of the activist Pigs in Distress.

The differences raise the question whether the activist NGO and the moderate NGO were antagonists or complemented each other's role. The content analysis revealed examples and evidence that the differences in issues, target groups and approach worked out well. One example was mentioned in the description of the debate on castration of pigs (under Table 5 and Table 7). The Animal Protection Society struck a deal with the retailers, after Pigs in Distress had fuelled the debate with inflammable information. The honour for the deal went to the Animal Protection Society, but Den Blijker (2010) explained that Pigs in Distress had dictated the agenda of the meat industry and the supermarkets in the years before.

In two newspaper articles, journalists confirmed the existence and need for combined action between activist NGOs and moderate NGOs. In the newspaper article of Lubbers (2009) a communication expert explained that each sector needs a 'bad guy' and a 'good guy'. The 'bad guy' applies an aggressive approach and puts abuses on the public agenda. The 'good guy' applies the dialogue model and takes care that arrangements are made. They get ahead by complementing each other. In the newspaper article of Lindhout (2010) a sociologist explained that activist NGOs and moderate NGOs urgently need each other. The small and versatile activist NGOs are effective in creating urgencies (stigmatising companies). The bigger and slower moderate NGOs are better in negotiating and striking deals with companies. In fact, they complement each other because of their differences in approach and competences.

4 Reflection

In this section the findings on the complementary roles of activist and moderate NGOs are (1) combined in a flow chart of activities leading to system innovation, and (2) positioned in the multi-level perspective.

4.1 Flow chart of innovation process

The findings on the succession of issues and complementary roles of activist and moderate NGOs gave rise to the idea that an innovation process can be depicted as a flow chart of phases and parties involved. Figure 2 is the result of our effort to compose this flowchart.

The flow chart starts with normative pressure (red arrow, bottom right) created by activist NGOs publishing confronting reports (e.g. on anaesthesia slaughterhouses or transportation of livestock) or observing disappointing trends (e.g. record low prices for regular meat or economic constraints of farmers). This normative pressure is pumped into the heart of the triangle, where the moderate NGOs have a central position between knowledge partners, primary producers and value chain partners. The moderate NGOs consult knowledge partners (researchers and pioneers) to develop technological and regulatory solutions (e.g. Comfort Class stable) for animal welfare problems. The results are discussed with NGO representatives and demonstrated to primary producers.

The normative pressure generated by the activist NGOs (through the heart of the triangle) moves on to the primary producers and (via consumer behaviour) to retail companies and their suppliers. The activity of the various partners is coordinated through the gear wheels of a process in which the most relevant partners are involved. This coordination process includes negotiations and striking deals. Such deals (e.g. between Animal Protection Society, retail companies and Pig Farmers' Union) result in new production systems and market segments, enabling (1) primary producers to sell animal friendly produced pigs, (2) retail companies

and slaughterhouses to purchase animal friendly produced pigs, and (3) consumers to buy animal friendly produced pork in the supermarket.

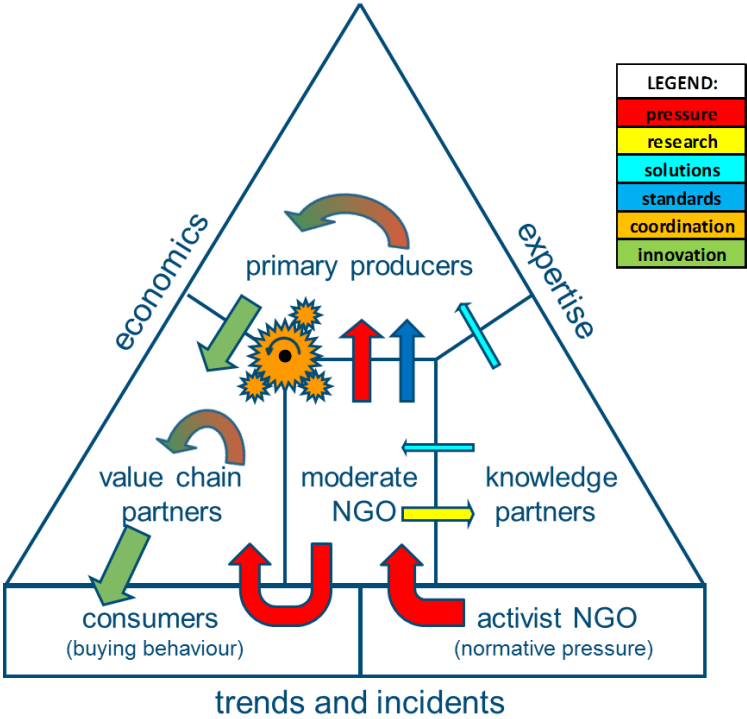


Figure 2: Flow chart of system innovation towards sustainable agriculture

The flow chart shows the sequence of actors and activities involved in a system innovation such as the shift from low-cost production/marketing of pork to animal-friendly production/marketing of pork. This sequence is used for the reflection on the role of activist and moderate NGOs in the multi-level perspective.

4.2 Positions in multi-level perspective

Positioning the issues raised in the media by the activist and moderate NGO in the multi-level perspective, it shows that the activist NGO indeed operated on the boundary between landscape and regime level. The activist NGO was aware of the aversion of citizens and consumers against animal suffering in the meat industry. They started actions and campaigns with media-relevant information about trends and incidents (campaigning against anaesthesia methods in slaughterhouses or abuses in livestock transportation). In fact, the campaigns of the activist NGO revealed violations of existing laws. Apart from societal arousal, they triggered government agencies and politicians to take action against the abuses

Furthermore, we see that the activist NGO also operated at the niche level, e.g. the launch of the meat marker to inform the consumer about animal welfare and environmental impacts of various types of meat. The meat marker aimed at raising consumer awareness of morally relevant differences in meat or protein products. The marker intended to pull the consumer away from conventional pork and beef to organic meat and vegetarian alternatives. It also challenged retail companies to profile themselves with organic and vegetarian products. So, the activist NGO aimed at the pork regime from both catching landscape trends and working at niche level.

The moderate NGO operated on the boundary between the niche and the regime level in a different way than the activist NGO. The moderate NGO picked up the social unrest caused by publications and

campaigns of activist NGOs. At the niche level, the moderate NGO developed an animal-friendly housing system (Comfort Class husbandry) and introduced their Better Life label to support an intermediate segment in the market. In addition, they sought strategic cooperation with the farmers' organisation. These initiatives stimulated pork producers to produce above legal minimum standards for animal welfare, acquire Better Life stars from the Animal Protection Society and get access to the intermediate segment in the market. They enabled retail companies to profile themselves by making the conversion to Better Life meat products.

When looking at the relation between activist and moderate NGOs we see that the activist NGO focused on making citizens and consumers aware of inconvenient truths in the pork production chain thereby increasing normative pressure on the pork regime. The activist NGO left it to regime-actors to solve the problem of occurrence of abuses and also paved the way for a moderate NGO to develop partnerships with actors of the pork regime to acquire support for animal-friendly pilots at farm level. The moderate NGO acted more constructively and participated in negotiations. Together they were successful in achieving changes at the regime level probably due to the pressure on the regime that was strengthened by the activist NGO. There were two main related changes at the regime level. First, the Comfort Class approach turned the producers' view on animal welfare from 'a set of conditions imposed by the government' to 'an ambition related to farmers' values but with economic hindrances' (De Greef *et al.*, 2011). Secondly, the Better Life label became a new market arrangement that structurally changed the pig sector. Through this label one million pigs per year have improved husbandry conditions by technical facilities around the end of this study's window of attention (2010-2012).

So, although the activities undertaken and issues raised by the two NGOs differed, they supported each other in achieving changes at the regime level (i.e. a more animal friendly pork sector). Their differences in approaches and competences seem to have made it possible to achieve such change. The activist NGO focused on raising normative pressure without having to reconcile with regime players. The moderate NGO, focusing on less threatening issues, was able to keep good relationships with the pork sector. This perspective adds to current knowledge that a variety of issues does not necessarily weaken normative pressure on the regime (Elzen *et al.*, 2011) but might make it possible for moderate NGOs to engage with regime players in order to work on possible solutions if the activities of activist and moderate NGOs complement each other.

5 Conclusions

The challenge of this study has been to better understand the roles of activist and moderate NGOs in system innovation processes. Our analysis shows that the moderate and the activist NGOs focused their attention on quite different issues in the newspaper articles on animal welfare in pork production and targeted different groups. The moderate Animal Protection Society focused on developing better housing systems and an intermediate market segment for animal-friendly pork. Furthermore, they rejected routine castration of piglets and the industrial production of pork in mega-farms. The activist Pigs in Distress predominantly focused on stimulating consumers to buy less meat. Simultaneously, they took action against record low meat prices and the related animal suffering in the meat industry. Furthermore, they introduced the so-called meat marker to show the consumer which types of meat are better for animal welfare and the environment.

In addition, the moderate and the activist NGOs both addressed different links in the pork production chain. The Animal Protection Society addressed primary producers, retailers and slaughterhouses. In collaboration with researchers and the pig farmers union they developed the Comfort Class approach. In collaboration with retailers and slaughterhouses they developed the Better Life label for animal-friendly pork. The activist Pigs in Distress, on the other hand, focused on citizens/consumers, livestock transporters and slaughterhouses. They pushed citizens/consumers in the direction of buying less meat and campaigned against record low meat prices. They denounced inadequate anaesthesia in slaughterhouses, long-lasting transportation of livestock and the stressful castration of male piglets.

The work of the activist NGO supported the moderate NGO. The activist Pigs in Distress focused on making citizens and consumers aware of inconvenient truths in the pork production chain. They thus paved the way for the Better Life label of the moderate Animal Protection Society. Consequently, the activities of the two NGOs complemented each other. The activist NGO created a demand for better animal welfare. The moderate NGO (together with pig farmers and value chain partners) co-created a supply of animal-friendly pork. The resulting situation was a substantial second pork chain with improved animal welfare.

Positioning the case in the multilevel perspective we conclude that moderate NGOs focused their attention to the niche and the regime whereas activist NGOs operated mainly on the boundary between the landscape and the regime. The activist NGOs used the aversion of citizens and consumers against the suffering of pigs. They started actions and campaigns against the current regime when they got wind of trends and incidents. The moderate Animal Protection Society operated on the boundary between the niche and the regime level. By focusing on different levels, raising different issues and addressing different actors in the pork production chain, they managed achieving changes in the regime.

This study reveals the relevance of catching trends and incidents at the landscape level, to strengthen pressure on the regime, in addition to multi-actor arrangements at niche and regime level. Occurrence of trends and incidents and activist NGOs stressing these trends and incidents, create urgency for change and consumer awareness. The activities of activist NGOs are thus relevant for innovation because their claim of voicing the feelings of the general public affects market partners to take responsibility, creating room for partnerships with moderate NGOs. So, better listening to activist NGOs could enable researchers and policymakers to better attune the introduction of (technological) innovations to windows of opportunity. The collaborative activities of activist and moderate NGOs represent a form of social intelligence with their capacities for trend catching, development of novelties and never wasting a good crisis.

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