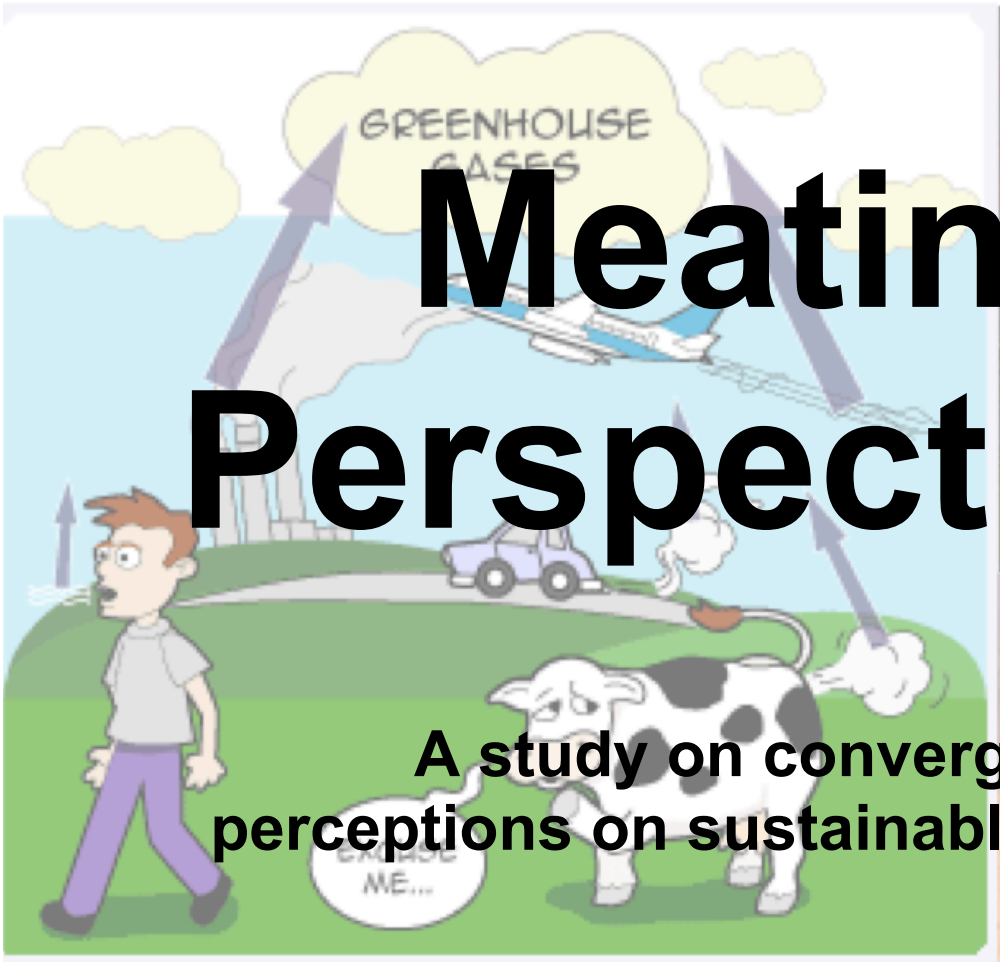
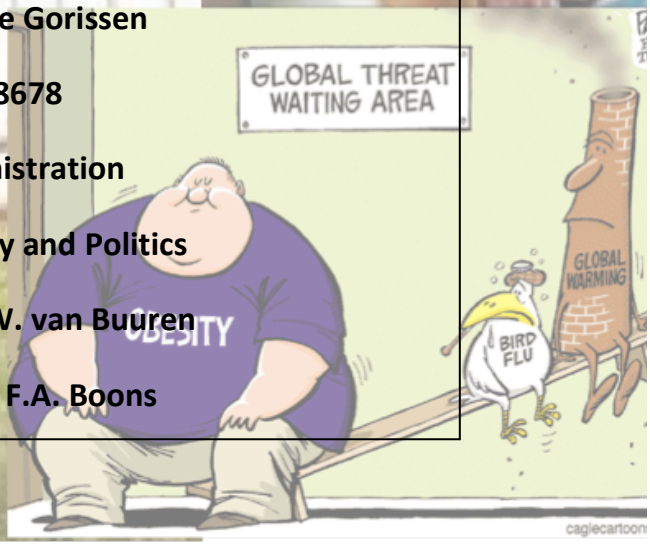
Meating Perspectives

A study on converging the perceptions on sustainable livestock





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Study: Public Administration

Master: Public Policy and Politics

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Acknowledgements

There are 1 billion hungry people in the world. This is one of the first lessons that I have learned during my internship at the Permanent Representation of the Kingdom of the Netherlands to the UN organisations in Rome. Without any background in food and agriculture, I have learned a lot about these interesting but complex issues and it is safe to say that I have developed a fascination for the complex issues of agriculture-, food-, poverty and hunger. This new found interest was connected to my interest for environmental issues, especially by a presentation held by Mr Vellinga on the environmental impacts of the production and consumption of livestock products. Despite the fact that I did not write my thesis at my internship, all my direct and indirect colleagues have inspired me to choose this topic as a directive for my thesis.

I could not have finished my thesis without the help of others. I would therefore like to thank everybody who, in one way or another, contributed to my thesis. Starting with my supervisor, Dr. Arwin van Buuren. I am not a so called 'model student', but thanks to his guidance, advice and most of all encouragement, I kept or recovered faith to keep working. Encouragements like "Ga zo door, we want more" is what kept me motivated to finish my thesis. Mr. van Buuren, I am truly very grateful for all of your help and encouragement and I do not think that I could have found a supervisor who would have been a better fit for me. And of course I would also like to thank my second reader, Dr. Frank Boons. Despite my tight schedule he managed to look at my thesis in a very short time span. Without his flexibility, I might not have been able to finish my thesis in time.

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After these numerous words of thanks, all that is left is to read the thesis. I hope you enjoy reading my thesis as much as I enjoyed conducting this research.

Sophie Gorissen,
Rotterdam, August 2011

Summary

Within the context of the increased attention for the environmental impacts of the livestock sector, a multi-stakeholder platform on Responsible Livestock is being developed. This platform aims to bring together key stakeholders in the livestock sector- including representatives of governments, the private sector, academia, civil society, research, and international organizations- to work together in order to accommodate the development of the livestock sector in a sustainable fashion.

In order for the platform to be effective, and cooperation among the participants to be achieved, the participants need to find a minimal consensus on a problem definition in order to agree upon a global agenda of action, and actually take joint action. Therefore the different views on the problems, or the different frames, of the actors need to be converged. This research will focus on the different frames which exist among the actors of the multi-stakeholder platform, and what can be done to converge these frames to reach a minimal consensus on a problem definition in order to take joint action. Therefore the main question of this study is:

What can the FAO as a coordinator of the multi-stakeholder platform do to achieve a consensus on the problem definition in order to achieve international cooperation for improving the environmental performance of the livestock sector?

The study consists of three steps; first the frames of the different stakeholders, and the issues on which they differ are identified. Second, the process of frame convergence is analyzed to determine whether or not the requirements for frame convergence have been met, and what is already done to converge the frames. And third, recommendations are made for further management actions to be taken by the FAO in order to enhance frame convergence.

These three analyses have led to the following conclusions:

1. Regarding the frames: All actors share the frame that there is a problem, which is urgent and needs to be solved. Furthermore all actors have a positive frame on the task. Nevertheless, there are still some discrepancies in the perceptions of what exactly the problem is, what is causing it and how it should be solved. While in general the concept of resource use efficiency is found as a common denominator which combines different perspectives, it is still a rather abstract concept which is very broadly defined. In order for an agreement to be reached on what concrete actions need to be taken, the participants need to further specify and define the concept of natural use efficiency as a problem, cause and solution. Therefore, their frames need to be further converged.

2. Regarding the process: Overall, all of the requirements for frame convergence were at least to some extend present in the multi-stakeholder platform. The requirement which was most convincingly present was the one of a sense of urgency. Furthermore, despite some room for improvements, the requirements of cognitive variety and dialogue and interaction were for a large part present as well. Most room for improvements can be found in the requirements of social variety and trust. The FAO has already taken most of the management actions that are defined in the literature, in order to enhance these requirements and stimulate the converge of the frames of the different participants. Special attention is paid to creating a sense of

urgency, certifying and consolidating meaningful images. Nevertheless, some points of improvement which can be identified. The main management actions that can be improved are the prevention of the exclusion of frames and actors, safeguarding interaction and investing in trust.

3. Regarding the recommendations: In order for an agreement to be reached on what concrete actions need to be taken, the participants need to further specify and define the problem, cause and solution. Therefore, their frames need to be further converged. Based on the analysis of the frames and the process, the following recommendations are made: 1) *Invest in trust, especially in the trust of the private sector representatives, 2) Give a place to frames on consumption in the process, 3) Invest in causal and normative discussions on the 'rightness' of frames, 4) Consolidate resource use efficiency, and 5) Further expand country involvement.*

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Chapter 1: Introduction

1.1 Introduction

Population growth and increasing per capita consumption levels have led to an increase in the demand for animal products. As a result of this growth in demand, the livestock sector developed as one of the fastest growing sub-sectors of agriculture (FAO, 2011: 1). Especially the demand in developing and rapidly developing countries has led to an increased demand for animal products. Here, urbanization and rising incomes have led to dietary changes, benefitting animal protein over protein from other agricultural products. The prognosis is that this demand will keep rising (FAO, 2009: 22-23). On top of that, the world population is growing and is expected to reach the dazzling amount of 9.3 billion in 2050. Due to this rise in the demand for animal products, and the population growth, the production of livestock products is estimated to more than double by the year 2050 (FAO, 2009: 23).

With the number of hungry people exceeding 1 billion in 2009 (FAO, 2009: 22-23), the provision of food is an important aspect of eradicating hunger and malnutrition. By providing for animal protein, the livestock sector is of great importance when it comes to food security. Furthermore, livestock products contain essential nutrients such as proteins, iron, calcium and vitamins. Scientists believe that, when kept to appropriate levels of intake, the inclusion of animal proteins in human diets enhances human health (Alderman et al., 2006; Neumann et al., 2003; Sen 1999; Westhoek et al., 2011). Furthermore, the sector has a substantial socio-economic function. Hence, it is not just providing food, it also provides income and a lot of small holder farmers and pastoralists are depending on livestock for their livelihoods.

Although the sector makes important contributions to food security, livelihoods and human health, research has shown that the way in which the sector interacts with its natural resource base has substantial implications for the environment (FAO, 2009; IPCC, 2007; Steinfeld et al., 2006; World Bank, 2009). The livestock sector accounts for nearly one fifth of the total anthropogenic GHG emissions released into the atmosphere, which induces climate change and global warming (FAO, 2009; IPCC, 2007). The sector contributes to climate change either directly (e.g. from enteric fermentation) or indirectly (e.g. from feed production activities, deforestation to create new pasture, etc) and produces about 9 percent of all carbon dioxide emissions, 37 percent of methane and 65 percent of nitrous oxide emissions. If these emissions are combined and expressed in CO2 equivalents this adds up to an amount of 18 percent of the total anthropogenic GHG emissions (FAO,2009; 54). The main problems along the animal food chain are attributed to land use and the change in land-use, feed production, animal production, manure management and processing, and international transport (FAO,2009; 55). Furthermore, publications have emphasized that livestock production, besides the emission of greenhouse gases, contributes to the pollution of air and water, loss of biodiversity, deforestation, land degradation and resource depletion (FAO, 2009; Steinfeld et al., 2006; Westhoek et al., 2011; World Bank, 2009).

As a result of the new knowledge and increased attention to the environmental impacts of the livestock sector, an initiative arose to set up a multi-stakeholder platform on Responsible Livestock. Under the secretariat of the United Nation's Food and Agriculture Organisation (FAO), the platform is supposed to bring together key stakeholders in the livestock sector- including representatives of governments, the private sector, academia, civil society, research, and international organizations- to work together and develop a global agenda of action in order to accommodate the development of the livestock sector in a sustainable fashion. Before the platform is actually launched, the FAO will conduct global consultations to consult on how livestock production can be best accommodated to grow in a socio-economic and environmentally sustainable fashion in the resource constrained environment of the future (FAO, 2011: 1).

The involvement of different types of stakeholders, although important to create a broad support, makes it more complicated to reach a common problem perception. Hence, a diversity of stakeholders with different backgrounds and agendas for participating in the platform increases the likelihood of diverging perspectives on the problem and the possible solutions. In order for the platform to be effective, and cooperation among the participants to be achieved, the participants need to find a minimal consensus on a problem definition in order to agree upon a global agenda of action, and actually take joint action.

This is easier said than done however. The complexity of the sector, and the interrelatedness of the many issues concerning the livestock sector, - such as food security, livelihoods, human health and the environment- leaves room for multiple perspectives on the livestock sector. Every actor has its own *frame* on livestock; its own way of looking at the problem. These frames which they have on the livestock sector and its problems, influences the way in which they perceive the problem, its causes and the appropriate solutions. Therefore, agreeing on a common problem definition requires the converging of the frames of the different actors.

This research will focus on the different frames which exist among the actors of the multi-stakeholder platform, and what can be done to converge these frames to reach a minimal consensus on a problem definition in order to take joint action. In order to aggregate the actors into a manageable number of units, this research will make use of configurations. These configurations are groups of actors who more or less share the same frames.

1.2 Problem definition

In order for international cooperation within the multi-stakeholder platform on Responsible Livestock to be achieved, the participants need to find a minimal consensus on a problem definition and appropriate solutions. Therefore, the frames which the participants have on the problem need to be converged.

The aim of this research is to identify the frames of the participants in the consultation of the multi-stakeholder platform on responsible livestock and on what issues they differ, in order to analyze how these frames can be converged to reach a minimum consensus on the problem definition and the appropriate solutions to solve the problem.

Therefore the main question of this study is '*What can the FAO as a coordinator of the multi-stakeholder platform do to achieve a consensus on the problem definition in order to achieve international cooperation for improving the environmental performance of the livestock sector?*'

In order to be able to answer the main question, five sub questions will be answered.

1. *What frames exist among the different participants in the multi-stakeholder platform, and on which issues do they differ?*
2. *What cognitive configurations are present among the actors in the multi-stakeholder platform?*
3. *Are the conditions for frame convergence present?*
4. *What actions have already been taken by the FAO to converge the frames?*
5. *What other actions can the FAO take to converge the frames?*

The research is both descriptive and prescriptive and consists of three parts. The first part is descriptive and focuses on the frames of the participants. The first and the second sub questions aim to identify the existing frames of the participants and the discrepancies between them. The second part focuses on the process of frame convergence and is descriptive as well. The third and the fourth sub questions are related to this part and aim to analyze both how the process has developed so far and what possible points of improvement are. And finally the third part is prescriptive. By answering the fifth sub question, based on the scientific literature and the analysis of the first four sub questions, further management actions are prescribed for the FAO to take in order to converge the different frames and reach a common problem definition and solutions

1.3 Scope

This research is a case study of the multi-stakeholder platform on responsible livestock. Since the platform is still in its initial consultative phase, the units of analysis are the actors who were involved in the consultation on the development of an Agenda of Action during the meeting in Brasilia on 17-20th of May 2011. This research will identify the existing frames which these actors have on the problem of the current livestock sector, its causes and the possible solutions to make the livestock sector more sustainable. In order to aggregate the actors in to a manageable number of units, the research will divide the actors into configurations. These configurations are identified in the desk study.

Furthermore, this research assumes that the frames which the different actors hold need to converge in order for international cooperation to be achieved and will be the central focus of this research. Therefore the research will make recommendations for further management actions to be taken by the FAO in order to converge the frames. The recommended management actions are based on existing scientific literature on frame convergence. Since the multi-stakeholder platform is still in its initial consultative phase, it is not possible to evaluate the management actions already taken by the FAO in order to converge the frames and reach a shared problem definition. This research therefore does not aim to evaluate the process.

Sustainable development is an ambiguous term and can thus be explained in diverse ways. The most common definition of sustainability entails at least three different aspects, an environmental aspect, an economic aspect and a social aspect, also known as the 3 P's; people, planet, profit (Elkington, 1994). While recognizing the importance and interrelatedness of these aspects, the focus of this research will be on the environmental aspect.

1.4 Relevance

This research has both a societal and scientific relevance. The following sub-paragraphs will respectively elaborate on the societal and scientific relevance.

1.4.1 Societal relevance

As is stressed in this introductory chapter, the livestock sector has a substantial impact on the environment. The multi-stakeholder Platform on Responsible Livestock, when successful, can make an important contribution in developing the livestock sector in a sustainable way. In order for the platform to be successful, a minimal consensus among the participants on the problem definition is essential. Analyzing the process of frame convergence in the platform, the existing frames, and the issues on which they diverge, can be beneficial for the FAO to improve their strategy to converge the frames of the participants and enhance a consensus on a minimal problem definition. This will increase the likelihood that the platform will be successful, which in turn will contribute to a reduction of the sector's environmental impact. Since improving the environment benefits society as a whole, this research is socially relevant.

Furthermore, if the multi-stakeholder platform is successful, it might induce more parties to join and the issue of livestock might flow over into other areas of climate negotiations. Reaching consensus in the multi-stakeholder platform might thus be a first step in the inclusion of livestock in the broader environmental governance structures and agreements.

1.4.2 Scientific relevance

A lot of research has already been done in the field of frames and frame convergence, resulting in a wide range of literature on the topic. However, most of the studies are conducted after the process has been completed and identify what went wrong or could have been dealt with in a better way. Whereas this research studies the discrepancies between the frames and the process of frame convergence in the beginning stage of the formation of the multi-stakeholder platform. The research can thus contribute to the later stages of the multi-stakeholder process and if the recommended management actions are applied in the next stages, a follow up research could evaluate whether or not the management actions have been effective. This will contribute to the scientific understanding of the process of frame convergence.

1.4 Outline

As is said before, this research is both descriptive and prescriptive, and consists of three parts, 1) identifying the frames of the participants in the multi-stakeholder platform and to analyze on what issues they differ, 2) analyzing the process of frame convergence: have the requirements for convergence been met, and what has been done to converge the frames, and 3) making recommendations for further management actions to converge the frames.

In the next chapter, the theoretical framework will be discussed. This chapter outlines the scientific literature on frames and frame convergence and will form the basis of this thesis (Chapter 2). Chapter 3 outlines the desk study on the existing frames and configurations in the wider livestock-environment debate. This chapter gives an overview of the main issues and points of view on the problem, causes and solutions for the environmental problems of the livestock sector found in the literature. The desk study forms the basis of the predefined configurations that are used to analyze the social and cognitive variety of the process of frame convergence and will form the basis of the survey and interview questions (Chapter 3). Chapter 4 discusses the methods which are used in this research, followed by an outline of the application of the scientific literature in this specific case study in the operationalization (chapter 5).

To introduce the empirical part of the study, chapter 6 will give a brief overview of the history and the context in which the multi-stakeholder platform is being developed, after which chapter 7 describes the existing frames and the differences and similarities between the frames. Chapter 8 describes the process of frame convergence. This chapter outlines what requirements for frame convergence were present and which were not, what actions the FAO has taken already to converge the existing frames of the participants, and what further actions could be taken to enhance frame convergence. Finally, the conclusion and discussion of this research is given in chapter 9.

Chapter 2: Theoretical Framework

2.1 Introduction

Within the trend of global governance and international cooperation, the increasing awareness of climate change and the urge to mitigate it has led to an emergence of both international environmental institutions and global environmental agreements (International Institute for Sustainable Development, 2007). This development has not gone unnoticed in the field of policy analysis. Several strands of policy analysis developed in the literature concerning the emergence and success of this global environmental governance. Related to the increasing importance of global governance, a shift in the focus of policy analysis towards pluralism can be identified (Van Eeten, 1999: 3). Whereas nation-states used to be the sole, or at least the main, policy makers of public policy, a wide range of non-state actors have increasingly gained influence on the making of public policy. The emerging interdependence of countries became more and more clear and has led to an increase in international policy making. Therefore the attention in policy analysis has shifted from analysis which used nation- states as a focal point towards analysis of networks of semi-autonomous actors which are interdependent on each other. A second shift in the policy analysis has evolved around the role of science and rationality of decision making (Van Eeten, 1999: 3). While the literature in policy analysis has focused on the role of science and rationality of decision making for a long time, a turn towards the acknowledgement of 'bounded rationality' and 'satisficing' rather than choosing the optimal solution won ground in the literature. In addition, the objectivity of science and information has become widely questioned by studies which emphasize the social construction of reality (Fisher and Forester, 1993; Schön and Rein, 1994; Stone, 2002). And finally the 'argumentative turn' can be seen as a third shift (Van Eeten, 1999: 3-4). Within this shift policy making is regarded as argumentative and rhetorical rather than scientific. Therefore argumentation and discourse have increasingly been the unit of observation in policy analysis for understanding and improving policy making (Van Eeten, 1999: 3-4).

This research will use the insights of these three shifts by acknowledging the complexity of the issue and taking the network of the multi-stakeholder platform with its diversity of actors, both governmental and non-governmental, as a focal point rather than focussing on governmental agencies only. Furthermore, the research will use the insights of the argumentative turn by acknowledging the social construction of reality and public deliberation, and the importance of frames herein. Therefore the research assumes that shared frames, and frame convergence, are key for achieving international cooperation. Before elaborating the theoretical concepts of frames and frame convergence, this chapter will start by outlining the different approaches to analyse decision making and international cooperation in paragraph 2.2. Once this is done paragraph 2.3 will elaborate on the concept of frames and the social construction of reality. Paragraph 2.4 will discuss the theoretical concept of configurations where after paragraph 2.5 will discuss the process of framing. Paragraphs 2.6 and 2.7 will respectively outline the requirements for frame convergence and the management actions to stimulate the convergence of frames. The chapter will be concluded by developing a conceptual model in paragraph 2.8, which will outline how this research will make use of the theories discussed in this chapter.

2.2 Rational decision making or public deliberation?

There are multiple approaches to analyse and explain the decision making process and international cooperation. This paragraph will first discuss the model of rational decision making and distributive bargaining and the shortcomings of such an approach since it is dominant in the current literature on international cooperation. Once this is done the concept of public deliberation and the role of beliefs and frames will be elaborated.

2.2.1 Rational decision making and distributive bargaining

The main body of literature on reaching international cooperation is based on 'systemic' or structural components and game-theoretic components (Milner, 1992: 467). The systemic component focuses on the international systems as an explanation for the sources and constraints on cooperative behavior among nation-states. Whereas the game-theoretic component focuses on the reasoning of rational decision making. The economic reasoning of the game theory, especially the prisoners' dilemma, is widely used to explain international politics. The distributive bargaining model is used as a starting point which focuses on the preferences of nation-states, based on their interests, and the opportunities to realize absolute and/or relative gains as an explanation for cooperation. It thus follows economic reasoning by assuming that nation-states will act rationally in order to increase their net benefits. On the premises of full information and known and fixed preferences, the actors are assumed to calculate and choose the option which yields the highest gains for them based on their interests. The chances of achieving international cooperation are thus believed to be dependent on the distribution of benefits (Milner, 1992: 471).

There are a few shortcomings of these theories. The first shortcoming is the assumption of perfect information which is required for rational decision making in the game-theoretical model. For example, the nation-states are assumed to have full information on the causes and extents of the problem as well as on the consequences of different courses of action. Consequently they can identify their preferences or 'negotiation set' (Zürn, 1998: 627). This is highly questionable however. Hence the literature on wicked problems emphasizes the role of uncertainty and knowledge in decision making. The uncertainty concerning the extent and causes of a problem as well as the uncertainty of the outcome of different policy alternatives, put great constraints on the identification of preferences. Uncertainty thus makes it impossible to identify fixed preferences (Zürn, 1998: 629). Furthermore, the game-theoretic model assumes that nation-states have a certain knowledge of the preferences and possible strategies of the other nation-states. However, the multitude and dynamics of actors which are involved in the negotiations, as well as the high level of uncertainty concerning the problem and its solutions put great constraints on predicting the strategy of the other nation-states (Milner, 1992: 471).

The second shortcoming is that it conceives nation states as unitary entities with fixed preferences, based on interests, who bargain with other nation states (Milner, 1992; Zürn, 1998). The normative aspect of decision making, the role of ideas and beliefs as a motivation for cooperation and influencing the preferences of the nation-states are largely neglected. The preferences of nation states are not always clear and unitary and they are influenced by their national politics. Furthermore, there are also non-governmental actors involved which influence the negotiations by

raising awareness and diffusing ideas and beliefs, and thereby changing the preferences of nation-states (Zürn, 1998: 628-631).

To conclude, most literature on international cooperation includes both systemic components and game-theoretic components. While some literature emphasizes the role of ideas and beliefs, it is to a high degree neglected in recent literature on international cooperation. Too much emphasis is put on rational decision making and the role of interests and bargaining. The game-theoretic theories largely neglect the normative part of decision making; the process of arguing in which the actors negotiate and deliberate on which policy alternative would be preferred based on normative arguments such as beliefs and frames.

2.2.2 Public deliberation

Whereas the game-theoretic theories neglect the role of ideas and frames, it is a central component of the theories on public deliberation. In general, public deliberation in political theory is used to describe a debate and discussion, or process of interaction, among different participants to weigh different reasons for a course of action in a specific policy issue. The definition of public deliberation differs slightly among different authors in the literature. Nevertheless two general aspects can be recognized. The aspect of '*carefully weighing'* is the first main character of the process (Barber, 1994; Fishkin, 1991; Gastil, 1993: Page, 1996). This is reflected in the definition of Mathews who defines public deliberation as "the carefully weighing of both the consequences of various options for action and the views of others" (Mathews, 1994: 110). The aim of public deliberation as *choosing a course of action* to solve a problem is a second main aspect and can be found in the definition of Goodin who defines deliberation as "the weighing of reasons for and against a course of action" (Goodin, 2003:54). Furthermore, public deliberation is a linguistic process. Schön and Rein therefore define policy discourse as "the verbal exchange, or dialogue, about policy issues within or across institutions" (Schön and Rein, 1994: 34). Public deliberation thus aims to create an interaction process among a diversity of actors in order to produce appropriate, well-informed standpoints and in which actors are willing to revise their standpoints by means of deliberation, new information, and the arguments of other actors. If the process results in a decision, it will be based on argumentation. In this way, deliberation replaces pure bargaining and the power struggles in decision making, with a process of arguing. The process of public deliberation, arguing over the rightness of a course of action, is also referred to as the 'argumentative turn' (Fischer and Forester, 1993).

In the case of this thesis, we can view public deliberation as a dialogue among the actors involved in the multi-stakeholder platform on responsible livestock to decide on what the problem of the current livestock sector is, what the goal of international cooperation should be and which course of action should be taken. To make this decision, the actors thus need to deliberate on the extent and causes of the problem and an appropriate solution. The perspectives from which the actors view the problem and the standpoints which they take can be explained by different motivations. Whereas rational decision making theories assume that these standpoints will be taken based on interests only, other theories emphasize the role of ideas, paradigms and frames of references (Hall, 1993; Sabatier and Jenkins-Smith, 1993; Schön and Rein, 1994).

The normative aspects of decision making, the view that actors do not only base their points of view based on interest but include their normative ideas and beliefs, is strongly embedded in the literature on public deliberation. Burkhalter et al. emphasize the moral character of argumentation, underlying value conflicts and the different perceptions of a problem in public deliberation (Burkhalter et al., 2002: 401- 411). The role of ideas and views is also reflected in Lindeman's work who defines public deliberation as "a cognitive process in which individuals form, alter, or reinforce their opinions as they weigh evidence and arguments from various points of view" (Lindeman, 2002: 199).

2.3 Frames and the social construction of reality

The argumentative turn is thus a term which indicates a process of arguing over the rightness of a course of action in which actors try to convince other actors of the appropriateness of a certain action. The policy making process is believed to be argumentative and rhetorical rather than scientific (Fischer & Forester, 1993). The analysis of the arguments which are used to persuade other actors are a focal point for this line of literature. These theories put great emphasis on the role of normative beliefs, ideas and ways of looking at the world, on these arguments. An important aspect of this is the wide acknowledgement that the reality is socially constructed (Fischer & Forester, 1993; Stone, 2002; Van Buuren, 2006). There is no 'one' reality, rather reality is a social construct, made by people. Therefore reality is what we perceive as real and agree upon with each other that is real. Political problems are socially constructed as well, hence, whether or not a situation is perceived as a problem is dependent on how one looks at the problem (Rochefort & Cobb, 1994; Stone, 2002). Therefore, influencing the interpretations of a situation, how people see something, is controlling or at least influencing which (and if) policies are implemented. Politics is just this; it is a constant struggle over interpretations (Stone, 2002:). In order to get people to see a situation in a specific light actors use different kinds of languages to defend their views on goals, problems and solutions. Therefore, Stone argues that political reasoning is not a matter of calculation as the rationalists suggest, but rather a matter of metaphoric reasoning. Policy decisions, she argues, are about meaning not matter (Stone, 2002: 379). Problem definitions can be used to influence the interpretations of a problem, therefore Stone defines it as "the strategic representation of situations" (Stone, 2002: 133). Defining problems is political not only because they influence the interpretation of the problem, but also because they contain implicit messages and values which promote a certain kind of action. The manner in which problems are defined thus influences the course of action which will be taken (Rochefort & Cobb, 1994; Sabatier & Jenkins-Smith, 1993; Stone, 2002).

'The reality' is thus socially constructed and depends on how people perceive a problem. These perceptions are also referred to in the literature as *frames*. A lot has been said about the role of these perceptions or frames, and their influence on decision making. But what exactly is a frame? A frame can be described as a way of looking at the reality, the meaning which is given to the perceptions of reality. Or as Van Buuren puts it "the subjective and tacit reconstructions of reality" (Van Buuren, 2006: 23). A frame is thus a way of looking at something. This frame or perception is not 'given', it is a cognitive and social construct; a meaning or value which is given to a certain situation and is influenced by interaction with other actors. What meaning is given to a certain situation, is dependent on multiple contextual factors such as one's experience, knowledge, culture,

norms and values. Furthermore, a frame consist of multiple of sub-frames which all together form one frame.

The frame on a problem is called a problem perception or a problem definition. Termeer and Koppenjan define a problem definition as "interpretations of the gap between the present or expected situations and a desired situation, and the instrumental relations between both" (Termeer & Koppenjan, 1997: 82). A problem definition thus consists of multiple sub-frames. A frame on the current situation, a frame on the desired situation, and a frame on how this desired situation can be achieved.

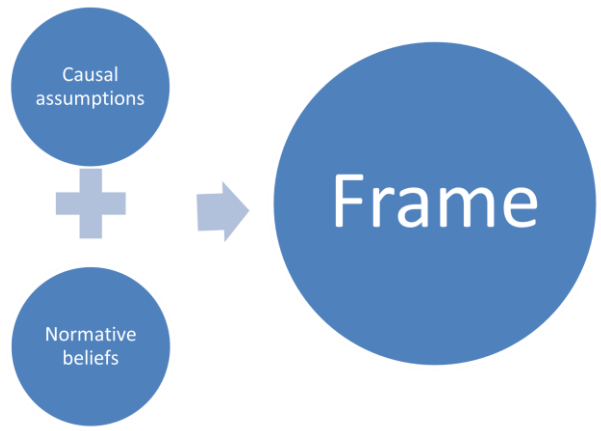


Figure 2.2: Frame (Johnston, 1995; Sabatier & Jenkins-Smith, 1993)

The frame on the current situation in turn consists of how someone perceives the reality, whether or not the current situation is perceived to be a problem, what exactly this problem is, and what is causing this problem. In addition, the frame on the urgency of the problem, how severe the problem is and how urgent solving the problem is, is part of the frame on the current situation. The frame on the desired situation consists of a frame on the goal, and a frame on the task. A frame on the goal is the perception of what should be the situation, while the frame on the task is the perception of the difference between the current situation and the desired situation. And finally the frame on the methods consists of a frame on the solution and a frame on the instruments. The frame on the solution is the perception of what actions will be effective and appropriate to change the current situation and achieve the desired situation, and the frame on the instruments is the perception of what will instruments are appropriate and will be effective to achieve the desired situation.

These sub-frames influence each other. The frame on the problem influences the frame of the causes, and this in turn influences the frame on the solution and the task. The collection of all these sub-frames together forms the problem definition. This all sounds rather abstract. It might become more clear when we use an illustration of a frame on livestock.

Somebody can have a negative frame on livestock and can perceive the problem of the negative impact of livestock production on the environment to be a problem of too much consumption of livestock products. His view on the solution for the environmental problems of the livestock sector would logically be that the consumption of meat should be altogether, or at least drastically, reduced. This person does not believe that people will stop eating meat on their own and therefore in his view the most effective way to change the diets of people could be accomplished through a ban of meat products in the supermarket. But this negative frame on meat and meat consumption does not necessarily have to be based on the impact of the livestock sector on the environment only. It could be highly related to the fact that this person is a vegetarian who believes that eating another living being is cruel. Eating meat is thus perceived as bad and people should not eat meat at all.

The frame which one has on the production of livestock products thus consist of multiple sub-frames. Furthermore, the frame is dependent on one's norms and values, what one beliefs *should* be the situation, and his experience and beliefs on what is *effective,* or what will work (Johnston, 1995:217). Sabatier and Jenkins-Smith refer to this structure of reasoning through which a frame is formed as a person's 'belief system', consisting of a set of causal and normative assumptions about reality" (Sabatier & Jenkins-Smith, 1993: 30). They distinguish three different levels of beliefs. The first one is a *"deep (normative) core* of fundamental normative and ontological axioms that define a person's underlying personal philosophy" (Sabatier & Jenkins-Smith, 1993: 30). In our example this would be the vegetarian belief that eating meat is bad and people should not be eating meat at all. The second level of beliefs is the n*ear (policy) core* of basic strategies and policy positions for achieving deep core beliefs in the policy area or subsystem in question. Going back to our example again this would be the view that the consumption of meat should be drastically reduced in order to reduce the impact of the livestock sector on the environment. And lastly the third level are the *secondary aspects* which are composed of *"*a multitude of instrumental decisions and information searches necessary to implement the policy core in the specific policy area" (Sabatier & Jenkins-Smith, 1993: 30). This would correspond with the conviction that the reduction in consumption could most effectively be achieved through a ban of meat products in the supermarkets. Schön and Rein (1994) use the term 'frame of reference' to refer to the 'lens' or framework of conceptions and normative beliefs, through which the actors interpret reality. Similar concepts came up under the term of *paradigms*, "a framework of ideas and standards that specifies not only the goals of policy and the kind of instruments that can be used to attaint hem, but also the very nature of the problems they are meant to be addressing" (Hall, 1993: 279) and *discourses* "a set of concepts that structures the contributions of participants to a discussion; an ensemble of ideas, concepts, and categories through which meaning is given to social and physical phenomena, and which is produced and reproduced through an identifiable set of practices" (Hajer, 2003: 89).

This cognitive frame which is used to give meaning to a certain situation or problem is not static. New experiences or information can lead a person to reframe an issue (Dewulf et al., 2007); to give a new meaning to the situation. In the literature this is called *framing*. Frames are influenced by two types of factors, cognitive and social factors. The cognitive factor is internal and is similar to the above mentioned belief system of Sabatier and Jenkins-Smith. It concerns one's own causal and normative assumptions about reality and is thus the collection of frames on 'what should be' and 'what will work' to achieve this (Johnston, 1995; Sabatier & Jenkins-Smith 1993). Factors which influence these cognitive frames are plenty. Some examples are one's education, religion, belief, culture, knowledge and experiences. New information and experiences can change the cognitive frames. The external factors which influence framing are socialization and interaction (Van Buuren et al., 2006: 7). People frame their frames in interaction with other people (Termeer, 2007: 25). Interaction between people with different cognitions might lead an actor to adopt a new cognitive frame, or adjust his old frame.

In most political debates it is possible to identify groups of actors who more or less share the same beliefs and frames. Sabatier and Jenkins-Smith (1993) refer to these groups as *advocacy coalitions.* They define these coalitions as groups of actors who more or less share the same beliefs (Sabatier and Jenkins-Smith, 1993: 33). Similar concepts that can be found in the literature are *discourse coalitions* (Hajer, 2003), and *paradigms* (Hall, 1993).

Termeer (2007) speaks of social-cognitive configurations. She defines a configuration as “a shared definition of reality which is created among a vast group of people” (Termeer, 2007: 25-26). This definition holds both a cognitive, the shared definition of reality, and a social component, created among people. In the next paragraph this will be discuss in more detail.

2.4 Configurations

Framing thus has a cognitive and a social component. Frames are the meaning which a person gives to their perception of reality, which is constructed in interaction with other people. Termeer’s definition of social-cognitive configurations reflects both these components since she defines a configuration as “a shared definition of reality which is created among a vast group of people” (Termeer, 2007: 25-26).

A cognitive configuration can be seen as a group of actors who share a definition of reality. People often seek confirmation of their beliefs and ideas (Sabatier & Jenkins-Smith, 1993; Termeer, 2007; Van Buuren, 2006) and they therefore have a tendency to interact most often with people who have the same background and beliefs, who are in the same cognitive configuration. This creates social configurations, groups of people who only or mainly interact with each other (Termeer, 2007). This interaction between the same group of people often leads to a convergence of frames; the way in which they view the reality becomes more and more similar. Cognitive belief patterns are thus influenced by interaction patterns. And interaction patterns in turn are influenced by the cognitive patterns, since people have a preference of interacting with people who share their beliefs. The actors who interact with each other develop interaction rules, ‘entry and exit rules’. These are institutionalized and agreed upon rules concerning who can participate and who cannot.

Interaction with actors from the same kind of cognitive configuration increases the likelihood of shared beliefs among those actors (Termeer, 2006: 28). Their frames often become so similar that the actors perceive them as an ‘objective truth’. When actors focus on confirming their own ideas and beliefs too strongly, they will get less perceptive to contrasting evidence and beliefs. They won’t allow any other perspectives than their own beliefs. Termeer refers to this as a *cognitive fixation* (Termeer, 2007: 26). But people can not only get fixated in their beliefs, they can also get fixated in their interaction patterns; who they talk to. When the interaction includes the same group of people, while excluding others, we can talk of a social fixation (Termeer, 2007: 26). Fixations are thus induced by the interaction between people within the same cognitive configuration. They confirm each other’s beliefs and reject all different points of view. Sabatier and Jenkins-smith argue that since these patterns of interaction or interaction rules are induced by the belief systems of people, they are relatively stable over a decade or more. Hence, they argue that core beliefs of people are not likely to change through learning from the opposing points of view from actors with a different belief system (Sabatier & Jenkins- Smith, 1993: 34).

To conclude, a social-cognitive configuration is thus characterized by "the relatively stable interaction patterns (who), agreed upon interaction rules (how) and shared meanings (what)" (Termeer, 2006: 28). The patterns of reasoning and interaction influence each other and can get fixated. Furthermore, configurations are not bound to the borders of governments, organisations or institutions. As Sabatier and Jenkins-Smith emphasize in their definition of advocacy coalitions, the groups are ordered based on their belief systems rather than their interests. Different actors within the same organisation can hold different beliefs and views and can therefore belong to different advocacy coalitions or configurations. Furthermore, actors can identify themselves with the frames and lines of thought of multiple configurations. A configuration is a mere structure of reasoning and beliefs. Just like the actors of an advocacy coalition do not necessarily have to share *all* of the beliefs of a belief system, the actors within a configuration can have slightly different frames and identify themselves with multiple configurations.

2.5 The process of framing

In order for cooperation between actors to be achieved, they need to agree upon the problem definition. They need to agree upon what the problem is, what the causes are and how the problem could be solved, before they can agree on taking joint action. To reach a consensus on the problem definition, the frames of the actors, the way in which they perceive reality, need to converge. It is not necessary however to reach a complete consensus on the problem and all of the sub-frames. Sabatier and Jenkins-Smith argue that it is enough to reach a consensus on the secondary aspects of a belief system and some of the policy core values (Sabatier & Jenkins-Smith, 1993: 53). Reaching a consensus on the deep core values is an almost impossible task since it would require actors to abandon some of their core beliefs. And these will, according to Sabatier and Jenkins-Smith, not change unless there are external perturbations. Policy oriented learning, which they define as the "gradual alterations of the belief systems of actors as a result of formal policy analyses and trial-and-error learning" (Sabatier & Jenkins-Smith, 1993: 53), they argue is most likely to occur within their own belief systems or frames of reference. In other words, slightly altering their points of view without changing their core beliefs (Sabatier & Jenkins-Smith, 1993: 44). Hence, the actors are more likely to listen to likeminded people than they are to listen to people with opposing beliefs. In the literature this is referred to as *first order learning* (Termeer, 2007: 26). However, there needs to be some consensus on the problem and its solution, at least enough to come to joint action (Termeer & Koppenjan, 2004:87). This will require *second order learning*[1], the reflection on one's own frames and beliefs. While acknowledging the constraints which core beliefs have on second order learning, to reflect on one's own beliefs and views of reality, Termeer argues that it is possible to achieve (Termeer, 2007: 26).

[1] This is also referred to in the literature as *cross-frame reflection* (Schön and Rein, 1993) and *policy oriented learning between advocacy coalitions* (Sabatier and Jenkins-Smith, 1993).

Van Buuren (2006) identifies three processes which need to be realized in order to achieve a problem definition and solution which is supported by all actors: the processes of frame reflection, frame convergence and the enrichment of frames (Van Buuren, 2006: 76-77).

The first process is the one of *frame reflection*. Before a common problem definition can be found, it must be clear what the frames of the participants are on the problem and what the similarities and differences are between these frames. Therefore it is necessary that the actors identify their views on the problem (Van Buuren, 2006). Once the frames are identified, the actors need to discuss the problem and the multiple ways of looking at it. The participants need to reflect upon their own frames and critically look at the 'rightness' of these frames (Buuren, van, 2006:76-77). The first step is thus that the actors are willing to participate in a process of frame reflection in which they question their view on the problem, its causes and the possible solutions and possibly alter these views (Buuren, van, 2006: 76-77; Schön & Rein, 1994:40; Termeer, 1997:9).

The second process is the one of *frame convergence*. Once the frames are identified and their 'rightness' has been discussed, common ground must be found. In other words, the frames need to be converged towards shared frames. The process of frame convergence thus aims to find frames that the actors share to bring the different frames closer together. As said before, it is not necessary to reach a consensus on all the aspects of the frames. It is however necessary to reach enough consensus on them to come to joint action. The second process is thus that actors look for frames or meanings that they share, to find 'common ground', and use these common grounds to create shared frames (Schön & Rein, 1994:40; Termeer, 1997:9; Van Buuren, 2006: 76-77).

And finally, the third process is the one of *enriching frames*. New information or the (de)coupling of different aspects of the problem can lead to the creation of new, unknown and creative views which contain possibilities for new aspirations (Van Buuren, 2006: 76-77). The third step is thus that the actors involve themselves in an interaction process in which they think outside of their own frame of reference and improve or enrich the existing frames (Van Buuren, 2006: 76-77).

To conclude, the participants thus need to be willing to participate in a process of frame reflection in which they 1) identify their frames and reflect upon them, 2) look for common grounds and frames that they share, and 3) possibly adjust their frames towards more converging ones. Therefore, they need to be willing to involve themselves in an interaction process in which they think outside of their own frame of reference in order to improve and enrich the existing frames (Van Buuren, 2006: 76-77). These processes do not occur automatically however, frame convergence needs to be stimulated. The literature in the field of public politics refers to this as 'frame management' (Termeer & Koppenjan, 1997:86). The aim of frame management is to create shared frames among the actors rather than influencing the frames of the actors towards one specific frame. Hence, there is not just one correct frame. Since there are multiple realities all frames are correct. Frame management is therefore rather creating the conditions under which frame convergence is most likely to occur (Termeer & Koppenjan, 1997:86).

There are several management actions proposed in the scientific literature to create these conditions. These will be discussed in paragraph 2.7. But before we go in to the management actions, first the requirements for frame convergence will be discussed in paragraph 2.6.

2.6 Requirements

The previous paragraph outlined the process of framing. The importance of frame reflection, the convergence of frames and the enrichment of frames where emphasized for reaching consensus on a common problem definition. It was also said that these processes do not always occur automatically, they need to be stimulated. However, in order to stimulate frame convergence, it needs to be clear what the requirements for framing shared frames are. This paragraph will outline the requirements, or conditions, under which frame convergence is most likely to occur.

2.6.1 Sense of urgency

The first requirement for frame convergence is that the actors have a 'sense of urgency' (Van Buuren, 2006: 76). A sense of urgency means that the actors perceive the situation to be a problem which urgently needs to be solved and is thus of a high priority. Furthermore, the actors need to be convinced that cooperation among each other, or joint action, is necessary in order to solve the problem. If they do not have this sense of urgency, it is unlikely that they will involve themselves in a process of questioning their own beliefs, let alone agree on taking joint action (Van Buuren, 2006: 76).

2.6.2 Cognitive variety

The second requirement for frame convergence is cognitive variety; the existence of a variety of different frames on the problem and its possible solutions among the actors and the inclusion of these cognitions into the debate. The previous paragraph identified frame reflection, reflecting upon one's own frames, as a first step in frame convergence. The confrontation with actors from different cognitive configurations is essential herein. Hence, when the actors are not confronted with opposing points of view, they will have no incentive to reflect on their own points of view (Termeer, 2006; 53). Furthermore, a diversity of frames in a group can lead to new, innovative and improved frames. Cognitive diversity is thus beneficial for enriching the frames. Sabatier and Jenkins-Smith (1993) argue however that in order for an agreement to be reached, the incompatibility between the beliefs systems or configurations cannot be too great. They state that when the core values of actors are threatened by a high level of conflict between the beliefs, actors will blatantly hold on to their own beliefs (Sabatier & Jenkins-Smith, 1993: 49). The debates which follow under these circumstances are referred to in the literature as 'dialogues of the deaf'. The different actors will talk past each other instead of actually listening to what the opponents say (Sabatier & Jenkins-Smith, 1993; Van Eeten, 1999). Sabatier and Jenkins-Smith assume that the best chance of reaching an agreement is in dialogues between actors of beliefs systems which are in a mediate level of conflict with each other. In such a situation the actors are assumed to have enough incentives to join the debate and provide resources to defend their case, while they are most likely to be reflecting on their beliefs (Sabatier & Jenkins-Smith, 1993: 49-50). It is thus necessary that there is at least some form of cognitive variety (Sabatier and Jenkins-Smith, 1993; Termeer, 2006). Ensuring cognitive variety can be done by occasionally adding new elements such as new actors with different cognitions, new information or defining new agendas (Van Buuren, 2006: 77).

2.6.3 Social variety

The third requirement for frame convergences is social variety, the existence of different kinds of participants with different views on the problem and its possible solutions. This means that there needs to be participation from all kinds of involved stakeholders. If actors only interact with other actors who have the same cognitions, their frames will confirm each other which can lead to cognitive fixations. Therefore it is important to involve a broad range of stakeholders from multiple cognitions. This will induce a confrontation of different cognitions and is a necessity for frame reflection. Hence, as was emphasized before, if actors are not confronted with other cognitions, they will have no incentive to reflect upon their own frames. Furthermore, a diversity of actors with different interests, frames and knowledge in a group can lead to new, innovative and improved frames. Social variety is thus beneficial for enriching the frames. Again there are multiple theories on the optimal balance of the variety of actors involved. However both Sabatier and Jenkins-Smith (1993) and Termeer (2007) as well as Koppenjan and Klijn (2004) underline the importance of at least some social variety. When certain actors of a cognitive configuration are kept out of the process, their frames will keep existing and they could lead to cognitive fixations (Termeer & Koppenjan, 1997:90). Involving new participants which have other interests or cognitions can add new frames in the process and can break through cognitive fixations.

2.6.4 Dialogue and interaction

The fourth requirement is dialogue and interaction. This requirement coincides with the requirement of social and cognitive variety. Hence, frames are framed in interaction with other people (Van Buuren, 2006; Termeer, 2007). Dialogue and interaction are therefore essential for frame convergence. In order for actors to reflect upon their frames, they need to be confronted with other cognitions. Without this confrontation, they will have no incentive to reflect on their own frames (Termeer & Koppenjan, 1997:84). Enough time and room for interaction and debate are thus essential for frame reflection. Furthermore, in order to find common ground and converge the frames, it must be clear what the different frames are and the actors need to identify their points of view and discuss the rightness of the different interpretations of the problem and the appropriate solutions. Without sufficient interaction the frames are less likely to converge or enriched.

2.6.5 Trust

The fifth requirement is trust (Koppenjan & Klijn, 2004; Van Buuren, 2006). The requirement of trust can be divided into the trust between the different participants, and the trust of the participants in the neutral position of the process management. To come to interaction which is meaningful and effective, mutual trust among the actors is necessary. The actors need to believe that the other actors are willing to help them or work with them, instead of against them, and take them seriously. A lack of trust among the participants will constrain cooperation and will result in a lack of willingness to identify and reflect upon one's own frames. Hence, if the actors do not feel comfortable around each other, they will not feel free enough to identify their frames and discuss their view of reality.

There will be hardly any interaction and if there is dialogue they will not actually listen to each other. It is very probable that in a situation of distrust a dialogue of the deaf will follow (Sabatier & Jenkins-Smith, 1993; Van Eeten, 1999). Furthermore, in order for the actors to identify their frames and engage themselves in a process of frame reflection and reframing, the actors need to have trust in the (neutrality) of the process management. A process management that is perceived to be independent or neutral can stimulate the actors to reflect upon their own frames without 'being accused' of trying to force a particular problem perception or solution. This can be very beneficial for the convergence of frames (Van Buuren, 2006: 226).

A sense of urgency, social and cognitive variety, dialogue and interaction and mutual trust are thus five conditions under which frame convergence is most likely to occur. The next paragraph will outline some management actions which can be taken to enhance these conditions.

2.7 Management actions

The previous paragraph focused on the requirements, or conditions, which are necessary to achieve frame convergence. This paragraph will outline the management actions which can be taken to stimulate the convergence of frames. The management actions are divided into two categories; cognitive interventions and social interventions. The cognitive interventions aim to stimulate frame reflection and convergence in a direct way. They thus focus on the frames or cognitions of the involved stakeholders and aim to create cognitive variety in the process to prevent cognitive and social fixations (Termeer & Koppenjan, 1997: 88). While the social interventions on the other hand target to influence the frames of the involved stakeholders in an indirect manner by creating social variety among the stakeholders (Termeer & Koppenjan, 1997:88).

Creating a sense of urgency. As was emphasized in the previous paragraph, a sense of urgency is essential in order to get the actors to participate in the process, work together and engage in a process of frame reflection. This sense of urgency can be created by emphasizing how severe the problem is, the importance of solving the problem as soon as possible, and the necessity of cooperation among the actors to solve the problem. Furthermore, positive pressure and setting deadlines can help to create a sense of urgency (Van Buuren, 2006: 76).

Prevention of excluding frames. The second management action is the prevention of excluding frames from the process of framing. Keeping certain ideas and beliefs systematically out of the process of framing increases the chance of cognitive fixations (Termeer & Koppenjan, 1997:93). Therefore, the process should be open to all existing frames and should not exclude particular frames. Hence, if frames are excluded, they will not be discussed and reflected upon. By excluding them, the frames will not disappear. Rather they will lead a life of their own and jeopardise the convergence of the frames. The actors could revert to these frames in a later stage of the process which could frustrate the process. By preventing the exclusion of frames, you can ensure that the actors cannot argue afterwards that the solutions were not considered. It is thus essential to keep the process open to new ideas, meaning that conflicting frames which might be perceived to be negative and counterproductive should be included as well.

Prevention of the exclusion of actors. The prevention of exclusion of actors aims to maintain the social variety in the interaction process in order to avoid social and cognitive fixations (Termeer & Koppenjan, 1997:90). Hence, the systematic exclusion of actors out of the process of framing increases the chance of cognitive and social fixations (Termeer & Koppenjan, 1997:90). Therefore, the process management should avoid the exclusion of particular actors, and keep the involved actors engaged in the process. According to Termeer and Koppenjan (1997), particular attention should be paid to the inclusion of opponents or actors with other cognitions (Termeer & Koppenjan, 1997:90).

Introduction of new ideas. The introduction of new ideas will create cognitive variety and induce actors to reflect upon their own frames of reference. This can be helpful to break through both cognitive and social fixations (Termeer en Koppenjan, 1997:93; Van Buuren, 2006: 76). Furthermore it can induce the enrichment of frames. Hence, adding new elements and confronting the actors with different frames, will result in new discussions and might lead to new ways of framing (Van Buuren, 2006). Termeer and Koppenjan (1997: 93) emphasize the benefits of introducing new ideas in order to break through social fixations. When actors distrust particular other actors who are therefore excluded from the process, the introduction of new ideas can help to break through the social fixations. If the new ideas are accepted, the resistance to the actors can be eliminated as well. Involved actors who share both the existing frames and the opposing frames can be used as a mediator in reconciling the contradictory frames.

Introducing new actors. In case of cognitive fixations, new actors which are included in different cognitions could be introduced. By introducing such a 'third party' new frames are introduced in the process which will enhance the cognitive variety within the process and could induce actors to reflect upon their frames (Termeer & Koppenjan, 1997:91). Introducing new actors thus indirectly enhances the cognitive variety. Termeer and Koppenjan (1997: 91) argue however that the acceptance of the new actor by the other actors is a perquisite for the success of this strategy.

Upscaling and downscaling. There are different scales from which a problem could be looked at. By upscaling or downscaling, the scale at which the problem is looked at and the solutions that are sought can be determined. When the problem is looked at from a broad perspective, the problem becomes more complex and can entail different 'sub problems'. This will lead to more abstract formulations of the problem and its possible solutions. When one takes a smaller scale or a more narrow perspective to look at the problem, one could focus on one single aspect of the problem. This reduces the complexity of the problem allowing for more detailed descriptions of the problem and more specific and concrete solutions. Changing the scale in which one views the problem can thus determine how the problem is viewed and how many aspects of the problem are taken into consideration which in turn influence the solutions proposed.

Consolidation of meaningful frames. If there are frames that are shared by all actors and have the potential to link different actors and frames it is important to consolidate them (Van Buuren, 2006: 76). By consolidating the frames, a starting point can be created to build on, which increases the consistency and continuity of the process. Consolidation of frames can be done by making the actors subscribe to a certain frame for example through the signing of a consensus paper. It is of great importance however that the frames which are consolidated are truly shared by all actors to avoid the risk of excluding other existing frames.

Safeguarding interaction. As was emphasized before, interaction is a very important requirement for frame reflection. Hence, interaction is needed to confront actors with other frames, and induce a discussion and reflection of the various frames. Therefore, interaction must be safeguarded. This can be done by both ensuring that there is a confrontation between different frames and ensuring enough time for discussion and debate.

Investing in trust. As was emphasized in the previous paragraph, trust is an important requirement in order for actors to be willing to work together and involve in a process of frame reflection. Therefore it is crucial to make efforts to build trust among the actors (Van Buuren, 2006:76). An important aspect of building trust is making sure that the actors believe that the other actors are willing to work *with and/or for them*, instead of *against* them. Other aspects of building trust are ensuring that the actors believe that their contributions are taken seriously and that they are being involved in the process. Furthermore, in order for the actors to identify their frames and engage themselves in a process of frame reflection and reframing, the actors need to have trust in the (neutrality) of the process management. The process management should therefore invest in the trust they receive from the participants. When the actors do not trust the process management, and efforts to win trust have failed, an independent process manager could be appointed(Van Buuren, 2006: 76-77).

Certifying. A way of inducing frame reflection and reframing among actors with opposing frames, is for the process management to take advantage of their legitimacy and authority to strongly communicate their own frame to the participants (Termeer, 2007:109). In order for certifying to be effective, it is however essential that the actors trust the process management and perceive it to be legitimate and authorative.

2.8 Conceptual model

This chapter has discussed a lot of theories on decision making, frames and frame convergence. This paragraph will outline how the theories and concepts of this chapter are used in this research.

In line with the theories on public deliberation, this research views decision making as an argumentative process in which actors carefully weigh different reasons for a course of action in a specific policy issue. Since the reality is socially constructed, ideas, beliefs and frames play a central role herein. Furthermore, this research adopts the assumption that in order for cooperation between the different actors of the multi-stakeholder platform to be achieved, a minimal consensus on a problem definition needs to be reached. Therefore the frames of the actors need to be converged.

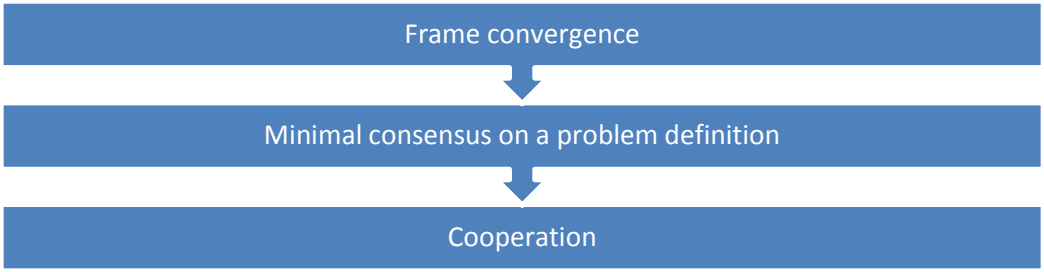


Figure 2.3 Role of frame convergence in achieving cooperation (Adapted from: Sabatier & Jenkins-Smith, 1993; Termeer & Koppenjan, 2004:).

The concept frame is defined in this research as a way of looking at the reality. Furthermore, the frame on the problem definition is divided over seven variables; a frame on the problem, a frame on the cause, a frame on the urgency, a frame on the goal, a frame on the task, a frame on the solution and a frame on the instruments. All of these sub-frames together form the frame of the problem definition. The actors need to find a minimal consensus on these sub-frames to reach a sufficiently shared problem definition in order to take joint action.

In order to be able to identify the similarities and differences in the frames of the participants, cognitive configurations are used in order to divide the actors in a manageable number of units. These cognitive configurations are defined as a group of actors who share the same definitions of reality. These perceptions of reality are influenced by a person's causal assumptions on what will work, and normative beliefs of what is appropriate (Johnston, 1995; Sabatier & Jenkins-Smith, 1993).

Furthermore, in order to be able to make recommendations to the FAO for management actions to further enhance frame convergence, this research analyzes the process of frame convergence. The requirements of a sense of urgency, cognitive and social variety, interaction and trust – as defined in paragraph 2.6-, are assumed to be essential for converging the different frames. The management actions of creating a sense of urgency, preventing frames from being excluded, preventing actors from being excluded, introducing new ideas, introducing new actors, upscaling and down scaling, consolidation of meaningful frames, safeguarding interaction, investing in trust and certifying – as defined in paragraph 2.7- are presumed to enhance the requirements of frame convergence.

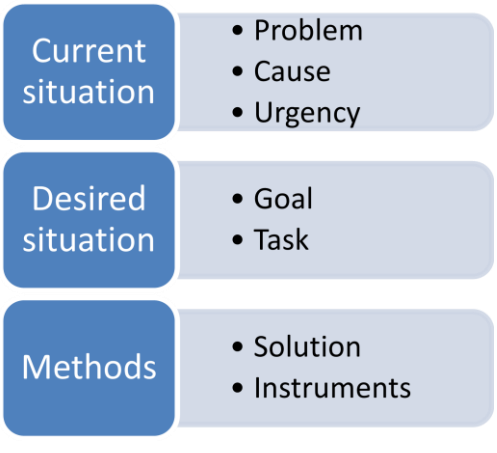


Figure 2.4 Schematic overview of a frame (Termeer & Koppenjan, 1997)

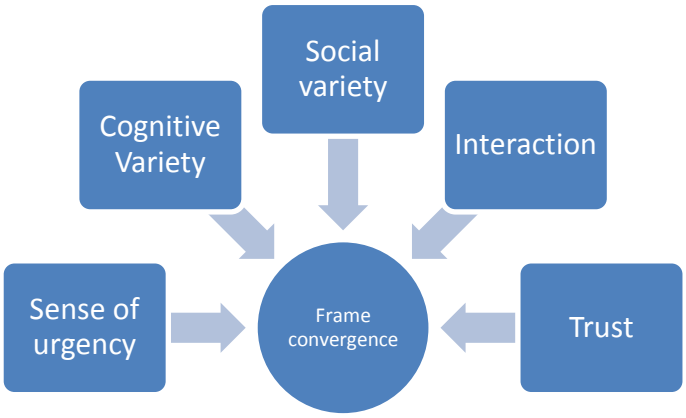


Figure 2.5: Requirements for frame convergence (Adapted from: Koppenjan & Klijn, 2004; Sabatier & Jenkins-Smith, 1993; Termeer, 2006; Termeer & Koppenjan, 1997; Van Buuren, 2006).

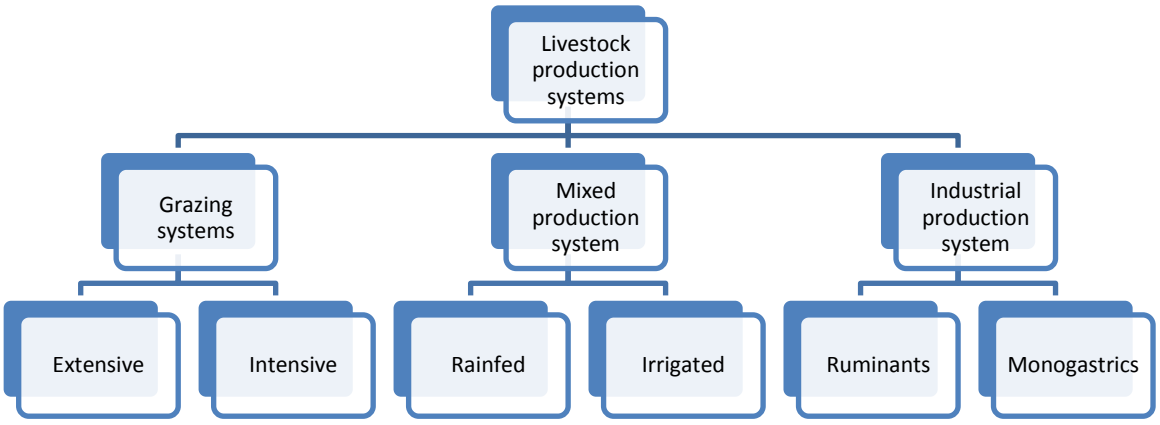
Chapter 3: The livestock sector

3.1 Introduction

The livestock sector is a very heterogeneous sector with a diversity of production systems. The different characteristics of the production systems determine their impact on the environment (FAO, 2009: 54). Therefore it is important to understand which livestock production systems exists and what the consequences of the different systems are for the environment. The characteristics of the production systems on which they can be distinguished are numerous. A few examples are the type of livestock which is kept, the dependence of the system on land, the intensity of the production, the type of water which is used and the agro-ecological zone in which they are found (Steinfeld et al., 2006b: 507). This chapter will start by giving a short overview of the different production systems which can be distinguished in paragraph 3.2. Paragraph 3.3 will discuss the main impacts which the livestock sector has on the environment and paragraph 3.4 will conclude this chapter by outlining the main issues in the livestock – environment debate and the cognitive configurations in this debate.

3.2 Production systems

There are multiple ways to divide the livestock production systems into categories. A first division which can be made is based on the dependence of the system on land, dividing the systems into land based production systems or grazing systems, mixed production systems and landless or industrial production systems. These categories can each be further divided. The grazing systems can be further divided into extensive and intensive production systems. And the mixed systems are divided into systems which are rain fed and systems which are irrigated (FAO, 2009: 25). The industrial production systems can be further divided into systems who produce ruminants livestock products, and systems which produce monogastric livestock products (Steinfeld et al., 2006b: 507).



a

Figure 3.1 Classification of livestock production systems (Adapted from: FAO,2009; (Steinfeld et al., 2006b).

The first distinction between types of production systems can be made based on their dependence on land. The production systems which rely most heavily on land are the so called *grassland-based systems*. Grassland- based systems, or *grazing systems*, are livestock production systems which concentrate mainly on livestock production. These systems principally use grasslands or rangelands to feed the livestock. In some instances crops or fodder are used as complementary feed. The traditional, extensive, grazing systems, are resource driven. Meaning that they make use of locally available resources such as grazing lands, which are often not suitable for crop production or other uses, and crop residues (FAO, 2009: 53). Since the grasslands or rangelands are the primary source of feed, productivity levels of the systems are for a large part determined by the quality of the rangelands. These can vary among the intensity of production, the quantity and seasonal distribution of rainfall and the quality of the soils. The geographical location of a production systems thus play a major role in the productivity levels as well as in the environmental impact of the production system (FAO, 2009: 54-55).

Systems which produce both livestock products and crops are called the *mixed farming systems*. They are defined as "those systems in which more than 10 percent of the dry matter fed to animals comes from crop by-products or stubble, or where more than 10 percent of the total value of production comes from non-livestock farming activities." (SOFA 2009, 26). Because the mixed farming systems produce both crops and livestock products, the animals kept in the systems perform multiple other functions in the systems besides providing livestock products. Cattle is often used for draught power and the manure of the livestock is used as a natural fertilizer for the crop land. On the other hand, crop residues and agro-industrial byproducts are used as feed for the livestock. In this way, the nutrient flows between land and livestock are well integrated (FAO, 2009: 53) which can have a positive environmental impact (Steinfeld de Haan and Black burn , 1998). Since the systems rely on crop production as a source of feed, the agro-ecological zone in which the production system is located is an important factor in both the productivity levels and the environmental impact of the production system.

And finally there are the so called *landless*, or *industrial*, production systems. These production systems rely mainly on feed from other enterprises. Thus on feed which is purchased from other production systems. The systems are defined as "those systems that purchase at least 90 percent of their feed from other enterprises." (FAO, 2009: 27). Because of the physical separation of the livestock from the land that is used to feed them, they are often categorized as 'landless systems'. Nonetheless, they are not independent of land since one third of agricultural cropland is used for the production of animal feed for these systems (FAO, 200: 27). They are most often using one single species, mainly beef cattle, pigs and poultry which are fed on feed like grain and industrial by-products. The largest part of this feed is bought outside of the farms, at national and international markets, as a result of which the direct link to the local resource base is lost. This causes interruptions of the nutrient cycles within the systems and causes depletion of the nutrients at the source, where the nutrients are extracted from the land, vegetation and soils, and causes problems of pollution at the sink where nutrients from animal wastes are disposed of in waterways instead of flow back onto the land (FAO, 2009: 57). The industrial systems are commonly intensive and frequently appear near large urban centers. Since the industrial production systems purchase at least the majority of their feed from other enterprises, this type of production system is less dependent on the climatic conditions of the agro-ecological zone in which they are located (FAO, 2009: 27).

A second criteria on which a distinction can be made is the intensity level of the production system. This divides the production systems into intensive and extensive production systems (FAO, 2009: 25). Since the variation in intensity levels is most significant in grazing systems, figure 3.1 only shows such a division under the grazing systems. However a same divide can be made in the mixed farming systems. The industrial systems can also range in their intensity levels, they are however generally intensive in nature and the variation in intensity levels is less wide than in the other systems (Steinfeld et al., 2006b: 509).

The intensive production systems are characterized by a high level of inputs. Due to the intensive use of technology, these systems are capital intensive and labour extensive. Furthermore, while they keep a high number of animals, intensive systems usually rely on a limited number species both in terms of crop species and breeds of livestock. The species are highly specialized and high yielding (FAO, 2009: 57). The intensive use of technology and inputs such as concentrated feed and high yielding species and breeds, results in an overall higher productivity level of intensive production systems compared to extensive production systems (FAO, 2009: 60). The intensive systems thus have higher outputs per unit of inputs. Furthermore, the productivity levels intensive production systems in both grazing-, mixed farming- and industrial systems, is higher in developed countries than it is in developing countries (Steinfeld et al., 2006b: 509). The capital and technology-intensive characteristics of the industrial systems result in a very dominant position of the developed countries, producing more than half of total global meat production from this system (Steinfeld et al., 2006b: 509).

In contrast to the intensive production systems, extensive production systems are characterized by a low level of (purchased) inputs. These systems often make use of locally available resources such as marginal grazing lands. The systems do not, or to a limited extent, make use of technology. Therefore the systems are capital extensive and labour intensive (FAO, 2009: 25-26). The extensity of inputs generally leads to lower productivity levels of production. Thus, a lower amount of output per unit of input. Furthermore, the extensive production systems generally keep a smaller amount of animals, while the number of different kinds of species and breeds of animals, as well as the types of plant resources used as feed, is higher (FAO, 2009: 57-58).

Extensive grazing systems frequently occur on arid lands which are unfit for crop production. Due to the poor conditions of the land, among other things, the productivity levels of these livestock production systems is very low. This is often aggravated by overgrazing of communal grazing lands, and the large share of feed which is spend on the maintenance of the animals instead of producing products and services. Furthermore, the inefficient use of resources and the need for further expansion into natural resources. This increases the environmental damage per unit of outputs (FAO, 2009, 57-60).

The third characteristic on which the production systems can be distinguished is the type of livestock that they keep. There is a general divide into *monogastric* species such as pigs and poultry, and *ruminant species* such as cattle and sheep (FAO, 2009: 62; Steinfeld et al., 2006b: 507). Figure 3.1 only makes a subdivision in ruminant and monogastric species under the industrial system since they are characterized by usually concentrating on a single species (FAO, 2009: 57). Whereas grazing and mixed farming systems often include different types of species. Nevertheless, the distinction could be made in the other two production systems as well. The environmental impact of the production systems are for a large part dependent on the type of livestock species which is used. Mostly because of the variations in feed conversion rates between the different species and the possibilities for manure management (FAO, 2009: 60-61).

The production of ruminant livestock products requires more concentrated feeds per kg of output compared to the production of monogastric livestock products (FAO, 2009: 60). Furthermore, the manure of ruminants often is less easily dealt with. The higher maintenance requirements for ruminants results in greater environmental impacts of ruminant production (FAO, 2009: 60). Monogastric species require less maintenance. Their conversion rate is higher, as a result of which less feed is needed for a kg of output from monogastric species, and high concentrated feed is not a necessity. Pigs held in traditional mixed farming systems for example are usually fed on wastes and agro-industrial by-products. Thereby reducing wastes and converting them into animal protein. Furthermore, the manure of pigs can be used both as a fertilizer and biogas (FAO, 2009: 61). Poultry is the most efficient feed converter. Although they do depend on feed grains and other high-value feed material when kept in intensive production systems, poultry production is often labelled as the most efficient form of livestock production. Furthermore, poultry manure is easy to manage and is widely used as a fertilizer since it has a high nutrient content (FAO, 2009: 60). The high nutrient content of the manure also allows the use of the manure for ruminant feed. The environmental impacts of poultry are mostly local, but on average the environmental impacts from these systems are less than any other species (FAO, 2009: 60)

And finally the fourth characteristic on which a division in production systems can be made is the use of water. The livestock production systems vary in both the amount of water which is used per animal, and how the requirements for water are met (FAO, 2009: 56).The most clear distinction in water use is the division between systems that are rain fed and systems that are irrigated. Since this distinction is most obvious in mixed farming systems, figure 3.1 only divides the mixed farming systems over systems that are rain fed, and systems that are irrigated. However a similar distinction can be made among the grazing systems. While extensive grazing systems are most commonly rain fed, intensive grazing systems occasionally use irrigation to improve the productivity levels of production. Due to the reliance of industrial systems on bought-in feed, the industrial systems do not use irrigation. Nonetheless, their overall water use is relatively higher than the other systems. This is caused by the high requirements of water for their cooling systems (FAO, 2009: 56-57).

3.3 Environmental impacts

The livestock sector has some major impacts on the environment. A few of the most substantial impacts are the emission of greenhouse gasses, pollution of land, air and water, loss of biodiversity and the (over proportional) use of natural resources such as land, water and nutrients.

Depletion of natural resources: The livestock sector is an inefficient converter of nutrients and is due to inefficient management practices often using more natural resources than necessary (FAO, 2009: 54-57). Examples of these natural resources are the use of land, water, electricity and nutrients. Since the renewal of most of these natural resources cannot keep up with the pace of their demand, they are depleted (FAO, 2009: 54-57).

The type and amount of natural resources used for the production of livestock products depend on the type of production system and the type of livestock products produced (FAO, 2009: 60-63). It is not just a matter of how many resources are used, but rather a matter of how efficient is the use of the resources; the input-output ratio. In other words, how many natural resources are used to produce a kilogram of livestock product. Although the intensive production system make use of a high amount of natural resources, the high productivity levels often lead to an efficient input-output ratio. Whereas the input-output ratio of the extensive systems with their lower productivity levels is often much lower. Nevertheless, especially extensive grazing systems are known for their use of marginal and abundant lands as a source of feed for the animals (FAO, 2009: 58). Furthermore, as was emphasized in the previous paragraph, different livestock species have different convertion rates. Monogastric species, especially poultry, are efficient feed converters (FAO, 2009: 60-61)

Livestock and land: By contributing to the worlds demand for protein, the livestock sector uses 70 percent of the agricultural land available on this planet and covers 30 percent of the global land surface (Steinfeld et al., 2006a; FAO, 2009; World Bank, 2009). This leads to the fact that the livestock sector is the world largest anthropogenic user of land. 26 percent of the ice-free terrestrial surface is used for grazing, while 33 percent is used for the production of feed crop (FAO, 2009: 54-55). Furthermore, expansion of the sector is a major driver of deforestation, especially in Latin America. These land-cover changes have major impacts for the ecosystems of those areas and lead to a reduction of biodiversity and an increased amount of greenhouse gas emissions. In addition, the activities of the livestock sector has resulted in the degradation of land (World Bank, 2009: 22-24). Overgrazing, compaction and erosion created by livestock production are the main drivers for this degradation of land. Approximately 20 percent of the world's pastures and rangelands are degraded to a certain extent. Most of the degraded lands are found in dry areas. This can be explained by the fact that these areas are known for their economically challenged populations for which livestock is the only source of livelihood. A lack of property rights often leads to the use of communal grounds which tend to become overexploited through overgrazing and insufficient management of common resources. The use of land by the sector thus has an impact on the environment, both in terms of using natural resources and in terms of emitting greenhouse gasses (FAO, 2009: 54-56).

Green House gas emissions: The livestock sector accounts for nearly one fifth of the total anthropogenic GHG emissions released into the atmosphere (FAO, 2009; IPCC, 2007). The sector contributes to climate change either directly (e.g. from enteric fermentation) or indirectly (e.g. from feed production activities, deforestation to create new pasture, etc) and produces about 9 percent of all carbon dioxide emissions, 37 percent of methane and 65 percent of nitrous oxide emissions. If these emissions are combined and expressed in CO2 equivalents this adds up to an amount of 18 percent of the total anthropogenic GHG emissions (FAO,2009; 63-64). The main problems along the animal food chain are attributed to land use and the change in land-use, feed production, animal production, manure management and processing, and international transport (FAO,2009; 63-64).

The more intensive systems, especially the industrial systems, in general produce less GHG emissions per kg of meat, milk or eggs than the more extensive systems. This is caused by higher productivity levels per animal, which reduces the relative amount of GHG emitted through enteric fermentation (FAO, 2009: 53). In extensive systems, the output per animal is lower, while they produce about the same amount of Green House gasses. The amount of GHG emissions per kg of output is thus higher. Furthermore, land degradation in extensive grazing systems release a high amount of GHG emissions. The GHG emissions which are indirectly related to the livestock sector, such as emissions from feed production activities and land use and deforestation to create new pasture, are relatively higher for the industrial systems than for the extensive systems. Nevertheless, this does not even out the lower emission gains from the enteric fermentation. Overall the industrial systems thus produce less GHG emissions than extensive systems (FAO, 2009: 61-62).

Pollution: Another environmental impact of the livestock sector is the pollution of air, water and soils. The industrial systems are especially characterized by a high level of pollution due to their open nutrient cycles and a high concentration of animals. The nutrients which are extracted on the place where the feed is grown, is stored in the manure. The high concentration of animals without a relation to the land to dispose the manure of, leads to high amounts of wastes and pollution of ground water and soils (LEAD, 1995: 44). A part of this pollution is counterbalanced by technological equipment, designed for manure storage and disposal. Nevertheless, the level of pollution is generally higher in intensive industrial systems than in the other systems (FAO, 2009: 52).

Extensive systems on the other hand have less impacts of pollution in the way that the manure of the animals is brought back onto the land at which they are grazing. However, whereas technological equipment is used to store manure in the intensive systems, manure and nitrogen of manure produced in extensive systems often leach off in the ground water. This pollutes both the ground and drinking water (FAO, 2009: 60-62).

Biodiversity: Biodiversity can be defined as "the range of animal, plant and microbial species on earth as well as the richness of genes within a given species" (FAO, 2009: 57). Ecosystem diversity and agricultural biodiversity are both aspects of biodiversity and are both affected by the production of livestock products. The agricultural biodiversity includes the domestic animals and plants, as well as non-harvested species that support the provision of food within agro-ecosystems (FAO, 2009: 57). Biodiversity is threatened by a combination of all sorts of environmental degradation. A few examples are land use and land use changes, climate change, invasive alien species, overexploitation and pollution (FAO, 2009: 58). Since the production of livestock contributes to all of the drivers of biodiversity loss, directly or indirectly, it is not simple to unambiguously attribute the contribution of the livestock sector to biodiversity losses (FAO, 2009: 57-59). Nevertheless, there are some clear examples of how the livestock sector is threatening the biodiversity.

There are currently several livestock breeds which are at risk of distinction. This is for a large part induced by the expansion of intensive systems which specialise on a limited number of animal breeds (FAO, 2009: 57). In addition, the reliance of the intensive systems on a limited number of feed crops, and the intensity of the production systems which produce the animal feed, are frequently blamed for the degradation of ecosystems. Although the production methods of the animal feed for intensive systems does have substantial implications for the ecosystem degradation, the intensitity levels of the production on the other hand reduces the pressure to expand crop and pasture areas. Therefore, the intensive land use reduces the loss of non-agricultural biodiversity (FAO, 2009: 57-58). Although the extensive systems use more diverse animal breeds and plant resources as feed, the lower productivity of the systems induces the need to expand on natural habitats. Both intensive and extensive systems thus contribute to the loss of biodiversity but in a different way (FAO, 2009:57-59).

TABLE 13

Major environmental impacts of different production systems[1]

	RUMINANT SPECIES (CATTLE, SHEEP, ETC.)		MONOGASTRICS (PIGS, POULTRY)	
	Extensive grazing[2]	Intensive systems[3]	Traditional systems[4]	Industrial systems
GREENHOUSE GAS EMISSIONS				
CO_2 emissions from land use and land-use change for grazing and feed-crop production	- - -	-	ns	- -
CO_2 emissions from energy and input use	ns	- -	ns	- -
Carbon sequestration in rangelands	+ +	ns	ns	ns
Methane emissions from digestion	- - -	- -	ns	ns
Nitrous oxide from manure	-	- - -	ns	- -
LAND DEGRADATION				
Expansion into natural habitat	- - -	ns	ns	- -
Overgrazing (vegetation change, soil compaction)	- - -	ns	ns	ns
Intensive feed production (soil erosion)	ns	- -	ns	- -
Soil fertilization	+	+	+	+ +
WATER DEPLETION AND POLLUTION				
Alteration of water cycle	- -	-	ns	ns
Pollution with nutrients, pathogens and drug residues	ns	- -	ns	- - -
BIODIVERSITY				
Habitat destruction from feed-crop production and animal wastes	- - -	-	ns	- - -
Habitat pollution from feed-crop production and animal wastes	ns	- -	ns	- - -
Loss of domestic animal genetic diversity	ns	- -	ns	- - -
Ecosystem maintenance	+ +	ns	ns	ns

[1] Observed relationships under common management practices.
[2] Extensive grazing systems for ruminants are predominantly based on natural grasslands in marginal environments.
[3] Intensive systems for ruminants are generally based on improved grasslands (using irrigation, fertilizers, improved varieties and pesticides), with supplementary feeding or confined feeding of grain and silage.
[4] Traditional systems for monogastrics include mixed farming systems or backyard scavenging systems.

Note: ns = not significant.

Source: FAO.

Table 3.1: Overview of different environmental impacts of different production systems (FAO, 2009: 62).

3.4 Conclusion

To conclude, the manner in which the livestock production systems are organized affects the way the systems interact with the natural resource base. The extent and type of environmental impact of livestock production varies between the different production systems. Both intensive and extensive production system cause environmental degradation, but in different ways (FAO, 2009: 60). Therefore it is not just an objective matter of replacing extensive production systems over industrial ones, or replacing industrial systems over extensive ones. What method of production is perceived to be 'the best' is dependent on what problems and causes are perceived to be the most important.

The environmental problems which can be found in the literature are the following:

1. The emission of Greenhouse Gasses,
2. Pollution of air, water and soils,
3. The depletion of natural resources,
4. Deforestation and degradation of land,
5. The loss of biodiversity.

The factors which are attributed to be causing these problems are the

1. Excessive use of resources,
2. The low productivity levels of production of extensive production systems,
3. The open nutrient cycles of intensive industrial production systems,
4. Land use and land use change for the production of livestock products,
5. Land use and land use change for the production of animal feed,
6. The type of livestock products produced and consumed,
7. The amount of livestock products produced and consumed.

3.5 Key topics

The previous paragraphs described the different production systems, the environmental impacts of the livestock sector and the changes which have occurred in the sector in the last few decades. As was emphasized in this chapter, the livestock sector is very heterogeneous including different kinds of production systems which each interact with their natural resource base in a different way. There is therefore not one way of reducing the sector's impact on the environment. The different mitigation strategies will sometimes require trade-offs between the other issues related to the livestock sector such as food security, livelihoods and health. Furthermore, some of the mitigation strategies are in conflict with each other (FAO, 2009: 72).

Based on the knowledge provided in this chapter, and a desk study on the existing points of views on the problems and possible solutions to mitigate the environmental impact of the livestock sector, the following key topics can be identified in the debate on the environmental impacts of the livestock sector:

1. Are the problems concerning the environmental performance of the livestock sector lying in the production side or in the consumption side? Thus, is livestock itself damaging the environment and should therefore the livestock sector be reduced and demand controlled, or is the problem the way in which the livestock sector is organized and should therefore the production be improved? Or is a combination of both strategies required in order to reduce the impact which the sector has on the environment?

2. Should the consumption of livestock products be controlled by reducing the amount of the consumption or by shifting the type of livestock products which are consumed towards more nutrient efficient species with a higher conversion rate?

3. Is the production of livestock products damaging the environment because of low productivity levels (of extensive production systems) or because of the intensity of production of intensive (industrial) production systems and their open nutrient cycles? Thus should we focus on intensification and using technology to obtain for example lower Greenhouse gas emissions per kg of meat, or should we focus on more diversification and closing nutrient cycles?

3.6 Configurations

The three key topics, as identified in the previous paragraph, have led to the identification of 3 main configurations, namely the 'optimist', the 'pessimists', the 'combination-ists'. The actors within these configurations have different frames and points of view regarding the four key topics.

The first configuration are '*the optimists'*. The optimist have a positive frame on the task to improve the environmental performance of the livestock sector; they are thus optimistic about the task. They believe that the environmental problems related to the sector are not solely caused by livestock itself, but rather by the way in which the sector is organised. They believe that the environmental performance of the production of livestock products can be improved and will thereby reduce the environmental impact of the sector.

The second configuration are 'the pessimist'. The pessimist have a negative frame on the task to improve the environmental performance of the livestock sector, and are thus pessimistic about the task. They believe that the environmental problems related to the sector are solely caused by livestock itself. Because they think that livestock itself is the problem, they do not believe that the production of livestock products, the environmental performance of the livestock sector, can be improved. Consequently, restructuring the way in which the livestock sector is organised will not reduce the sectors impact on the environment according to the pessimists. Instead, they see a reduction of consumption and/ or a shift in consumption towards other livestock products which are less damaging for the environment, as the only solution to reduce the impact of the sector on the environment. The actors within this configuration are on a continuum. Ranging from actors who believe that people should not eat or use any livestock products at all, to actors who believe that we

should eat less livestock products, or shift towards livestock products which are less damaging for the environment such as monogastric species.

The third configuration are the combination-ists. This configuration is a combination of the optimists and the pessimists. The actors of this configuration both believe that the production of livestock products can be improved *and* that a reduction or shift in the consumption of livestock products is necessary to reduce the environmental impact of the livestock sector. They thus share the believe of the optimists that the environmental performance of the livestock sector can be reduced, but they also believe that the consumption of livestock products is causing the environmental problems and therefore see the reducing and/or shifting of the consumption as a solution. The vast majority of the actors within this configuration mainly target a reduction of consumption in countries were livestock products are over consumed.

The three main configurations, the optimists, the pessimists and the combination-ists can be further divided into sub configurations based on what exactly they believe is causing the problems of respectively the production and consumption, and what solutions would be effective in order to solve these problems. The optimist can be further divided into 'intensivists', 'extensivists' and 'intensificationists', while the pessimists can be further divided into 'reductionists' and 'demand shifters'.

Intensivists: The intensivists believe that the environmental problems of the livestock sector are caused by the low productivity levels of the extensive production systems. Therefore, they believe that intensifying the production, both by enlarging the scales of production and by intensifying the inputs, new technologies and production management will lead to an improvement of the environmental performance of the production. The intensification of production (specialisation and scale enlargement) is seen as the solution to overcome the environmental impacts of livestock production.

Extensivists: As opposed to the beliefs of the intensivists, the extensivists believe that the main environmental problems are not the productivity levels of the extensive production systems, but rather the intensity of production in industrial production systems and the open nutrient cycles which are associated with these systems. Therefore they believe that the solution must be sought in less intensive production systems, diversification and closing nutrient cycles.

Sustainable intensificationists: The sustainable intensificationists see the depletion of natural resources as the main environmental problem of the production of livestock products. Consequently, they see the main cause of the problem lying in the excessive use of natural resources. A more efficient use of resources and a better management of production is perceived to be the solution. Thus, using less resources to produce the same amount of livestock products.

The reductionists: The reductionists believe that the environmental problems of the livestock sector are livestock, and the production of livestock products, itself. Therefore, reducing the consumption of livestock products through demand management is seen as the most effective solution to the environmental problems related to the livestock sector. The actors within this configuration are on a continuum, ranging from actors who believe that we should not produce and consume livestock products at all, to actors who want to reduce the amount of livestock products

produced and consumed. The latter are mostly targeting to reduce the amount of consumption in countries where livestock products are over consumed.

The demand shifters: Similar to the reductionists, the demand shifters believe that the production of livestock products cannot be improved. Therefore they see demand management as the solution to the environmental problems of the livestock sector. However, while the reductionist emphasize a reduction of demand, the demand shifters emphasize a shift in demand from 'more environmental damaging livestock products' such as ruminant livestock products, towards 'less environmental damaging livestock products such as monogastric products.

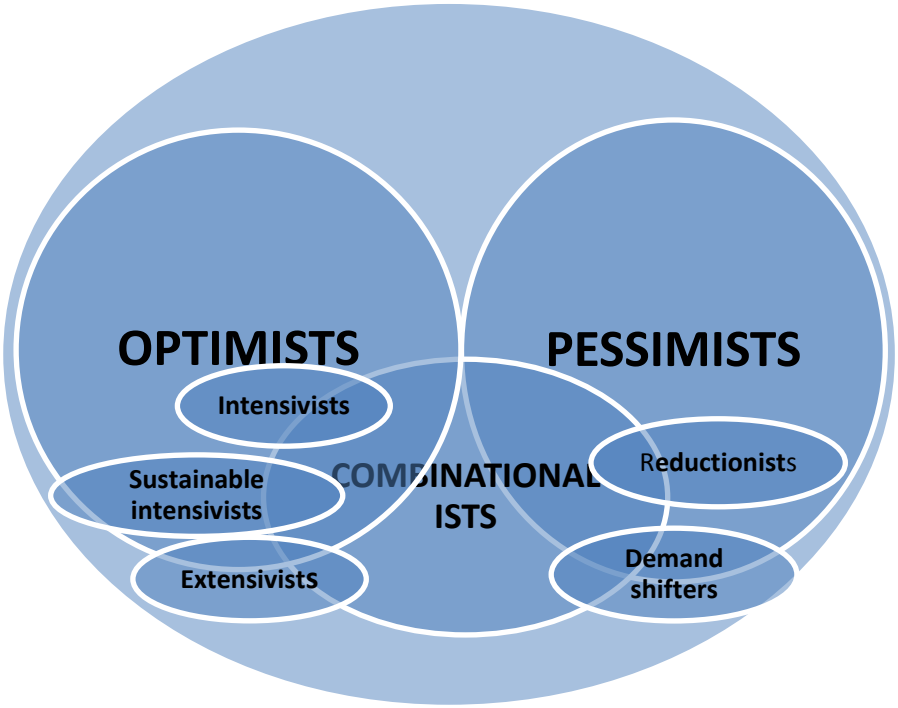


Figure 3.2: Schematic overview of the configurations in the debate on livestock and the environment

These eight configurations which are deducted from the literature will be used to identify the social and cognitive variety in the multi-stakeholder platform and will form the basis of the interview and survey questions. This will be discussed in more detail in the two following chapters.

Chapter 4: Methodology

4.1 Introduction

Based on the theories and the conceptual framework, this thesis will assume that frame convergence will increase the likelihood of international cooperation and thus the success of the multi-stakeholder platform. This thesis will therefore analyse the frames and configurations which exist among the different participants in the multi-stakeholder platform and the process of frame convergence, in order to answer the central question of this thesis: *What can the FAO as coordinator of the multi-stakeholder platform do to achieve a consensus on the problem definition in order to achieve international cooperation for improving the environmental performance of the livestock sector?*

4.2 Research design

The research will consist of three steps. The first step is identifying the main *frames* and *configurations* of frames which the actors hold, and the discrepancies between them. The second step is analysing the *process* of framing; what is done to converge the frames and were the requirements of frame convergence present? And finally, the third step is to make recommendations on what the FAO as a facilitator of the multi-stakeholder platform can do to achieve a consensus on the problem definition.

The specific problem is a complex one, and the negotiations and framing are to a great extent influenced by the context in which they exists. Therefore, this study will be a qualitative one and will use the form of a case study. According to Hakvoort (1996) a case study is an appropriate form for this research because of the complex and contextual interdependency of the variables (Hakvoort, 1996: 132-133). Furthermore, the study will use an interpretative approach since the translation of the empirical findings into a conclusion requires the ascribing of meaning to it. For example, the spoken and written down statements made by actors, as well as the answers given at the survey and the in-depth interviews, have to be interpreted and translated into meaning in order to serve as an answer to the research questions. Such an approach, one in which meaning is given to empirical observations, is described as an interpretative approach (Yanow & Schwartz-Shea, 2006: 3).This calls for the need of a flexible design. Hence, due to the complex nature of the problem and the contextual dependencies of the process of framing, it is impossible to know and operationalize the obstacles and assisting criteria for frame convergence beforehand. Thus, to ensure an analysis which covers as much insights as possible, some room for adding unforeseen findings is required. Moreover, the study will use multiple methods of data collection; content analysis, surveys, in-depth interviews and non-participant observation. This will enable to increase the validity of the interpretations required to translate the findings into meaningful deductions.

4.3 Research strategy

As is said before, this research is both descriptive and prescriptive, and consist of three parts, 1) identifying the frames of the participants in the multi-stakeholder platform and to analyze on what issues they differ, 2) analyzing the process of frame convergence: have the requirements for convergence been met, and what have been done to converge the frames, and 3) making recommendations for further management actions to be taken by the FAO in order to further enhance frame convergence.

The first part of the research will identify the frames which the actors hold and the associated configurations of frames which exist. The frames and the configurations will be identified by making use of a survey which is based on a predefined scheme of configurations, as defined in paragraph 5.3 of the operationalization. The configurations are deducted from the desk study on the key issues and configurations of frames which exist in the wider debate on making the livestock sector more sustainable. The consistency of the data gathered from the survey will be checked by conducting a few in-depth interviews and non-participating observation of the meeting. Once the frames and the discrepancies and similarities in the frames are identified, the presence of the pre-defined cognitive configurations can be analysed by comparing the existing frames to the aspects of the pre-defined cognitive configurations. This will be used to analyse the presence of the requirements for the process of frame convergence.

The second part of the research is concerned with the analysis of the process of frame convergence. An analysis will be made of whether or not the requirements for frame convergence- as identified in the theoretical chapter- were present and what has been already done to achieve frame convergence. In order to do this, in-depth interviews will be conducted with key players in the organisation of the multi-stakeholder platform, complemented with the information on the frames of the process gathered from the survey and the in-depth interviews of the participants of the multi-stakeholder platform.

And finally, by means of looking at the extent to which the requirements for frame convergence were present and comparing what has already been done to the prescribed management actions as identified in the theoretical chapter, the third part will make some recommendations for further management actions to be taken by the FAO in order to enhance frame convergence.

4.4 Case study

Since this research is an empirical study of a particular phenomenon in 'real life', the phenomenon is to a great extent influenced by the context in which it occurs. Therefore there is chosen for the form of a case study. A case study is a suitable form of research to concentrate on a particular case while taking the context of the meetings into consideration and use multiple methods of data collection (Robson, 2002: 178-179). The case which is selected is the development of the Multi-stakeholder platform on Responsible Livestock. This initiative consisted of 3 main meetings; respectively the "Dialogue on Livestock, Food security and Sustainability" held at June 16 2010 as a side event of the

22nd session of the Committee On Agriculture (COAG) of the FAO, "Livestock and Climate Change: Issues and Options" held at November 2 2010 as a side event of the Down 2 Earth Conference in The Hague, and the 'Global Agenda' meeting held at 17-21 of May 2011 in Brasilia. The first two meetings had the purpose of informing the different stakeholders and raising attention to the topic while the aim of the third meeting was to consult and mobilize stakeholder commitment to act towards an improvement of the sector's performance. In other words, to develop and promote the adoption of a Global Agenda of Action for Responsible Livestock Development (" the Global Agenda") (FAO, 2011).

The reason for selecting this particular case to analyse the frames and the process of frame convergence within the efforts of achieving international cooperation on making the livestock sector more sustainable is fourfold. The first reason is its broad involvement of participants which connects scientific researchers and stakeholders from the civil society, to policy makers at a governmental level. An international meeting or conference on the environmental performance of the livestock sector, which discusses the issues and options at a governmental level, is lacking. There is no global meeting which includes all governmental representatives to discuss the environmental problems of the livestock sector and the possible solutions to solve the problem. Livestock is either spawned under discussions on agriculture as an overarching subject or discussed under scientists, ENGOs and environmental activists. The combination of stakeholders in the plaftform makes it an interesting case. Furthermore, most discussions are rather technical and objective rather than normative. The aim of this multi-stakeholder platform initiative is to connect policy makers at a governmental level with scientists and civil society actors in the field and translate these normative discussion into policy. The effort to create political will to take action, and develop a concrete agenda of action therefore makes the initiative an interesting case for my research. Second, the initiative is a good example of decision making in multiple rounds of interaction. This is reflected in the differing aims of the three meetings; informing, raising awareness and gathering political will to take action. The third reason is the extensive documentation of the initiative and the diverse possibilities for data collection. The multiple research reports and publications, minutes and reports of the meetings, the documentation on the presentations held, and the availability of interviewees and audio recordings of the last meeting form a rich source of information to identify the frames and analyse the process of frame convergence. And fourthly, the fact that the initiative is a recent development which is still ungoing at the time that my research was conducted makes it more interesting to make recommendations. Hence, the success of the platform might be influenced by altering the strategies for frame convergence. Furthermore, the fact that the initiative is still ungoing made it easier to arrange audio recordings of the meeting and conduct both a survey and interviews.

4.5 Data collection

This research has used multiple methods of data collection- a survey, in-depth interviews, content analysis and non-participatory observation- to collect the data which is needed to answer the main- and sub questions. This data triangulation, the use of multiple methods for the collection of the data, is beneficial to the validity of the study. A point which will be discussed in more detail in the next paragraph. This paragraph will discuss the four research instruments which are used to collect the data.

4.5.1 Survey

In order to identify the frames which exist among the different participants in the multi-stakeholder platform, a survey was sent to all of the 65 participants of the meeting in Brasilia. The questions in the survey were twofold, containing questions regarding the frames which the participants hold on the problem, its causes, the goal or desired situation and the solutions and instruments[2], and questions regarding the process. The questions on the frames in the survey are based on the desk study on the existing frames and configurations. This desk study contained of in-depth interviews, a content analysis of both previous research and literature and a content analysis of the presentations held at the first two meetings of the multi-stakeholder platform initiative.

The survey started with questions regarding general information of the respondents like their name, the organisation which they were representing and what type of organisation it is. After that open questions followed on what they think the problem, causes, goal and solutions are. Each of these open questions was followed by a question in which they needed to rank several pre-given answers in order of how important they are. Furthermore, statements were included which corresponded with the frames and configurations as identified in the operationalization. A five-point scale was used, with the answers ranging from 'I do not agree at all' to 'I totally agree', to measure the intensity in which the actors agreed with the statements. These answers were used in order to classify the respondents in a certain configuration.

The survey was sent by email and constructed and processed with an online survey tool. With 20 respondents, the response rate was 33%. The analysis of the data was descriptive since the population was too small to obtain sufficient power for more statistical analysis. The answers were coded based on the operationalization of the concepts, as identified in the next chapter.

4.5.2 In-depth interviews

Three kinds of interviews were conducted; exploratory interviews to get a better understanding of the issue and identify the pre-specified categories of frames, in-depth interviews with key players of the secretariat of the meetings in order to obtain more knowledge on the process of frame convergence and the management actions which have been taken, and in-depth interviews with key players of each configuration to check if the frames as identified in the survey are correct. In total 13 interviews were conducted. Five exploratory interviews which formed a part of the desk study, two interviews with key players of the secretariat of the meeting, and six interviews with actors who could be classified to a configuration. A full list of interviewees is given in the literature list.

All of the interviews which were conducted were in-depth and semi-structured by using a topic list. All interviews, per kind of interview, were based on the same topic list which contained open questions. In order to analyse the data, the interviews were recorded and transcripts were made which in turn were coded by using a coding scheme. This coding scheme is based on the variables and indicators as defined in the operationalization.

[2] A full list of the frames is given in the operationalisation of the frames in the next chapter.

The interviewees were carefully selected and contained key figures of all the different types of participants –representatives of the involved governments, NGO's, international institutions, private sector and scientists- in order to reflect the broad presentation of involved stakeholders. By using semi-structured interviews, the questions could be adjusted, when necessary, to be able to anticipate on different situations and in order to allow the interviewees to add additional information when they think it is relevant (Robson, 2002: 270). Some interviews were conducted face to face, while others were conducted over telephone. Unfortunately it was not possible to conduct all of the interviews face to face because of the geographical spreading of the interviewees.

4.5.3 Content analysis

Van Thiel proclaims that content analysis is an appropriate method for determining facts and conceptions (Van Thiel, 2007: 123). Therefore this method is appropriate for this research. Three kinds of content analysis were conducted. The first one concerned the desk study to identify the general frames which exist in the wider debate on the environmental problems of the livestock sector. A content analysis was made of existing literature on the issue of sustainable livestock such as multiple FAO publications and a global consultation on 'Balancing livestock environment and human needs' conducted in 1997 in preparation of the International Conference on Livestock and the Environment. These documents were each scanned to identify different points of view and different frames on the environmental problem of the livestock sector, it's causes, the goal or desired situation, the solution and the instruments to achieve this solution. These frames which were in turn mapped and categorized and resulted in the pre-specified answer categories of the survey.

The second content analysis concerned the identification of the frames of the participants of the multi-stakeholder platform. Therefore official documents of the meetings were analysed by using the coding scheme of the frames as identified in the operationalization. Documents which were analysed were the presentations held at the meetings, key note papers and scientific publications which were underlying the meetings and official reports and minutes of the meetings. And finally the third content analysis concerned the identification of the management actions which were taken by the secretariat of the meetings. Documents which were analysed included the participant lists of the meetings to identify the selection of participants, the minutes and reports of the meetings and the keynote speeches.

4.5.4 Non-participant observation

The third research instrument which was used is non-participant observation. This was done by listening to the audio recordings of the meeting in Brasilia. This form of observation has the advantage that it is a 'non-reactive' research method. Meaning that the actors who are the units of analysis do not know that they are being analysed and thus cannot change their behaviour accordingly (Robson, 2002 :310). The audio recordings were used as a second check on the validity of the identified frames. Notes were made of the relevant statements of the participants on one of the frames and compared to the answers given in the surveys. Furthermore, notes were made of the 'evidence' of management actions taken by the secretariat. For example the statements made about the openness of the process and the certifying of particular frames.

4.6 Reliability and validity

Although this thesis uncovered some useful insights in the existing frames among the stakeholders in the multi-stakeholder platform and the process of reaching a consensus on a common problem definition, the research is not without limitations. This paragraph will discuss respectively the reliability and the validity of the research and the weaknesses herein.

4.6.1 Reliability

The reliability of the study is dependent on the accuracy and consistency of the measurement (Van Thiel, 2007: 55). The accuracy of this research is highly dependent on the use of the research instruments. The survey and the in-depth interviews are the most important factors in this respect. In order to enhance the accuracy of the interviews, a topic list was used based on the operationalization of the variables. This ensured that the same sort of questions were asked to all the interviewees while still maintaining flexibility to make little adjustments when necessary. The open questions of the interviews enabled the interviewees to add information which they felt was important and thereby reducing the chance of missing out on crucial information. Furthermore, transcripts were made from the recordings of the interviews which enabled to identify the frames as accurate as possible.

An effort to ensure the accuracy of the survey was the made in the form of the desk study to identify the frames which formed the basis of the questions. Hence, the information obtained from the survey are constrained by the questions asked. The preliminary research helped safeguarding the quality of the questions. In addition, the questions on the problem, its causes and the possible solutions started with an open questions first, allowing the participants to answer freely without being constrained by the categorised answers which followed the open questions. This reduced the constraints of the categorisation of the answer options. Furthermore, the survey included several open boxes in which the participants could make comments or add some additional information. This reduced the chance of missing out on important aspects of the frames and enabled the respondents to make additional comments and add elements which they felt were important.

In order to make sure that the survey led to the required information, steps have been taken to ensure the quality and precision of the survey questions. Special attention was paid to the nuance of language especially since the questions were formulated in English which is not the mother language of both the researcher and most of the respondents. The questions were subjected to peer review to check the logic and clarity of the questions as well as checked on their grammatical and orthographic correctness by a native speaking English teacher.

Since this study is a 'real world study', it is difficult to measure the consistency of the research, whether repeating the research would lead to the same results (Robson, 2002: 93). Hence, it is impossible to re-create identical circumstances in order to replicate the study (Robson, 2002: 168). However, some measures can be taken in order to improve the consistency of the study. In this research, the recordings of the interviews and their transcripts were used to identify the frames as accurate as possible and to avoid incompleteness of the data. Coding schemes, based on the operationalization of the concepts, were used to categorise the diversity of frames into configurations. The data obtained from the survey were also categorised by means of using the operationalization of the concepts.

4.6.2 Validity

The validity of this research consists of two elements; the internal validity and the external validity. The internal validity concerns whether or not the research actually measures what is said to be measured (Van Thiel, 2007: 56). This research analyses frames, social constructs of reality. In order to do this, the information obtained from the interviews, survey and data analysis need to be interpreted to identify the frames and configurations. Therefore, the possibility of misinterpretation of information forms the first implication to the internal validity of this research. In order to reduce this threat, checks and balances were applied by using multiple research instruments; the survey, in-depth interviews, content analysis and non-participating observance. The use of these multiple instruments has led to a broad insight in the frames of the participants. Robson (2002) argues that the most important threat to interpreting data is "imposing a framework or meaning on what is happening rather than this occurring or emerging from what you learn during your involvement with the setting" (Robson, 2002: 171). One way of dealing with this pitfall were the open questions in the survey before asking the respondents to rank order the categorised answer options. Furthermore, open comment fields in the survey were added to enable the respondents to make some additional comments. By further following the recommendations of Robson (2002), the presupposed categorisations were checked on their appropriateness and correctness during the whole research and have been modified where necessary (Robson, 2002: 171).

Another limitation to the internal validity of this research is similar to the general critique on reconstructing frames, that the interviewees and respondents of a survey can give answers which they think are desired or political correct. The political character of the multi-stakeholder platform can induce this tendency to give 'desired answers'. This threat is tried to overcome by making use of non-participating observance in the form of listening to the audio recordings of the last meeting, which were recorded prior to the survey, as a means to check the consistency of the answers given in the survey and the interviews compared to the stand points taken in the meeting. This decreases the

threat of incorrect answers since this method is a 'non-reactive' research method. Meaning that the actors who are the units of analysis do not know that they are being analysed and thus cannot change their behaviour accordingly (Robson, 2002: 310). Furthermore, the chance of desired answers is reduced by the risk for the stakeholders to lose their credibility. Hence, there are reports made of the meetings and the stakeholders would not be taken serious anymore if they would repeatedly change their statements and points of view during the meetings and between the different meetings.

Another threat to the internal validity is the researchers bias. This is a general limitation of research, and of qualitative and interpretative research in particular (Robson, 2002: 311). Hence, the conclusions and findings are dependent on a reconstruction of frames and 'the reality'. As is emphasized throughout this thesis, the construction of reality is influenced by one's own norms, beliefs, culture, frames and stand points. The danger of researcher-bias is taken into consideration throughout the research. Efforts have been made to be as objective as possible and avoid any preconceived ideas while formulating the survey and interview questions, collecting and interpreting the data and formulating the conclusions and recommendations. However, no research is entirely bias-free. Therefore it is a limitation of this study.

And finally, both the survey and a part of the interviews were conducted after the last meeting in Brasilia. Consequently the frames are constructed after the meeting and do not necessarily have to reflect the frames of the participants *during* the meeting since learning could have already occurred. However, the multi-stakeholder platform is an ungoing process and the aim of this thesis is to identify the existing frames and analyse the process of convergence so far, in order to make recommendations for the following steps of the initiative. Therefore it does not have to be a limitation that the identified frames and configurations are not a reflection of the frames during the meeting, since the actors need to further specify their points of view and align the agreed upon meanings with possible new stakeholders joining the initiative.

4.6.3 External validity

The external validity or generalizability is concerned with the question of whether the findings of the study are more generally applicable outside the specifics of the situation studied (Robson, 2002: 93). This study focuses on the frames and configurations which exist among the stakeholders involved in the multi-stakeholder platform at the moment this study was conducted. However, it is tried to look at the frames and configurations in the wider debate on the environmental impacts of the livestock sector. The preliminary research which was underlying the survey questions identified a diversity of frames and configurations. Not all of these were found among the stakeholders involved in the platform. New actors which get involved in a later stage might have other frames and bring in new cognitive configurations.

To conclude, the efforts to reduce the threats to the reliability of this research focused on taking measures to ensure the accuracy of both the questions asked in the survey and interviews and the systematic analysis of the data. While the efforts to reduce the threats to the validity of the study were mainly in the form of the triangulation of data and methods.

Chapter 5: Operationalization

5.1 Introduction

Chapter two described the importance of frame convergence achieving international cooperation. The aim of this research is to analyze how the frames of the diverse actors within the multi-stakeholder platform on responsible livestock can be converged to achieve a minimal consensus on a problem definition in order to take joint action. Before this can be done, the concepts of frames, configurations, and the requirements for frame convergence need to be clarified and operationalized.

5.2 Frames

A frame is a way of looking at reality; a cognitive and social construct of reality. The concept 'frame' is divided over seven variables. A schematic overview of the concept frame and its variables is given in table 4.1.

Table 5.1: Concept of a frame

Task	• Improving the environmental performance of the livestock sector
Urgency	• How urgent is improving the environmental performance of the livestock sector? • What priority has improving the environmental aspect of the livestock sector?
Problem	• What is the undesired situation?
Cause	• What factors are creating the undesired situation?
Goal	• What is the desired situation?
Solution	• How can the desired situation be achieved?
Instruments	• What instruments can be used to achieve the desired situation?

The frame on the *task* is defined in this research as how the participants perceive the task on improving the environmental performance of the livestock sector. The overall task of the platform is to make the livestock sector more responsible. This definition could include the aspects of food security, poverty reduction, improving the environment and public health. However, prior to the first consultation in Brasilia, the members of the dialogue group had decided to focus on the environmental aspects, at least in the initial phase. Since all of the members of the dialogue group subscribed to this initial task, the task is defined in this research as improving the environmental performance of the livestock sector.

The frame on the urgency is defined in this research as the perception of the participants that the environmental impact of the livestock sector is a problem, that this problem is urgent and has a high priority, and that cooperation is necessary in order to solve the problem.

The frame on the *problem* in this research is defined as whether or not the actors perceive the environmental performance of the livestock sector to be an undesired situation, and what aspects of the situation are perceived to be undesired. Based on the preliminary research, this research will analyse the frames on the problem divided over the following six aspects of the problem: greenhouse gasses emissions, pollution, depletion of natural resources, land use, deforestation and biodiversity.

The frame on the *cause* is defined in this research as the factors or events which are perceived to be leading to the undesired situation. Based on the preliminary research, this research analyses the frame on the cause divided over the following seven causes: the open nutrient cycles of intensive industrial production systems , the excessive use of resources, the low productivity levels of production of extensive production systems, land use and land use change for the production of livestock products, land use and land use change for the production of animal feed, the high amount of livestock products consumed, and the type of livestock products consumed.

The frame on the *goal* is defined in this research as what is perceived to be the desired situation. Based on the preliminary research, this thesis analyses the frame on the goal based on the two goals; Improving the environment by reducing the environmental impact of the production of livestock products; thus improving the production. And improving the environment by controlling the demand of livestock products; thus changing the consumption of livestock products.

And the frame on the *solution* is defined in this research as the actions which are perceived to be both appropriate and effective to achieve the desired situation. Based on the preliminary research, this research analyses the frame on the solution divided over the following five solutions: closing the nutrient cycles of livestock production systems, improving the productivity levels of the production of livestock products, improving resource use efficiency, reducing the amount of livestock products consumed, and changing the kind of livestock products consumed.

And finally, the frame on the *instruments* is defined in this research as the instruments which are perceived to be both appropriate and effective in achieving the desired situation. Based on the preliminary research, this research analyses the frame on the instruments divided over the following six instruments: technology, regulations, voluntary standards, certifications, economic incentives and raising awareness.

Table 5.2: Operationalisation Frames

Sub-frame	Value	Indicator
Task	Positive	The participant indicates that he or she believes the environmental performance of the livestock sector can be improved
	Negative	The participant indicates that he or she does not believe the environmental performance of the livestock sector can be improved
Urgency	Positive	The participant indicates that he or she thinks improving the environmental performance of the livestock sector is an urgent issue.
	Negative	The participant indicates that he or she does not think improving the environmental performance of the livestock sector is an urgent issue.
Problem	Livestock	The participant indicates that he or she believes livestock is causing the environmental degradation.
	Livestock management	The participant indicates that he or she believes the way the livestock sector is organised is causing the environmental degradation
	GHG emissions	The participant indicates that GHG emissions are the most important problem of the production of livestock products
	Pollution	The participant indicates that pollution is the most important problem of the production of livestock products
	Resource depletion	The participant indicates that resource depletion is the most important problem of the production of livestock products
	Land use and land use change	The participant indicates that land use and land use change is the most important problem of the production of livestock products
Cause	**Production**	The participant indicates that the cause of the problem lies in the production side
	Open nutrient cycles	The participant indicates that the intensity of industrial production systems with their open nutrient cycles is the main cause of the environmental impact of the livestock sector
	Over use of resources	The participant indicates that the over proportional use of resources is the main cause of the environmental impact of the livestock sector
	Low productivity level	The participant indicates that the low productivity levels of production are the main cause of the environmental impact of the livestock sector
	Land use and land use change	The participant indicates that land use and land use change is the main cause of the environmental impact of the livestock sector
	Consumption	The participant indicates that the cause of the problem lies in the consumption side
	Amount of demand for animal products	The participant indicates that the amount of demand for animal products is the cause of the environmental impact of the livestock sector
	Demand for 'wrong kind of animal products'	The participant indicates that the kind of demand for animal products is the cause of the environmental impact of the livestock sector
Goal	Improving production	The participant indicates that improving the production is the goal of the multi-stakeholder platform
	Controlling demand	The participant indicates that improving the production is the goal of the multi-stakeholder platform

Solution	**Improving production**	The participant indicates that the improvement of the production is the main solution to solve the problem
	Closing nutrient cycles	The participant indicates that closing of nutrient cycles is the main solution to solve the problem
	Improving productivity levels	The participant indicates that the improvement of the productivity levels of production is the main solution
	Improving resource use efficiency	The participant indicates that the more efficient use of resources is the main solution
	Demand management	The participant indicates that changing consumption is the main solution to solve the problem
	Reduction of the amount of livestock products consumed	The participant indicates that reducing consumption is the main solution to solve the problem
	Shifts in the kinds of livestock products consumed	The participant indicates that shifting the demand towards less environmentally damaging livestock products is the main solution to solve the problem
Instruments	Technology	The participant indicates that technology is the most appropriate instrument to solve the problem
	Regulations	The participant indicates that regulations are the most appropriate instruments to solve the problem
	Voluntary standards	The participant indicates that voluntary standards are the most appropriate instruments to solve the problem
	Certifications	The participant indicates that certifications are the most appropriate instruments to solve the problem
	Economic incentives	The participant indicates that economic incentives are the most appropriate instruments to solve the problem
	Raising awareness	The participant indicates that raising awareness is the most appropriate instrument to solve the problem

5.3 Configurations

Because there is a great amount of actors involved in the multi-stakeholder platform, this research will make use of cognitive configurations to aggregate the actors into a manageable number of units. Hence, it is impossible to identify all the differences in frames if the units of analysis are the participants in the multi-stakeholder platform. While acknowledging the importance of social configurations, this research will only analyse the cognitive configurations since identifying all the interaction patterns between the different actors goes beyond the length and resources available for this thesis.

A cognitive configuration is defined as a group of actors who share the same definitions of reality. As was emphasized in the theoretical chapter, these perceptions of reality are influenced by a person's causal assumptions on what will work, and normative beliefs of what is appropriate (Johnston, 1995; Sabatier & Jenkins-Smith, 1993). The social aspect of framing, the interaction between the different stakeholders, will be taken into account in the requirements and the management actions.

The presence of the different configurations, as identified in the desk study, are distinguished by means of the answers of the participants on the different aspects of their frame on the problem definition in the survey in some cases complemented with information from the interviews. The survey questions and the pre-defined configurations are based on the desk study on the existing configurations in the wider debate on livestock and the environment. This research identified the 'optimist', the 'pessimist' and the 'combinationists' as the three main configurations. The main configurations are further divided into sub configurations. The optimist are further divided into 'intensivists', 'extensivists' and 'intensificationists', while the pessimists are further divided into 'reductionists' and 'demand shifters'.

Table 5.3: Operationalisation configurations

Configuration	Sub-configuration	Survey questions
Optimists		-The problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself. -The environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products. -The environmental performance of the livestock sector (the production of livestock products) can be improved.
	Intensifists	-The main cause is the low productivity levels of production of extensive production systems -The most effective solution is improving the productivity levels of the production of livestock products
	Extensifists	- The main cause is the open nutrient cycles of intensive industrial production systems - The most effective solution is closing the nutrient cycles of livestock production systems
	Sustainable intensificationists	-The main problem is the depletion of natural resources - The main cause is the excessive use of resources - The most effective solution is the improvement of resource use efficiency
Pessimists		-The problem of the negative environmental impact of the livestock sector is livestock itself, changing or restructuring the way the sector is organized will not solve the environmental problems related to the sector. -The environmental performance of the livestock sector (the production of livestock products) cannot be improved. -The environmental problems related to the livestock sector are caused by the high amount of consumption of livestock products. -Controlling the demand of livestock products could be effective for solving the environmental problems related to the livestock sector.
	Reductionists	-The main cause of the environmental problems of the livestock sector is the high amount of livestock products consumed -The most effective solutions to solve the environmental problems of the livestock sector is reducing the amount of livestock products consumed
	Demand shifters	-The main cause of the environmental problems of the livestock sector is the type of livestock products consumed -The most effective solutions to solve the environmental problems of the livestock sector is changing the kind of livestock products consumed
Combinationalists		-The problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself. -The environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products. -The environmental performance of the livestock sector (the production of livestock products) can be improved. -The environmental problems related to the livestock sector are caused by the high amount of consumption of livestock products. -Controlling the demand of livestock products could be effective for solving the environmental problems related to the livestock sector. -Reducing the environmental impact of the livestock sector requires both improving the production and changing the consumption

5.4 Process of framing

The process of framing is dependent on three variables: 1) frame reflection, 2) frame convergence and 3) the improvement and enrichment of frames. Since the multi-stakeholder platform is in its beginning stage, it is not possible to evaluate the success of these stages. Therefore the focus of this research will be on the existence of the required conditions for frame convergence in order to achieve a consensus on a problem definition, and the management actions to ensure these conditions. In this research a consensus on the problem definition is defined as a perception of the problem which is sufficiently shared by all participants in order to take action.

5.4.1 Requirements

The previous chapter identified a sense of urgency, cognitive variety, social variety, dialogue and interaction and mutual trust among the participants as the required conditions for frame convergence.

The first requirement is a *sense of urgency*. A sense of urgency in this study is defined as the perception of the participants that the environmental impact of the livestock sector is a problem, that resolving this problem is urgent and has a high priority, and that joint action is necessary in order to reduce the environmental impacts of the livestock sector. The following indicators are used to analyse to what extent the process has met the requirement of a sense of urgency:

- The participants indicate that the environmental impacts of the current livestock sector are a problem.
- The participants indicate that improving the environmental performance of the livestock sector is an urgent issue.
- The participants indicate that improving the environmental performance of the livestock sector has a high priority.
- The participants indicate that international cooperation is necessary for improving the environmental performance of the livestock sector.

The second requirement is *cognitive variety*. This research will define cognitive variety as the existence of multiple cognitions among the actors of the multi-stakeholder platform and the inclusion of these cognitions into the debate. The following indicators are used to analyse to what extent the process has met the requirement of cognitive variety:

- All, or multiple, of the pre-defined configurations are found among the participants
- The actors indicate that all the relevant points of view were present in the multi-stakeholder platform

The third requirement is *social variety*. Social variety in this research is defined as the existence of different kinds of participants with different views on the problem and its possible solutions. It thus means that all, or at least different kinds of stakeholders, need to be represented in the multi-stakeholder platform. The different types of stakeholders are the consumers, the producers (or private sector), governments, international institutions, (E)NGO's and scientists or research institutes. Furthermore, there need to be actors involved with all kinds of cognitions. The following indicators are used to analyse to what extent the process has met the requirement of social variety:

- Actors from all, or multiple, of the pre-defined cognitive configurations are found among the participants
- The different types of stakeholders are present at the meetings of the multi-stakeholder platform
- The actors indicate that all relevant stakeholders were present in the multi-stakeholder platform

The fourth requirement is *interaction*. Interaction is defined in this research as the exchange of views in discussion and debate in which different frames are discussed and reflected upon. the following indicators are used to analyse the extent to which the process has met the requirement of interaction:

- The actors indicate that there was enough time for dialogue and interaction
- The actors indicate that they felt comfortable enough among the other participants to identify and reflect upon their frames

The fifth and last requirement is *Trust*. Mutual trust in this research is divided over the trust between the different participants, and the trust of the participants in the neutral position of the FAO. The first is defined as a situation in which the actors believe that the other actors are willing to help them or work with them, instead of against them, and take them serious. And the second one is defined as the perception of the participants that the FAO is a neutral facilitator of the process. The following indicators are used to analyse the extent to which the process has met the requirement of trust:

- The actors indicate that their contributions to the debate were taken seriously,
- The actors indicate that their points of view are reflected in the outcome of the conference,
- The actors indicate that they felt free enough to identify their own frames and reflect upon them,
- The actors indicate to trust the FAO to be a neutral and appropriate agency to be coordinating the multi-stakeholder platform.

5.4.2 Management actions

The theoretical chapter outlined a few management actions which are proposed in the literature in order to stimulate frame convergence. In order to be able to use these proposed management actions to make useful recommendations to the FAO however, these interventions need to be specified to the specific situation of the multi-stakeholder platform.

Creating a sense of urgency. A sense of urgency in this study is defined as the perception of the participants that the environmental impact of the livestock sector is a problem, that resolving this problem is urgent and has a high priority, and that joint action is necessary in order to reduce the environmental impacts of the livestock sector. Therefore, the management action of creating a sense of urgency is defined as all actions taken to increase the perception of the participants that the environmental impact of the livestock sector is a problem, that resolving this problem is urgent and

has a high priority, and that joint action is necessary in order to reduce the environmental impacts of the livestock sector. The FAO could do this by communicating the severity of the environmental impact of the livestock sector and emphasize the importance of international cooperation within the platform to reduce the negative environmental impacts by improving the environmental performance of the livestock sector.

Prevent frames from being excluded. The theory prescribes that the process should be open to all existing frames and should not exclude particular existing frames. The FAO should thus make sure that the process is open and inclusive, meaning that conflicting frames which might perceived to be negative and counterproductive should be included as well. This research therefore defines the prevention of exclusion of frames, as all actions taken to ensure the inclusion of all frames. Examples of such actions are ensuring that all frames are included in the participant selection and making sure that every frame is heard and discussed in the process.

Prevention of the exclusion of actors. According to the theory, the process should include all actors and should not systematically exclude actors from the process since this could lead to both social and cognitive fixations. Therefore, the FAO should prevent the exclusion of actors with opposing or contradictory frames and should keep the involved actors engaged in the process. This research therefore defines the prevention of exclusion of frames, as all actions taken to prevent the exclusion of actors with opposing frames and to keep the involved actors engaged.

Introducing new ideas. The theory described the introduction of new ideas as a management action in order to create cognitive variety and induce frame reflection and enrichment. A new idea is defined in this research as a new way of looking at and describing the problem, a new solution or new knowledge. The management action of introducing new ideas is therefore defined in this research as introducing new way of looking at and describing the problem, a new solution or new knowledge. The FAO could introduce new ideas through publications, issues and options papers or presentations at the meetings. It is of great importance that these new frames are clearly communicated to the stakeholders involved in the platform.

Introducing new actors. The theory described the introduction of new actors as a management action in order to break through cognitive fixations by creating cognitive variety in the process and induce actors to reflect upon their frames. A new actor is defined in this research as an actor which has not been involved in the process and has different interests, frames or is involved in a different configuration. The management action of introducing new actors is therefore defined in this research as introducing actors which have not been involved in the platform and has different interests, frames or is involved in a different configuration.

Upscaling and downscaling. Upscaling and downscaling is defined in this research as determining the scale at which the problem is looked at and at which solutions are sought. As is emphasized in the previous chapters, the problems related to the livestock sector are complex. It combines several issues such as livelihoods, food security, poverty reduction, health and the environment. Furthermore, the problems could be viewed from a local, national, regional or global perspective. There are thus two different levels at which upscaling and downscaling can be done. The first level is concerned with the scope; are the problems viewed from a broad perspective including all aspects of the livestock sector or from a narrow perspective focusing on just one perspective. And the second level is the geographical scale; are the problems looked at from a local, national regional or local

scale. The choice which the FAO makes to upscale or downscale determines the number and type of problems that could be identified and influences the solutions that can be proposed. At the first level, the FAO could decides to upscale and broadening the scope of the platform by including all aspects of the livestock sector which will lead to a higher abstraction level. Or they could downscale and reduce the complexity of the problem by focussing on one single aspect of the problem. This will increase the concreteness of the problem definition and will lead to the formulation of more specific solutions. At the second level, the FAO could chose to upscale by taking a global perspective, and thus discuss the general problems on a global scale instead of focusing on region or country specific problems. When they choose to downscale however, by looking at the problems at a local national or regional level, more specific problems will be discussed and the solutions will be more concrete.

Consolidation of meaningful frames. Meaningful frames are those frames which are shared by all actors and have the potential to link different actors and frames towards a shared problem definition and solution. Therefore the consolidation of meaningful frames is defined in this research as fixating agreed upon and shared frames as a starting point to build further discussion on. The FAO can consolidate these meaningful frames by ensuring that the participants of the platform subscribe to, and sign, the Brasilia Consensus and/or new consensus documents.

Safeguarding interaction. Safeguarding interaction is defined in this research as the facilitation of interaction in which different frames are discussed and reflected upon. Actions which the FAO could take to safeguard interactions include organising confrontation between actors with different frames and ensuring enough time for interaction.

Investing in mutual trust. As is said before in the previous paragraph, trust is considered in this research to compose of the trust between the different actors on the one hand, and the trust of the actors in the FAO on the other. Therefore, investing in mutual trust in this research concerns all actions taken by the FAO to increase both the mutual trust between the different participants, and the trust of the participants in the neutral position of the FAO as a facilitator of the platform. Examples of actions which the FAO could take to build mutual trust between the actors are making sure that the actors believe that the other actors are willing to work *with and/or for them*, instead of *against* them and ensuring that the actors believe that their contributions are taken seriously. Examples of what the FAO could do to build the trust in their neutral position are making sure that the actors feel that they are being involved in the process, making sure that the actors feel that the FAO is not trying to guide towards certain problem definitions and solutions, and making sure that the actors perceive the FAO as independent and neutral in facilitating the platform regardless of their funding from one of the countries. When the FAO does not succeed to convince the actors from its neutral position, the FAO could appoint an independent process manager to coordinate the meetings.

Certifying. Certifying is defined in this research as the use of FAO's legitimacy and authority to strongly communicate its own frame to the participants of the platform. Certifying can help to induce actors with opposing frames to reframe. However, the FAO has to be very careful to do this because it could also be seen by the actors as a way for the FAO to impose their own ideas and agenda on the platform.

Chapter 6: The multi-stakeholder platform on Responsible Livestock

6.1 Brief history of the multi-stakeholder platform initiative

At the end of 2009, the FAO published the State of Food and Agriculture report, *Livestock in the balance*. This report aimed to give an outline of the current situation of the livestock sector in the world and formulated policy options to respond to the challenges which the sector is facing. The report consisted of 3 main topics knowingly: 1) Livestock, food security and poverty reduction, 2) Livestock and the environment, and 3) Livestock and human and animal health (FAO, 2009). The Livestock and the environment part of the report builds on FAO's previous publication 'Livestock's Long Shadow' which drew attention to the environmental impacts of the sector.

In the context of the livestock-environment debate, the Dutch Ministry of Agriculture, Nature and Food Quality of The Netherlands organized a side event on sustainable livestock on the margins of the 22nd session of the FAO's Committee On Agriculture (COAG) in June 2010. By making use of the momentum built by the discussion of the FAO's 'State Of Food and Agriculture: Livestock in the balance' report in the COAG meeting, the Dutch government aimed to start an international dialogue on sustainable livestock in order to put sustainable livestock back on the international agenda (Neve, 07-06-2011).

At this side event, a dialogue group was established which then consisted of only a few members, knowingly the governments of Ethiopia, Brazil, India, New Zealand and the Netherlands, and both the FAO and the World Bank. Although it was still a small group, it was aimed to represent both rich and poor countries, North and South, countries with a major export of livestock products and countries for which livestock production was mainly for the livelihoods and subsistence of their population. The members were selected to form a diverse group with various perspectives on the livestock sector (Smith, 18-05-2011).

The report of this meeting was presented to the members of the COAG, which agreed that "FAO should actively engage in consultations to continue the global dialogue with a wide range of stakeholders to sharpen the definition of the sector's objectives, taking into account the disparities between production systems, the proliferation of private standards, countries' economic development, role of smallholders, importance of export, and status of natural resources. Such consultations should help identify issues that could require intergovernmental action" (FAO, 2010: 2-3). The members of the dialogue group agreed to have further broad consultations on how the livestock sector could be accommodated in order to meet the growing demand of livestock products in a socio-economic and environmentally sustainable manner within the boundaries of the future resource constrained environment (FAO, 2011: 1-2).

In November 2010, the dialogue group convened again at the side event 'Livestock and Climate Change: Issues and Options' on the margins of the Global Conference on Agriculture, Food Security and Climate Change, in the Hague. At this meeting, the concept note for subsequent consultations prepared by the FAO, was discussed. A proposal was made to establish a multi-stakeholder platform on responsible livestock sector development which "preserves the environment and the natural resource base, is socially inclusive, contributes to viable economic growth and minimizes the public

health risks from emerging and endemic zoonotic and food-borne diseases" (Smith, 18-05-2011). The members agreed upon the concept of resource use efficiency as a first focal point for the multi-stakeholder platform. Although the members of the dialogue group recognized the importance of the multiple issues involved in the livestock sector, it was perceived to be overly ambitious to enhance all of the public goods related to the sector at once. The members of the dialogue group felt that of the three topics discussed in the Sofa report, livestock and the environment was the one which gained the least attention from public policy makers (Smith, 13-07-2011). Therefore the members proposed to focus, at least in the initial phase, on the resource use efficiency of the global livestock sector while safeguarding other environmental, socio-economic and public health outcomes (FAO, 2011: 1-2).

It was also decided that before a multi-stakeholder platform could be launched, a broader country involvement should be sought, and regional consultations in multiple regions needed to be conducted. Brazil invited the members of the dialogue group to have the first regional multi-stakeholder consultation in Brasilia (FAO, 2011: 2). Jimmy Smith from the World Bank was asked to remain chair and the FAO was entrusted with the secretariat of the multi-stakeholder platform. With financial support of the Netherlands for the preparation and organisation of the consultations for the platform, the FAO in close collaboration with the World Bank, conducted broad consultations in order to create awareness and invite stakeholders to the first multi-stakeholder consultation in Brasilia. Furthermore, they prepared a detailed plan for a Global Agenda of Action to be discussed at the next meeting in Brasilia.

6.2 The case study: The consultation on the multi-stakeholder platform on Responsible Livestock

The first regional consultation of the multi-stakeholder platform took place in Brasilia in May 2011. To ensure a broad representation of stakeholders, representatives of the governments of the involved countries, private sector, civil society, international institutions and research institutes were invited to the meeting. Furthermore, a substantial representation of organizations within these different categories was sought as well. To represent the environmental non-governmental organizations, representatives of the World Wildlife Fund and Imaflora attended the meeting. From the private sector, representatives of the International Dairy Federation, Brazilian Beef Exporters Association and the Brazilian Feed Industry Association were present. And to enhance scientific knowledge in the platform, Embrapa and the International Livestock Research Institute were invited. Furthermore, the international aspect was reflected in the presence of multiple international institutions such as the OECD, the African Union, the World Bank and of course the FAO**.** The country participation had been expanded now also including China and USAID as representing the United States. Within this group of stakeholders, the objectives of the meetings were to present and discuss a series of technical, regional and perspective presentations held by the participants and to develop and agree upon the objectives, priorities and a conceptual framework for a Global Agenda of Action in support of Responsible Livestock Sector Development (FAO, 2011: 2-3).

Chapter 7 Frames

This chapter will give an overview of the empirical findings on the existing frames and configurations of the participants of the multi-stakeholder platform. First the frames of the participants on the current situation, the desired situation and the methods to achieve the desired situation will be discussed in respectively paragraph 7.1, 7.2 and 7.3. The frames are identified by means of analysing the answers of the respondents of the survey questions, complemented with the information obtained from the interviews and the presentations held by the actors. The frames will be structured by the sub-frames as identified in the operationalization. After the frames are outlined, the chapter will conclude by analyzing which of the pre-defined configurations are found in the frames of the participants in paragraph 7.4.

7.1 Frames on the current situation

The environmental impact of the livestock sector is perceived to be a problem by all of the participants of the multi- stakeholder platform. The majority (90,5 %) of the participants in the survey indicated that the environmental impacts of the current livestock sector are a problem. Only 9,5 % indicated that the environmental impacts of the current livestock sector are not a problem. One of these respondents motivated this answer by saying that the environmental performance of the livestock sector is not a problem because the environmental aspect of the livestock sector is not perceived to be the most pressing problem, rather food security and livelihoods are[3]. The other respondent's motivation was that he felt that the cause of the unsustainable practices could not be attributed to the livestock producers, but rather to the public policies and regulations concerning the sector[4]. Although these actors both indicated in the survey that it is not a problem, their explanation for this answers indicate that they actually do perceive the environmental impacts coming from the sector to be a problem. Therefore, it could be said that all actors agree that the environmental impacts of the livestock sector are a problem, although they might disagree on the cause or the priority of solving the problem.

Although all of the respondents thus perceive the environmental impacts of the livestock sector to be a problem, food security and livelihoods were perceived to be more important than the environmental problem of the sector. 58 % of the actors ranked food security as the most important problem, while only 25 % of the actors ranked the environment as the most important problem. Livelihoods was only indicated by 16 % of the respondents as the most important problem, but this was compensated by the fact that 47 % of the actors ranked livelihoods as the second most important aspect. Animal welfare, although perceived to be a problem, is not perceived to be a very important one. None of the respondents ranked animal welfare in the top 3 of the main problems, and almost all of the respondents (83 %) perceived animal welfare as the least important problem.

[3] "For Africa, the environmental aspect of the sector is not the most pressing problem. Our first concern is to feed the hungry people in our country and to ensure their livelihoods. That is why I have indicated that it is not a problem. But if you look at it from a global perspective, than yes, I think it is a problem" (Nouala, 15-07-2011).

[4] "None. In Brazil the problem doesn't come from the livestock sector, it comes from the public sector regulations and lack of control" (Private sector representative in the survey).

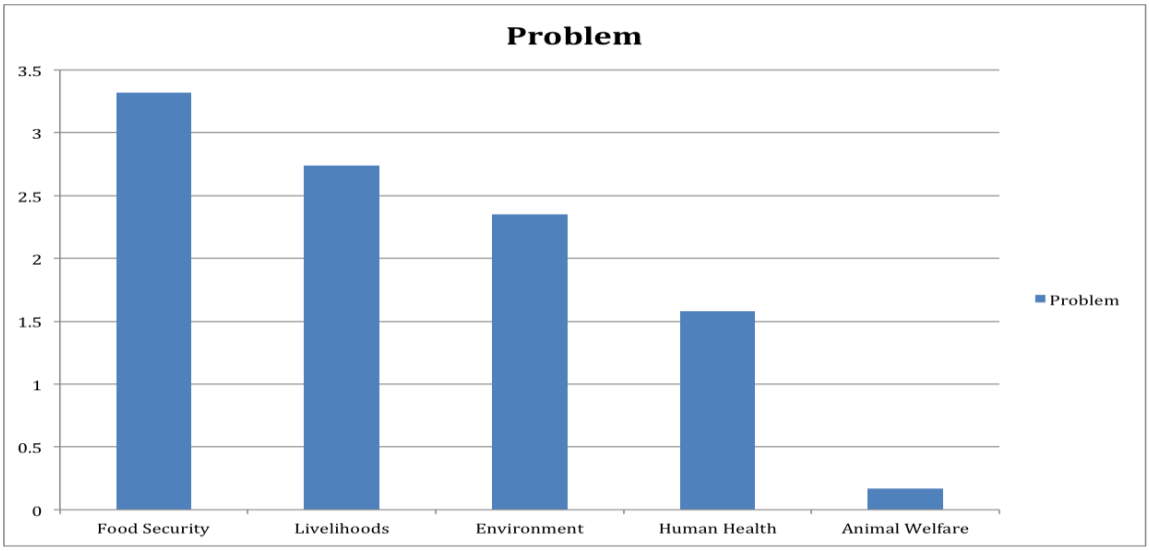


Figure 7.1: Average frames on the problem of the current livestock sector

Table 7.1: Rankings of the frames on the problem of the current livestock sector

Problem	1	2	3	4	5	N/A	Average score
Food security	**57,9% (11)**	21,1% (4)	15,8% (3)	5,3% (1)	0,0% (0)	0,0% (0)	**3,32**
Livelihoods	15,8% (3)	**47,4% (9)**	31,6% (6)	5,3% (1)	0,0% (0)	0,0% (0)	2,74
Human health	5,3% (1)	10,5% (2)	31,6% (6)	**42,1% (8)**	10,5% (2)	0,0% (0)	1,58
Environment	25,0% (5)	25,0% (5)	15,0% (3)	**30,0% (6)**	5,0% (1)	0,0% (0)	2,35
Animal welfare	0,0% (0)	0,0% (0)	0,0% (0)	16,7% (3)	**83,3% (15)**	0,0% (0)	0,17

Although the environmental impacts of the sector are thus not perceived to be the most important problem related to the livestock sector, there was a consensus however on the frame that the environmental impacts indeed are a problem. Furthermore, all participants perceive the management of the livestock sector to be the problem, rather than livestock itself. Only one respondent agreed with the statement that the problem of the negative environmental impact of the livestock sector is livestock itself. However, since this respondent also agreed with the statement that 'the problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself', this frame can be considered inconsistent.

And finally, all the participants have a positive frame on the urgency of improving the environmental performance of the livestock sector. Only 1 respondent in the survey did not agree with the statement that improving the environmental performance of the livestock is an urgent issue, and took a neutral position. Therefore, no negative frames on the urgency were found.

The frames on what exactly is perceived to be the environmental problem, or the aspects of the problem, are more diverse. All of the predefined environmental problems - depletion of natural resources, land use, pollution, Greenhouse gas emissions, deforestation and biodiversity- were indicated by the respondents in the survey to be a problem. Other problems that were indicated were non-point pollution from the use of animal manure as fertilizer, and water quality and usage. The depletion of natural resources and Greenhouse gas emissions were most frequently indicated as the most important problems, respectively 28 % and 26 %, while biodiversity was never indicated as the most important problem. When the average percentages are taken, the depletion of natural resources and land use were indicated as most important, while biodiversity was perceived to be the least important. The difference between the average rating of Greenhouse Gas emissions and the frequency of its ranking as being the most important problem, clearly indicates a wide variety on the frames on Greenhouse Gas emissions between the actors. The same accounts for the frames on pollution.

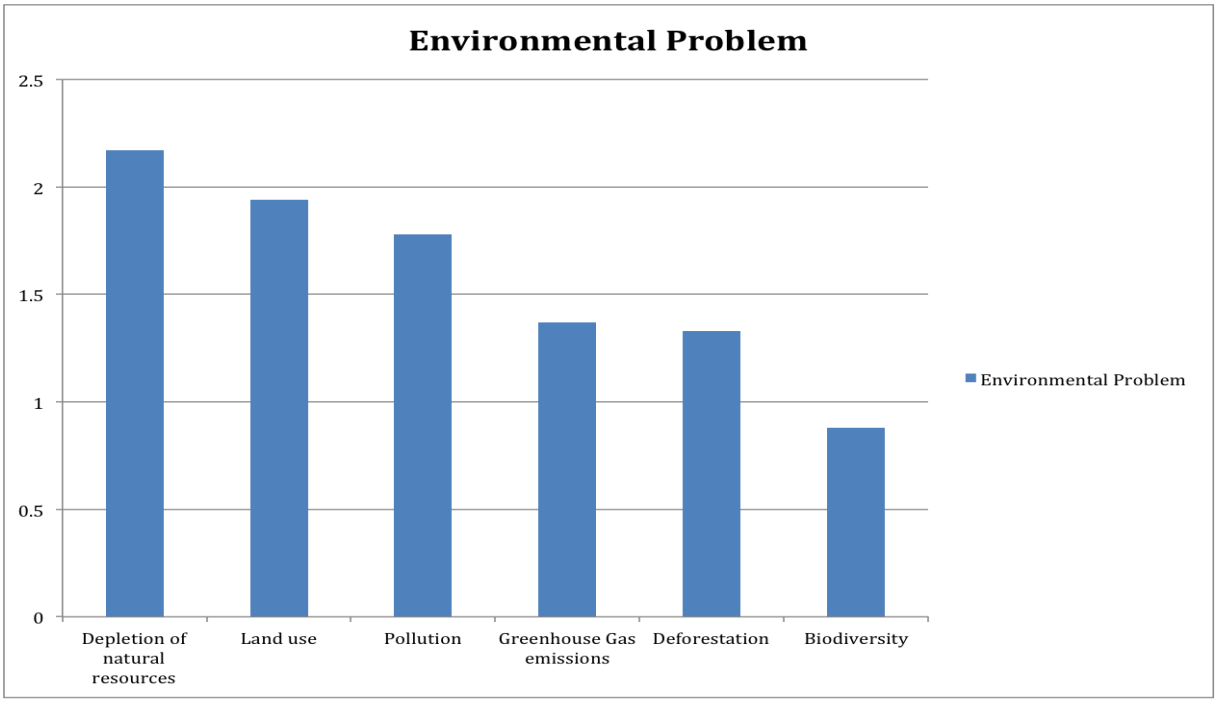


Figure 7.2: Average scores on the frames on the environmental problem of the livestock sector

Table 7.2: Rankings of the frames on the problem of the environmental impact of the livestock sector

Problem	**1**	**2**	**3**	**4**	**5**	**6**	**N.A.**	**Average**
Greenhouse Gas emissions	26,3%	5,3%	15,8%	15,8%	5,3%	**31,6%**	0,0%	1,37
Pollution	21,1%	**26,3%**	10,5%	0,0%	21,1%	15,8%	5,3%	1,78
Depletion of natural resources	**27,8%**	22,2%	16,7%	11,1%	16,7%	5,6%	0,0%	**2,17**
Land use	16,7%	16,7%	22,2%	**27,8%**	5,6%	5,6%	5,6%	1,94
Deforestation	5,6%	22,2%	22,2%	11,1%	**27,8%**	11,1%	0,0%	1,33
Biodiversity	0,0%	11,1%	11,1%	**38,9%**	22,2%	16,7%	0,0%	0,88

Like the frames on the problem, the frames on the factors that are causing the problems were diverse as well. All of the predefined frames on the causes were found among the respondents of the survey. The frames are divided over actors who perceive the causes lying in the production side and actors who perceive the causes lying in the consumption side. While the majority of the respondents (55) % indicated to believe that the environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products, only 20% indicated that they did not perceive the production of livestock products as the cause of the environmental problems of the livestock sector. The other 25 % remained neutral. In addition, a substantial majority (65%) indicated that they did not believe that the high amount of consumption is the cause of the environmental problems of the livestock sector. Only 10% indicated to believe that the problems are caused by a high amount of consumption, and 25 % remained neutral.

Statement	I do not agree at all	I do not agree	I am neutral	I agree	I totally agree	Average Score
The environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products.	0,0%	20,0%	25,0%	**50,0%**	5,0%	3,40
The environmental problems related to the livestock sector are caused by the high amount of consumption of livestock products.	25,0%	**40,0%**	25,0%	10,0%	0,0%	2,20

The dominance of 'production-oriented' frames over 'consumption-oriented frames' are also visible in the average rankings of the causes of the environmental problems. On average, the consumption of livestock products is perceived to be the least important cause, both in terms of the amount of products consumed, and the type of products consumed. The amount of the livestock products consumed were however perceived to be slightly more important than the type of livestock products consumed. Nevertheless, 24 percent of the respondents indicated that the amount and type of consumption as causing the environmental problems of the livestock sector are not important at all.

Although it was not the most frequently ranked as the most important cause, the excessive use of natural resources was on average perceived to be the most important. Half of the respondents identified the excessive use of resources as the second most important cause, and only 2 respondents did not put the excessive use of resources in the top 3 most important causes. The low productivity levels of production of extensive production systems, was on average perceived the second most important cause, followed closely by the open nutrient cycles of intensive industrial production systems. Also in terms of frequency these causes were often ranked to be most important. 35 % of the respondents ranked the open nutrient cycles as the most important cause while 24% perceived the low productivity levels of extensive production systems to be the main cause.

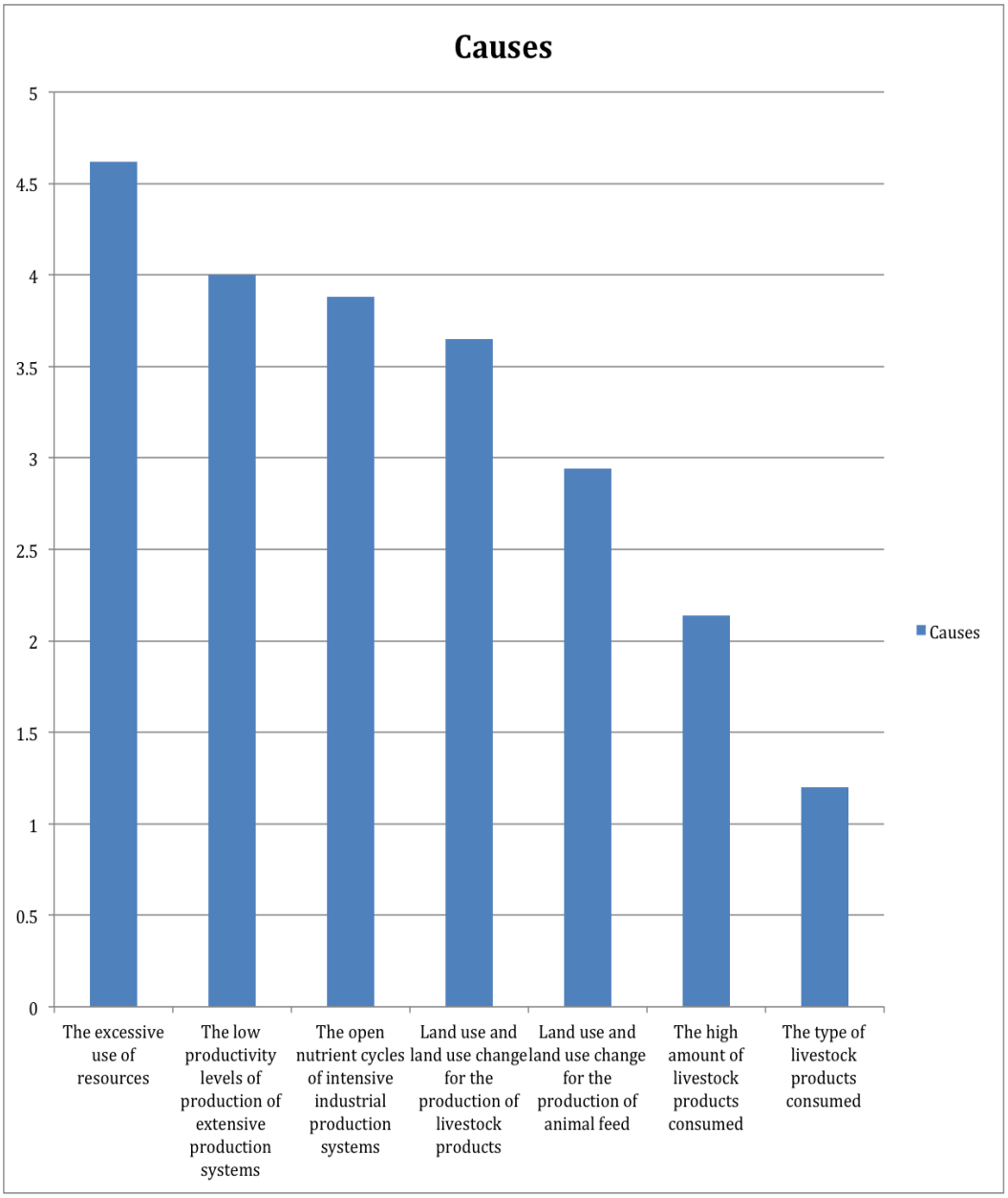


Figure 7.3: Average scores on the frames of the causes

Other causes which were mentioned were a lack of knowledge, both on the side of the producers and on the side of the consumers. Furthermore, a lack of appropriate policies and regulations, a lack of research on possible solutions, high costs and bad infrastructures, and a lack of financing and support for livestock producers were seen as causes of the environmental problems. All of these causes, which were either indicated in the interviews or in the open questions in the survey, somehow represent the structures behind the production of livestock products. Again, the frames on the causes are thus mainly oriented on the production side.

Table 7.3: Rankings of the frames on the causes of the environmental problems of the livestock sector

Problem	1	2	3	4	5	6	7	N/A	Average score
The open nutrient cycles of intensive industrial production systems	**23,5% (4)**	17,6% (3)	17,6% (3)	**23,5% (4)**	0,0% (0)	17,6% (3)	0,0% (0)	0,0% (0)	3,88
The excessive use of resources	25,0% (4)	**50,0% (8)**	12,5% (2)	0,0% (0)	6,3% (1)	0,0% (0)	6,3% (1)	0,0% (0)	**4,62**
The low productivity levels of production of extensive production systems	**35,3% (6)**	5,9% (1)	17,6% (3)	5,9% (1)	23,5% (4)	0,0% (0)	5,9% (1)	5,9% (1)	4,00
Land use and land use change for the production of livestock products	11,8% (2)	17,6% (3)	23,5% (4)	**29,4% (5)**	5,9% (1)	11,8% (2)	0,0% (0)	0,0% (0)	3,65
The high amount of livestock products consumed	12,5% (2)	6,3% (1)	0,0% (0)	12,5% (2)	6,3% (1)	**31,3% (5)**	18,8% (3)	12,5% (2)	2,14
The type of livestock products consumed	0,0% (0)	5,9% (1)	5,9% (1)	0,0% (0)	17,6% (3)	17,6% (3)	**41,2% (7)**	11,8% (2)	1,20

Conclusion

There is a division between actors who perceive food security and livelihoods as the first main problem of the current livestock sector, and actors who view the environmental aspects of the livestock sector as the main problem. Although most actors perceive food security and livelihoods as the main problem of the current livestock sector, there is an unanimous consensus on the frame that the impacts of the sector on the environment are a problem as well. Furthermore, all actors perceive the problem to be urgent. Another unanimous consensus is found in the frame that the environmental problems of the livestock sector are lying in the production side- in the structures behind the production and the management of the sector- rather than in livestock itself.

Regarding the frames on the problem of the environmental impacts of the livestock sector and it's causes, most consensus is found in the frames on the depletion of natural resources as a the main overall problem, and the excessive use of resources as the main cause. Three quarters of the respondents indicated the use of resources as the most or the second most important cause.

The issues on which the respondents are most divided is on the consumption of livestock products as a cause of the environmental impacts of the livestock sector. While 24% of the actors indicated that the cause of consumption is not important at all, about the same amount of respondents perceived the consumption to be the most important or second most important cause of the environmental problems of the livestock sector. Although the vast majority of the respondents is 'production-oriented' and does not perceive the consumption of livestock products to be an important cause, the frames on consumption are indeed present in the multi-stakeholder platform.

Furthermore, frames on the problems on which the respondents are most divided are the frames pollution and Greenhouse gasses. Whereas 32 % of the respondents perceives Greenhouse gasses either as the most important, or the second most important problem, exactly the same amount of respondents perceives Greenhouse gasses to be the least important problem. The frames on pollution show the same kind of divide. While 47% perceives pollution as the most, or second most important problem, 42 % of the respondents perceives pollution to be either not important at all, or one of the least important problem.

7.2 Frames on the desired situation

The frames on the desired situation show some resemblances with the frames on the current situation. Whereas it concerns the frames on the goal, again food security, livelihoods and the environment are perceived to be the three most important aspects, and animal welfare the least important. What catches the eye however, is that while 25% of the respondents perceived the environment to be the most important problem, 37 % perceives improving the environment as the main goal. Nevertheless, food security is still perceived to be the most important goal since improving food security is by more than half of the respondents perceived as the main goal. Improving livelihoods is only by 10 % of the actors perceived as the main goal, but again is often ranked as the second most important aspect (40%). On average, improving livelihoods and improving the environment by improving the production of livestock products are perceived to be more or less equally important. Furthermore, most respondents perceived the goal to be a combination of improving the environment *and* improving food security and livelihoods through increasing the efficiency and productivity levels of production[5].

[5]"Improving livelihoods will also increase food security and provide opportunities for investment to improve environmental performance" (Respondent in the survey).

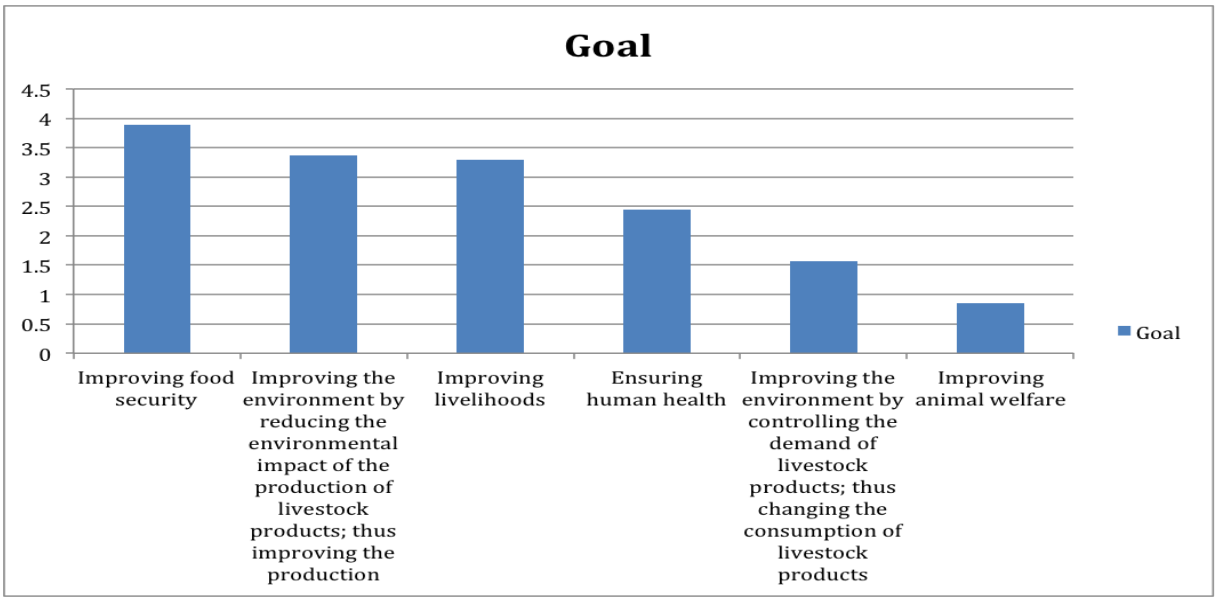


Figure 7.4 Average scores on the frames of the goal

When it comes to the frames on the goal of improving the environment, again a divide in production and consumption can be found. The vast majority of the respondents perceive more or less the same divide in frames is found between the production and consumption. While 58 % perceives the goal of changing the consumption of livestock products either as least important or as not important at all, 16 % of the respondents perceive changing the consumption as the most or second most important goal. The number of respondents that indicated consumption as a goal is smaller than the number of respondents that indicated that consumption is a cause of the environmental problem.

Several other goals were mentioned in the answers on the open questions in the survey and the interviews. Improving productivity and resource use efficiency was most frequently mentioned as a goal. Furthermore, most respondents perceived the goal to be a combination of improving the environment *and* improving food security and livelihoods through increasing the efficiency and productivity levels of production.

Although the frames on the goal are thus divided over demand management and improvement of production, all of the actors share a positive frame on the task of improving the environmental performance of the livestock sector's. All of the respondents indicated that the environmental performance of the livestock sector can be improved.

Conclusion

The issues on which the actors differ is again the consumption. Even though the majority (58%) shares the perception that changing the consumption is the least important goal, or not important at all, the frames on the respondents clearly differ.

Table 7.4: Rankings of the frames on the goal

Goal	1	2	3	4	5	6	N/A	Average score
Improving food security	**52,6% (10)**	15,8% (3)	15,8% (3)	5,3% (1)	5,3% (1)	5,3% (1)	0,0% (0)	**3,89**
Improving livelihoods	10,0% (2)	**40,0% (8)**	30,0% (6)	10,0% (2)	10,0% (2)	0,0% (0)	0,0% (0)	3,30
Ensuring human health	5,0% (1)	15,0% (3)	**35,0% (7)**	20,0% (4)	15,0% (3)	10,0% (2)	0,0% (0)	2.45
Improving animal welfare	0,0% (0)	0,0% (0)	0,0% (0)	15,0% (3)	**55,0% (11)**	30,0% (6)	0,0% (0)	0,85
Improving the environment by reducing the environmental impact of the production of livestock products; thus improving the production	**31,6% (6)**	21,1% (4)	10,5% (2)	**31,6% (6)**	0,0% (0)	5,3% (1)	0,0% (0)	3,37
Improving the environment by controlling the demand of livestock products; thus changing the consumption of livestock products	5,3% (1)	10,5% (2)	5,3% (1)	10,5% (2)	10,5% (2)	**31,6% (6)**	26,3% (5)	1,57

7.3 Frames on the methods to achieve the desired situation

The frames of the participants on the solutions are in line with the participant's frames on the causes. While it was not ranked most frequently by respondents as the most important solution, the resource use efficiency is on average perceived to be the most important solution, closely followed by improving the productivity levels of production. All of the respondents ranked the improvement of resource use efficiency at least in the top 3 solutions, while more than half (53%) perceived it to be the second most important solution.

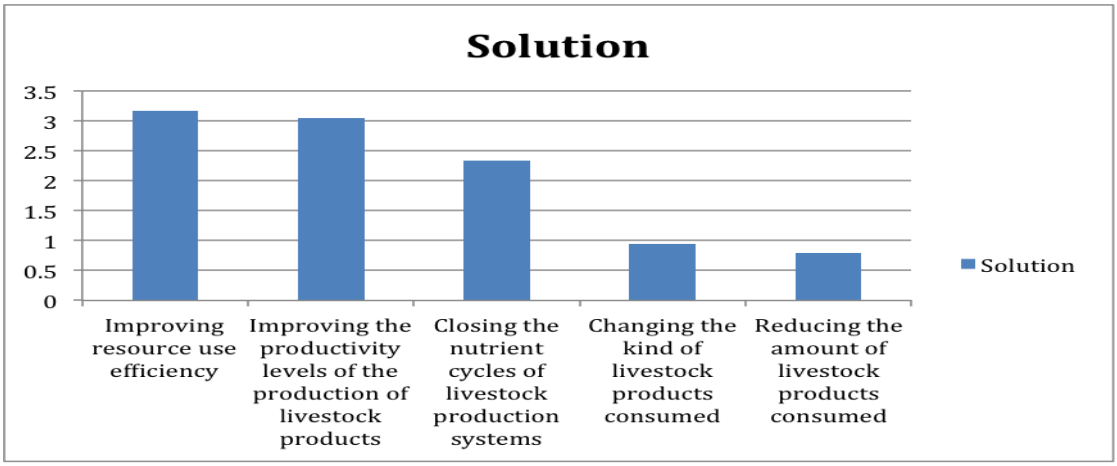


Figure 7.5: Average scores of the frames on the solution.

Furthermore, the respondents are divided again between the production-oriented frames and the consumption-oriented frames. While 27 % of the respondents perceives a reduction or shift in consumption of livestock products as the most or second most important solution, more than half of the respondents perceive it to be the least important solution, or even not important at all.

Furthermore, the overriding majority (85 %) feels that controlling the demand of livestock products is inappropriate because 'it is not right to deny people the right to eat livestock products'. Only 10 % of the respondents disagreed with the statement that 'it is not right to deny people to right to eat livestock products'. Furthermore, 70% of the respondents do not perceive demand management as an effective solution, and only 19 % think that it is realistic that a major reduction or shift in consumption will be achieved. However, 45 % of the respondents agreed with the statement that "reducing the environmental impact of the livestock sector requires both improving the production and changing the consumption", 30% disagreed with the statement and 20% remained neutral.

Table 7.5: Rankings of the frames on the solution

Solution	1	2	3	4	5	N/A	Average score score
Closing the nutrient cycles of livestock production systems	15,8% (3)	10,5% (2)	**57,9% (11)**	10,5% (2)	0,0% (0)	5,3% (1)	2,33
Improving the productivity levels of the production of livestock products	**45,0% (9)**	25,0% (5)	25,0% (5)	0,0% (0)	5,0% (1)	0,0% (0)	3,05
Improving resource use efficiency	31,6% (6)	**52,6% (10)**	15,8% (3)	0,0% (0)	0,0% (0)	0,0% (0)	**3,16**
Reducing the amount of livestock products consumed	5,0% (1)	5,0% (1)	0,0% (0)	25,0% (5)	**40,0% (8)**	25,0% (5)	0,80
Changing the kind of livestock products consumed	5,6% (1)	11,1% (2)	0,0% (0)	33,3% (6)	**44,4% (8)**	5,6% (1)	0,94

Where the frames on the instruments are concerned, there is a general consensus on technology and economic incentives as the most effective instruments. While only 21 % of the respondents perceive economic standards as the most effective instrument, 42 % perceive it as the second most effective instrument. Technology is by more than half of the respondents perceived as the most effective instrument (58%), and is also on average ranked as the most important.

Certifications and voluntary standards are perceived as the least important instruments. Especially the representatives of the private sector perceived these instruments as inappropriate. This became clear during the meeting when they argued "You cannot impose those standards of production. You cannot tell us how to produce, where to produce, how much to produce and especially not how much you have to eat" (Sampaio, 18-05-2011).

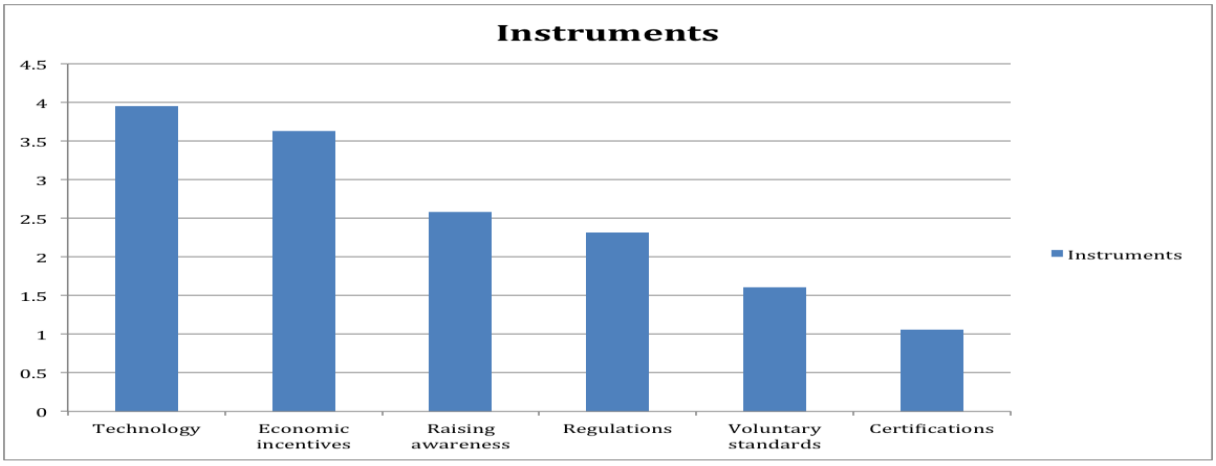


Figure 7.6: Average scores on the frames of the instruments

Table 7.6: Rankings of the frames on the instruments

Instrument	1	2	3	4	5	6	N/A	Average Score score
Technology	**57,9% (11)**	10,5% (2)	15,8% (3)	5,3% (1)	5,3% (1)	5,3% (1)	0,0% (0)	**3,95**
Regulations	10,5% (2)	21,1% (4)	5,3% (1)	**31,6% (6)**	15,8% (3)	15,8% (3)	0,0% (0)	2,32
Voluntary standards	0,0% (0)	5,6% (1)	22,2% (4)	**27,8% (5)**	16,7% (3)	**27,8% (5)**	0,0% (0)	1,61
Certifications	0,0% (0)	5,3% (1)	5,3% (1)	10,5% (2)	**42,1% (8)**	31,6% (6)	5,3% (1)	1,06
Economic incentives	21,1% (4)	**42,1% (8)**	21,1% (4)	10,5% (2)	5,3% (1)	0,0% (0)	0,0% (0)	3,63
Raising awareness	10,5% (2)	15,8% (3)	**31,6% (6)**	15,8% (3)	15,8% (3)	10,5% (2)	0,0% (0)	2,58

Conclusion

The general consensus which is found on the solution is improving resource use efficiency of the production systems. The main points of differences are still the reduction or changing of consumption. Furthermore, there is a broad consensus on the goal improving the productivity levels of production. The main consensus on the frames of the instruments are is the use of technology.

7.4 Configurations

The previous three paragraphs gave an overview of the frames which exist among the participants, as well as the points of convergence and the issues on which they differ. These frames are part of configurations. As was described in chapter 3, a desk study on the key topics and configurations which exist in the wider debate have led to the identification of 8 configurations. These configurations differ in the perceptions of the problem, the cause of the problem, the task, and their normative and causal assumptions on the solution. This paragraph will describe to what extent the different configurations were found among the answers of the participants in the multi-stakeholder platform.

7.4.1 The optimists

As was described in the operationalization, the actors who belong to the configuration of the optimists can be identified by a positive answer on the following statements:

-The problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself.
-The environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products.
-The environmental performance of the livestock sector (the production of livestock products) can be improved.
-It is not right to deny people the right to eat livestock products.
-It is not realistic that there will be a major reduction in consumption or a shift towards other types of animal products.

This configuration is found among all of the participants of the platform. As became clear in the previous paragraphs, all participants have a positive frame on the task of improving the environmental performance of the livestock sector. Furthermore, all respondents of the survey perceive the cause of the environmental problem to be lying in the management of the livestock sector rather than in livestock itself. Furthermore, more than half of the respondents (55 %) agreed with the statement that the environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products. Only 20 % of the respondents disagreed with this statement, of which 15% indicated that the problem is not caused by the production of livestock products, but by the inappropriate policies and regulations which induce unsustainable practices. This indicates that, although they do not place blame at the livestock producers, the problem is indeed lying in the production side.

With regard to the solution of reducing or changing the consumption of livestock products as a solution to reduce the environmental impact of the sector, the overriding majority (85 %) feels that it is inappropriate. Only 10 % of the respondents disagreed with the statement that ‘it is not right to deny people to right to eat livestock products’. Furthermore, 70 % of the respondents do not perceive demand management as an effective solution, and only 19 % think that it is realistic that a major reduction or shift in consumption will be achieved.

Within the configuration of the optimists there are three other configurations that are found among the respondents; the sustainable intensificationists, and the intensivists, and the extensifists.

- The sustainable intensificationist, who perceive the depletion of natural resources as the problem, the excessive use of natural resources as the cause and the improvement of resource use efficiency as the solution;
- The intensivists who perceive the low productivity levels of extensive production as the cause of the environmental impacts of the livestock sector, and therefore seek the solution in improving the productivity levels of the production.
- The extensivists who perceive the cause of the environmental impacts of the sector to be lying in the open nutrient cycles of intensive industrial production systems, and therefore seek the solution in closing the nutrient cycles.

These sub-configurations were however less convincingly found among the respondents of the survey since not all of the respondents answered in a consistent manner. Four respondents could be categorized as an intensivist, only one respondent could be categorized as an extenisvist, and one other respondent could be categorized as a sustainable intensificationist. When the actors who answered consistent for more than one configuration are taken into account, the sub-configurations become more clear. Now, six respondents can be categorized as an intensivist, five respondents can be categorized as an sustainable intensificationist and three respondents can be categorized as an extensivist. The inconsistency in a lot of the answers indicates the complexity of the problem and the interrelatedness of the different aspects. Most of the inconsistency came from respondent who placed the low intensity levels of production as the most important cause, while ranking improving resource use efficiency as the most important solution. These two aspects are obviously closely related.

7.4.2 The pessimists

The second main configuration are the 'pessimists'. As was described in the operationalization, the actors who belong to the configuration of the pessimists can be identified by a positive answer on the following statements:

-The problem of the negative environmental impact of the livestock sector is livestock itself, changing or restructuring the way the sector is organized will not solve the environmental problems related to the sector
- The environmental performance of the livestock sector cannot be improved
-The environmental problems related to the livestock sector are caused by the high amount of consumption of livestock products.
-Controlling the demand of livestock products could be effective for solving the environmental problems related to the livestock sector

This configuration is not found among the participants of the multi-stakeholder platform. Only positive frames on the task were found among the frames of the participants; all actors agreed with the statement that the environmental performance of the livestock sector could be improved. Furthermore, only one respondent agreed with the statement that 'the problem of the negative environmental impact of the livestock sector is livestock itself, changing or restructuring the way the sector is organized will not solve the environmental problems related to the sector'. However, the same respondent also agreed with the statements 'The problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself'.

The answers of this respondent on his frame on the problem is thus inconsistent. Since the same respondent also agreed with the statements 'The environmental performance of the livestock sector (the production of livestock products) can be improved', and 'It is not right to deny people the right to eat livestock products', it is safe to say that this respondent does not belong to the pessimists configuration. When it comes to the solution of changing the demand for livestock products, only 15 % perceives it to be an effective solution.

Although there were no 'pessimists' found among the actors of the multi-stakeholder platform, some aspects of configurations 'demand shifters' and 'reductionists' were found. The actors which have frames belonging to these configurations can be classified to the 'combination-ist' configuration and will therefore be discussed in the next paragraph.

7.4.3 The Combination-ists

As became clear in paragraph 7.3.1 and 7.3.2, most of the actors can be classified as an 'optimist', while none of the actors can be classified as a pure 'pessimist'. There are however some actors who have both aspects of the configuration of the optimists, and (some) of the aspects of the configurations of the reductionists or demand shifters.

All participants can be categorized as an optimist. Hence, all participants have a positive frame on the task, and all respondents of the survey perceive the cause of the environmental problem to be lying in the management of the livestock sector rather than in livestock itself. There are however some optimists who also have some 'consumption frames'. They perceive the amount and/or type of consumption to be a problem and a cause of the environmental impacts of the livestock sector, and subsequently perceive the reduction or shift in consumption to be a solution to reduce the impact which the livestock sector has on the environment. They believe that reducing the environmental impact of the livestock sector will require both an improvement of the production AND a change in consumption. Eight respondents in the survey indicated to have at least a few of these frames on consumption.

This chapter focused on the frames, and configurations of frames, that exist among the participants of the multi-stakeholder platform. The discrepancies and similarities were discussed. The next chapter will analyse the process of converging these frames.

Chapter 8: The process of framing

The previous chapter outlined the frames and configurations which exist among the participants in the multi-stakeholder platform. It became clear that although there are substantial similarities between the frames of the participants, some discrepancies can be found as well. While all participants have a positive frame on the task of the platform – improving the environmental performance of the livestock sector- and the urgency of the problem, mainly the frames on the causes of the environmental impacts, the solution to the problems and the instruments differ between the actors.

Before recommendations can be made for management actions that could be taken to further converge these frames, it is necessary however to look at the process of frame convergence; to analyse to what extend the requirements for frame convergence have been present in the multi-stakeholder platform (paragraph 8.1), and to make an inventory of what has already been done by the FAO in order to converge the frames of the participants (paragraph 8.2). The chapter will conclude by drawing some conclusions in paragraph 8.3.

8.1 Requirements

The theoretical chapter outlined five main requirements for frame convergence. This paragraph will analyse to what extend these required conditions, respectively a sense of urgency, cognitive and social variety, dialogue and interaction and trust have been met.

8.1.1 Sense of urgency

As was indicated in the previous chapter, the sense of urgency among the participants of the multi-stakeholder platform is very high. All of the respondents in the survey, and the interviewees perceive the environmental impacts of the current livestock sector as a problem, and all but one (neutral) respondents in the survey indicated that improving the environmental performance of the livestock sector is an urgent issue. Furthermore, the improvement of the environmental performance of the livestock sector is generally perceived to be a high priority since 84 % indicated that is has a high priority. Only one respondents indicated that he did not perceive the issue to have a high priority and two respondents remained neutral. There was also an overall agreement on the fact that joint action is needed to solve the problem since 90 % indicated that international cooperation is necessary for improving the environmental performance of the livestock sector. Only one respondent disagreed with the statement, and another remained neutral. The interviews showed the same results. All of the interviewees emphasized the importance and urgency of improving the environmental performance of the livestock sector and agreed on the importance of the multi-stakeholder platform and international cooperation to achieve these improvements. It can thus be safely said that the requirement of a sense of urgency has been met in the platform.

Although an overwhelming majority of the respondents indicated that improving the environmental performance of the livestock sector has a high priority, a small majority of the respondents (56 percent) indicated that other aspects of the problems of the current livestock sector have a higher priority than the environmental aspects. As became clear in the previous chapter, especially food security and livelihoods are perceived as the major 'competitors' of the environmental aspect. While 53 % of the respondents indicated that food security was the most important goal of restructuring the livestock sector, 37 % chose improving the environment as most important. The results from the interviews showed however that most actors perceived the aim of improving food security, livelihoods and the environment to be equally important. When asked to choose between them however, improving livelihoods and food security were perceived slightly more important than the environment. Although a majority of the actors thus perceived other aspects of the livestock sector as more important than the environmental aspect, the task of improving the environmental performance of the livestock sector is still perceived as an urgent issue and a high priority.

To conclude, the platform has passed the test of meeting the requirement of a sense of urgency with flying colors. Some actors give a higher priority to other aspects of the livestock sector, mainly food security, livelihoods and human health, than the environmental aspect. Nevertheless, there is a general acknowledgement that the environmental impact of the livestock sector, although not the only problem, is an urgent problem, with a high priority that requires international cooperation in order to solve the problems.

8.1.2 Cognitive variety

As was shown in the previous chapter, most of the cognitive aspects of the predefined configurations were found among the participants of the platform. Since no stakeholders with extremist views on consumption- such as vegetarians and veganists- were invited, most actors were production oriented and frames of the pessimistic configuration- especially negative frames on the task of the platform- were altogether lacking. Nevertheless, both frames of consumption as causing the environmental problems and reducing or shifting consumption as a solution to improve the environment, were found among some of the respondents that could be classified as combinationists. Furthermore, as the previous chapter indicated, frames on biodiversity and animal welfare were generally lacking in the platform as well. Although biodiversity and animal welfare were recognized as a problem by most respondents, they were perceived to be of little importance.

Despite the fact that the platform missed the points of view from the pessimist configuration, only some of the respondents in the survey indicated that they did missed any relevant points of view. The points of view which are perceived to be missing are 'social and economic' points of view, 'animal welfare' and 'workers and social movements'. Nevertheless, the majority of the respondents in the survey did not miss any relevant points of view. Also most of the interviewees felt that the most important points of views were included. The interviewees which did identify missing points of view mentioned animal welfare and consumers' points of view as well.

Overall, the requirement of cognitive variety has been largely met. Although some of the frames of the pessimist configurations were lacking- mainly the negative frame on the task- other aspects of this configuration were found among the combinationists. Therefore, frames on the consumption are present as well among the participants.

8.1.3 Social variety

Although not all possible stakeholders were involved in the multi-stakeholder platform, a substantial variety was achieved in the sorts of actors which were involved. The platform included representatives of both governments, international institutions, research institutes, NGO's and the private sector. In terms of categories, only a consumer representation was missing.

Furthermore, there was a substantial amount of government representatives involved. Even though it was strived to include a broad range of countries, not all governments and regions were represented[6] and a balanced representation of countries has not yet been achieved. This can be attributed to the fact that the platform is still in a preparatory and consulting phase. A wider involvement and a better representation of countries is expected in the subsequent stages of the platform when broader consultations and concomitant engagement will be sought (FAO, 2011; Smith, 13-07-2011; Steinfeld, 26-05-2011).

Furthermore, the actors with more extremist views on consumption and animal welfare, belonging to the pessimists configuration, were intentionally excluded from the platform (Smith, 13-07-2011; Steinfeld, 26-05-2011). Nevertheless, the majority of respondents in the survey indicated that they did not miss any relevant actors. Also the majority of the interviewees felt that most of the important actors were included. The actors which were indicated to be missing were mostly other countries, especially African countries, retail and consumers, more varied producer's representations, pastoralists' organisations, and organisations concerned with animal health.

Overall, the requirement of social variety has been partially met. In terms of categories a substantial variety has been achieved. Only a consumer representation was lacking. Within the categories however, some broader involvement can be sought. Especially the country participation can be expanded. This is already planned however, as soon as new regions are consulted. The FAO needs to find a balance between being inclusive and keeping a manageable number of actors involved in order to ensure the platform's decisiveness.

8.1.4 Dialogue and interaction

During the meetings there were a lot of presentations allowing the different stakeholders to show each other what the specific situation of the livestock sector in their country is and where they were coming from. The set-up of the meeting was that the presentations would last 20 minutes, leaving 10 minutes for discussing each presentation. Unfortunately all of the presentations went overtime and no time for discussion was left. As important as it was to allow every actor to elaborate on the specific circumstances of their livestock sector, it resulted in a lack of time for discussing the 'normative correctness' of the different frames and induce frame reflection and convergence. The only substantial causal and normative discussion in the formal part of the meeting, occurred during two slots of discussion of 2,5 hour. This time was used to discuss the text of the Brasilia Consensus. Some discussion concerned the vision and the scope but the main part of the time was used for practical matters such as the proceedings and the organizational matters.

[6] The main region which was missing is the Near East.

The lack of time for discussing and reflecting upon the frames within the formal, plenary, parts of the meetings was counter balanced by the informal part of the meetings. Examples of these informal parts are the breaks, lunches, cocktails and dinners. Here, the participants could discuss their points of view and come in contact with actors from different cognitions which they usually did not speak.

All but one of the interviewees indicated that there was not sufficient time for discussing the different points of view during the formal parts of the meeting. The interviewees did emphasized however, that a lot of interaction happened in the informal parts of the meeting, and most interviewees indicated that they had spoken to actors which they usually do not speak with. Nevertheless, it was generally felt that there was insufficient time for discussion in order to change perspectives or alter points of view during the plenary parts of the meeting[7]. Furthermore, half of the respondents in the survey, 47 %, indicated that there was not sufficient time and room for discussion and debate. Two respondents remained neutral and 40 % of the respondents indicated that there was enough time and room for discussion and debate. Although a slight majority of the respondents indicated that time and room for discussion was insufficient, 73 % of the respondents indicated that they had enough opportunity to express their points of view during the conference. The interviews showed the same results. This did not lead to alterations of the points of view of the actors however, since 43 % of the respondents indicated that they have not changed the points of view that they had before going to the meeting, while only 21 % indicated that they did change their points of view. A large part, 36 %, remained neutral on the statement.

A lack of changes in points of view does not necessarily mean that the actors did not reflect upon their own frames, it might however indicate that the interaction was insufficient for reframing and frame convergence. Furthermore, only 29 % of the respondents in the survey believe that the different points of view among the actors have come closer together as opposed to half of the respondents which do not think that convergence has taken place.

Overall, the requirement for interaction was largely present in the multi-stakeholder platform. There was a lot of room and time scheduled for presentations and for the participants to express their points of view, and the informal parts of the meeting facilitated interaction and discussion. Normative and causal discussions were however compromised by the time taken for presentations. This lack of time for discussions in the formal parts of the meetings was counter balanced by the informal parts of the meeting. Nevertheless, most respondents and interviewees perceived the possibilities for interaction to be insufficient for alterations of viewpoints.

8.1.5 Trust

An important aspect of mutual trust among the actors of the multi-stakeholder platform is whether or not the actors believe that the other actors are willing to help them or work with them, instead of against them. Although most respondents in the survey and interviewees indicated that they felt that

[7] We didn't had a lot of time for discussion. We basically had 2 slots of discussion. One slot on the vision and scope, one slot on the functions, one slot on the steering committee up to the next meeting, in the way forward to the next meeting. So that is, I don't think that it really gives you time for complete change of perspectives (Gerber, 24-05-2011).

this is the case, a small group of actors distrusted the intentions of the fellow participants. During the discussion in the meeting, in the survey and during the interviews, feelings of distrust were expressed. Especially some of the representatives of the private sector had the feeling that the representatives of the developed countries, the NGO's and the institutions such as the World Bank and the FAO, were overemphasizing the environmental aspect of the problem. They strongly felt that there were some actors who were against the production of livestock products and tried to reduce it by both advocating the reduction of consumption and constraining the production by setting global standards on the quantity of production and production methods[8]. Furthermore, some actors felt that they were being blamed for damaging the environment with their production. Multiple actors included expressions in their presentations and in the discussion of the meetings from which could be inferred that they felt they were being blamed and needed to defend themselves. Furthermore, it seemed that although the platform intended to go beyond the developed – developing country divide, it was felt by some that representatives of NGO's and the developed countries tried to further their own interest and use the platform to impose regulations on producing countries of the developing countries[9] [10].

Some actors thus had the feeling that (a part of) the other actors were working against them. It must be noted however that this concerned a very small group of actors, mainly from the private sector. Nevertheless, the actors generally felt that that their contributions were taken seriously. Almost all of the respondents (67 %) indicated that their contributions to the debate were taken seriously, 33 percent remained neutral and none of the respondents indicated that their contributions were not taken seriously. When asked whether or not their points of view where well reflected in the outcome of the conference however, only 36 percent answered positively. 21 percent did not feel that their points of view are well reflected and a majority of 43 percent remained neutral. This could be a result however of the fact that some interviewees indicated that they were not sure what they exact outcome of the conference was, since the document of the Brasilia Consensus turned out afterwards not to be subscribed by the Brazilians.

In addition, almost all of the representatives from other categories beside the private sector, indicated in the interview that they felt that their contributions were taken seriously and only one interviewee indicated that his points of view were not well reflected in the outcome of the conference. Furthermore, they all agreed that despite the fact that there were some emotionally charged discussions, there was a 'friendly' atmosphere in which they felt comfortable enough to identify their points of view and discuss them. Furthermore, the fact that the actors with obviously opposing viewpoints identified their points of view so open and clearly, indicates that the general atmosphere was open enough to do so.

[8] "You cannot impose those standards of production. You cannot tell us how to produce, where to produce, how much to produce and especially not how much you have to eat" (Sampaio, 29-07-2011).

[9] The platform could be a way to impose regulations on producing countries in the developing world, based on interests of NGOs and other groups from developed countries (Private sector representative in the survey).

[10] "There was a division between developed and developing countries. In my opinion, developed countries just want solve their problems, and not the environmental problems of livestock in the world". (Private sector representative in the survey)

Moreover, there is a clear divide in the trust of the participants in the FAO as a neutral facilitator of the process. Half of the respondents in the survey indicated that the FAO is a neutral and appropriate agency to be coordinating the multi-stakeholder platform. However, 25 % indicated that they did not think that the FAO is a neutral and appropriate facilitator and the other 25 % remained neutral. Although most respondents indicated to be at least neutral towards the neutrality of FAO's position, the fact that only half of the respondents agreed with the statement is somewhat worrying. Concerns were expressed in the interviews regarding the neutral position of the FAO when funded solely by one government, the government of the Netherlands. They indicated that the FAO could not remain neutral if its core funding was coming from only one country, especially when that country does not have a neutral position and has expressed a clear position (Nouala, 16-07-2001; Sampaio, 29-07-2011). The concerns over the fact that the government of the Netherlands was funding the FAO was probably aggravated by the fact that the Netherlands have put a great emphasis on the environmental aspect and had raised also the issue of consumption. The representative of the Brazilian Beef Exporters Association argued that he was afraid that these donors would influence the neutrality of the FAO and might try to restrain the production of beef. The inclusion of representatives of both the private sector and the Brazilian government was perceived as a solution to this problem (Sampaio, 29-07-2011). Another interviewee indicated that he felt that the FAO could be a neutral facilitator of the process, if it would get its budget from either the FAO´s core budget, a basket funding from the FAO itself complemented by funding from other organisations such as the World Bank, or was funded by multiple donors in the form of multilateral funding.

In addition, some of the actors, especially the private sector representatives, questioned the neutrality of the FAO because they felt that the FAO was putting too much emphasis on the environmental aspects, was advocating dietary changes towards less meat consumption[11] [12] and promoting different kinds of livestock products to be produced and consumed. Furthermore they saw the FAO as a standard-setter and were afraid that the platform would try to impose standards and certifications on the private sector.

The requirement of trust is thus only partially met in the multi-stakeholder platform. While most actors trust both the other actors, and the FAO as a neutral coordinator of the platform, a small group of actors (mainly private sector representatives) indicated to distrust both the other participants' intentions and the neutral position of the FAO.

[11] "Well, we really do not have a good impression of you guys. Because everything which comes from FAO says "we do not like meat consumption and we want you to stop" (Representative of the Brazilian beef exporters association during the meeting).

[12] "But if we are talking here about making an agenda. And you say that reducing consumption is one of the solutions, than I say it is not possible. This is a meeting, a promotion, promoted by the FAO. I am not saying that the FAO is saying this. I just heard that somebody was saying this, and I am just recon testing it".

8.1.6 Conclusion

Overall, all of the requirements for frame convergence were at least to some extend present in the multi-stakeholder platform. An overview of the requirements and the points of improvements are given in table 8.1.

The requirement which was most convincingly present was the one of a sense of urgency. There is a general acknowledgement among the participants that the environmental impact of the livestock sector, although not the only problem, is an urgent problem, with a high priority that requires international cooperation in order to solve the problems. In addition, the requirement of cognitive variety, and the requirement of dialogue and interaction are largely present as well. Most of the predefined frames were found among the participants and a substantial amount of room and time was reserved for actors to speak and express their viewpoints. A point of improvement is the time and room available for actual causal and normative discussion among the participants however.
The requirement of social variety was less convincingly present. Nevertheless, this was for the large part caused by the fact that the platform is still in its initial phase, as a result of which the country representation was not yet balanced. When the platform develops, the country representation needs to be better balanced.

Another requirement that was only partially present was the one of trust. Although the majority of the participants trusted both the other participants to work with them instead of against them, and the FAO to be a neutral agency to be coordinating the platform, a small group of actors indicated to distrust the other participants as well as the neutral position of the FAO. Even though the latter group is only small, it contains mainly of private sector representatives. Since the platform targets to improve the production of livestock products, the trust and cooperation of the private sector representatives is essential. Investing in the trust of the private sector representatives is thus a point of improvement.

Table 8.1: Overview of the requirements

Requirement	Present?	Strong points	Weak points
Sense of urgency	Yes	Although not the only problem, the environmental impact of the livestock sector is generally perceived as an urgent problem, with a high priority that requires international cooperation.	Other aspects of the livestock sector (mainly food security and livelihoods) are often perceived to be more important than the environmental aspect of the problem.
Cognitive variety	Largely	Most of the (frames of the) predefined configurations were found among the participants of the multi-stakeholder platform.	Some aspects of the pessimist configuration were not found among the frames of the participants.
Social variety	Partially	There were actors from all different 'categories' of stakeholders; government, international institution, NGO, private sector, and academia and scientists.	Due to the platform's initial phase, the country representation is not balanced yet. Furthermore, consumer representation is lacking, and actors with extremist views are excluded from the platform.
Dialogue and interaction	Largely	A lot of time and room for actors to speak and express their viewpoints (in the form of presentations), and a large informal part of the meeting.	Lack of actual causal and normative discussion between the participants.
Trust	Partially	Most actors both trust the other actors to be working with and for them, instead of against them, and trust the neutrality of the FAO as a coordinator of the multi-stakeholder platform.	Some actors (mainly from the private sector) distrust the intentions of the other actors. They believe that other actors try to reduce the consumption of livestock products or constrain it's production. Furthermore, they question the neutrality of the FAO.

8.2 Management actions

As was emphasized in chapter 7, there are still some differences between the frames of the participants in the multi-stakeholder platform. Moreover, paragraph 8.1 showed that there are some points of improvements were the required conditions for frame convergence are concerned. The theoretical chapter identified ten management action which could be taken in order to enhance the required conditions for frame convergence and stimulate the actual convergence of frames. This paragraph will describe per management action to what extend the FAO has already applied it, and what management actions are not yet taken. This analysis will enable the formulation of some recommendations for further management actions to be taken by the FAO in the next chapter.

Creating a sense of urgency. The FAO has taken several actions to create a sense of urgency. First by communicating the severity of the problems related to the livestock sector and the dire need for international action to enhance the sector's performance. The FAO has communicated this message both in its publications and media performances, and during the meetings of the platform. The clear voiced message that there is a problem which is urgent and should have a high priority on the

international agenda, increased the sense of urgency among the participants. Raising the awareness on the situation in the livestock sector has indirectly led, or at least contributed, to the development of the initiative of setting up the multi-stakeholder platform. Furthermore, the FAO has used positive pressure to forge a consensus by repeatedly emphasizing the importance of agreeing on the text of the Brasilia Consensus. Expressions during the meeting such as "we want to leave with a roadmap to the next meeting" (Dijkman, 18-05-2011) and "we are supposed not the leave Brasilia without having agreed upon the principles, on the roadmap and on a way forward, and I am convinced that we can do that" (Jutzi, 18- 05-2011) emphasized the need to come to a consensus and put positive pressure of actually achieving it. The FAO has thus actively used the management action of *creating a sense of urgency*.

Introducing new frames. The platform is still in its preparatory phase of consulting the different regions. The FAO is still exploring and making an inventory of the different points of view. This stage of the platform is too premature for the introduction of new frames since there are other consultations yet to come. When the consultation phase is completed and the platform will be actually launched, then the FAO can make an inventory of the different frames and see what new ideas or frames could be introduced to enhance further frame convergence.

Introducing new actors. Since the meeting of the dialogue group in November 2010, the FAO has invited new actors. For example, both representatives of China, and an USAID representative to represent the United States, were invited to join the multi-stakeholder platform. Furthermore, several Brazilian researchers, government representatives and representatives of the private sector were invited to provide the meeting of sufficient regional knowledge. Once the initiative of the multi-stakeholder platform further matures, a wider country involvement will be sought. The FAO did not introduce any new actors from the pessimist configuration however.

Prevent frames from being excluded. It is FAO's task, as the facilitator of the platform, to prevent the exclusion of frames in the process. Therefore it is essential that the process remains open for all kinds of frames. In the beginning of the meeting it was mentioned that although the FAO prepared a document, based on the earlier meetings of the dialogue group, the document was not final and nothing had been pre-decided. The chair of the first meeting, Mr Jutzi from the FAO, emphasized that the process was open by saying "Basically nothing has been carved in stone, or is pre-decided. The discussion is open on the way by which this agenda of action is to be shaped"(Jutzi, 18-05-2011). It was repeated several times during the meeting that the process was open. Although the meeting was to a large extent indeed open to new ideas and contradictory frames, the FAO did however sometimes redirect actors and discussions back towards resource use efficiency as the central focus.

Furthermore, negative frames on the task as well as frames on consumption have been, to a large extent, excluded. As is emphasized in the theoretical chapter, the systematic exclusion of frames can lead to stagnations in frame convergence. The reduction of consumption as a possible (part of the) solution was for a large part put aside. Although some participants have briefly touched upon the issue of consumption in their presentation, both a causal discussion on the consumption as a cause of the environmental impact of the livestock sector, and a normative discussion on the appropriateness of targeting a reduction in consumption as a solution to the environmental impacts has been avoided. This could have implications for future progress of the platform, since actors could revert to these frames in a later stage of the platform which could frustrate the process. The FAO

should therefore make sure that these frames are properly discussed and given a place in the process. This does not necessarily mean that they should be adopted as a solution, it merely means that the contradictory frames on consumption should be confronted so that frame reflection could take place and the frames on consumption can be given a place. This ensures that the actors cannot argue afterwards that the solutions were not considered.

Prevent actors from being excluded. Comparable to the aforementioned task of the FAO to prevent the exclusion of frames, it is their task to prevent the exclusion of stakeholders. As is mentioned under the requirements, the platform includes a substantial variety of stakeholders. An representative country balance has not been achieved yet, but this will be enhanced once the platform continues its consultations and progresses to subsequent stages. Before actually launching the platform, the FAO should ensure a proper representation of the different regions in the world. The FAO did however make a choice not to invite actors with extremist views, particularly with regard to vegetarians and animal welfare activists; actors who believe that livestock products should not be produced at all. The choice to exclude these actors was made to ensure the platform to be productive and action oriented. The FAO feared that including these actors in the process would be counterproductive and would lead to arguments and accusations back and forth instead of productive discussions. By excluding the extremist views, the FAO did not prevent the exclusion of actors.

Safeguard interaction. As was emphasized in the previous paragraph, the consultative character of and the set up of the meeting left insufficient time for dialogue and interaction in which frames were discussed and debated. The different frames were introduced and confronted with the other frames in the form of listening to presentations, but a deep discussion on the causal assumptions and normative beliefs largely lacked. The FAO did organise a lot of informal settings in which the actors could meet each other and debate their points of view, but discussion on beliefs and frame convergence were not directly stimulated.

Consolidation of meaningful frames. The FAO has consolidated meaningful frames by focusing, and keep the focus on, resource use efficiency which was also agreed upon and subscribed to by the members of the dialogue group in the preceding meetings. By depicting resource use efficiency as a means to an end, rather than an end at itself, all the different perspectives and goals[13] of the actors could be united under the concept of resource use efficiency. The concept therefore binds the actors with different frames and objectives. By describing the agreements made in the Brasilia Consensus, and having the actors subscribing to it, the FAO consolidated the meaningful frames which can form a starting point for future consultations. Although after the meeting the Brasilian representatives wanted some more time to look over the text of the consensus one more time before subscribing to it, it is generally perceived by the actors that there is indeed a consensus which was subscribed to by all the stakeholders in the meeting.

Investing in trust. The efforts of the FAO to build were twofold, efforts to build trust *among* the participants, and efforts to gain trust *from* the participants. The first was done by creating a lot of informal moments in the conference, and enabling the chances of 'mingling' of the participants so they would get to know each other. During the meetings there were breaks, lunches, cocktails and

[13] Such as enhancing food security, livelihoods, economic growth, human health and the environmental performance

dinners to provide a friendly and informal atmosphere to get to know each other and take away the hostility of some actors towards another. Furthermore, the first meeting in Brazil started in the evening with first a brief opening, followed by a cocktail. This was done to make sure that the meeting didn't began 'cold' and the participants could get to know each other in an informal setting.

In order to (re)gain trust from the participants, the FAO have made some efforts to emphasize that the platform should be constructive and about a way forward, instead a looking back and pointing fingers. This was repeatedly emphasized during the meeting, for example by saying "We are not interested in blame, we are looking for direction of change" (Jutzi, 18-05-2011). Furthermore, the FAO has emphasized several times during the meeting that they were not a standard setter and they did not, and have not, made any recommendations on consumption. Additionally , they stressed that they were not working against the private sector, or were there to blame, but rather tried to help the sector overcoming their problems and achieving more sustainable practices. The FAO also emphasized this in the informal parts of the meeting. By talking to the stakeholders which were a bit hostile in an informal setting. Furthermore, in order to gain trust in the FAO's neutrality, the FAO has emphasized during the meeting that nothing was decided yet, including who would be the eventual facilitator of the platform.

Certifying. The FAO has used their legitimacy as a United Nations Food Agency and their authority when it comes to research in the area of livestock and food production, to strongly communicate the dire need for international cooperation to ensure a sustainable growth of the livestock sector which is capable of meeting the rising demand in livestock products. The FAO has done this by its publications and constantly appearing in the media discussing the 1 billion hungry people in the world and the role of the livestock sector in feeding the world population, as well as discussing the environmental impacts of the sector and its potential to adapt to and mitigate climate change. By advocating this sense of urgency, the FAO has attempted to influence the perception of the situation as an urgent problem which is in need of international cooperation to solve it. Furthermore, by repeatedly depicting the environmental impact of the livestock sector as a problem, the perception of the situation has changed. Over time, the awareness of the environmental problems related to the livestock sector have increased. Nowadays even the private sector acknowledges the fact that it is a problem and the environmental performance of the livestock sector need to be improved. Furthermore, by stressing and communicating the frame that the problems are not attributed to livestock alone, but rather to the way the sector is organised, thus the frame that the sector can improve their environmental performance, and depicting livestock as part of the solution, the FAO has influenced the frame that the livestock sector can be improved. This has led to the willingness of the private sector to engage in the discussions and the platform as well. And finally, by very strongly communicating the potential of improving the resource use efficiency, the FAO has brought together the multiple functions of the livestock sector under one solution.

Certifying can help to induce actors with opposing frames to reframe. However, the FAO has to be very careful to do this because it could also be seen by the actors as a way for the FAO to impose their own ideas and agenda on the platform.

Upscaling and downscaling. Where the scope of the platform is concerned the FAO has very clearly downscaled by stimulating and consolidating the focus on resource use efficiency. By acknowledging that not every aspect, both with regard to the wider problems related to the livestock sector and to the environmental problems of the sector in specific, could be dealt with at once, the choice was made to focus on resource use efficiency as a means of enhancing all the different aspects. Improving the resource use efficiency is believed to reduce the excessive use of natural resources. But it is also

assumed that improving the resource use efficiency will reduce the sector's contribution to the GHG emissions, the levels of pollution, the use of land and deforestation, and will enhance biodiversity. The focus on resource use efficiency thus reduces the scope and complexity of the problem which makes it easier to deal with and propose solutions.

Furthermore, In order to avoid duplication of efforts which are already been made at a regional, national or local level, or could be made by individual actors, the FAO has chosen to only distil the issues for which a collective approach and solutions would be beneficial. Thus focussing on solutions on a global scale instead of searching for solutions for specific countries or regions. By only taking up the challenges wherefore collective action is needed, instead of duplicating efforts which could be made by individual actors themselves, the scope of the solutions sought decreases. By upscaling the geographic scale at which the problems and solutions are discussed, the FAO thus downscaled the scope of the platform. In a later stage the platform could be divided into regional subdivisions in order to discuss the regional specific problems and solutions in more detail. Discussing regional specific issues in the regional divisions could improve the effectiveness of the platform while avoid time consuming discussions at a global level. It could however be important to keep the overarching global platform to discuss the issues which need global coordination.

8.3 Conclusion

To conclude, the FAO has already taken most of the management actions in order to converge the frames of the different participants. There are however some points of improvement. An overview of the management actions already taken and the points of improvements is given in table 8.2.

Particular attention is paid to creating a sense of urgency and certifying the frames on the urgency of the problem, the positive frame on the task and the potential solution of resource use efficiency. These frames are also consolidated by reaffirming them during the meetings and incorporating them in the concept texts of the Brasilia Consensus, or the Global Agenda of Action. The FAO could consolidate these frames even further by encouraging the actual signing of such an agreement. This would support the use of these frames as building blocks for subsequent consultations.

Other points of improvement are the prevention of the exclusion of frames and actors. Although participants from all 'categories' are included and the FAO has emphasized the open character of the consultations, this is not sufficient to guarantee social and cognitive variety in the process. Special attention need to be paid by the FAO to ensure that the frames on consumption are discussed and given a place in the process, as well as ensuring that actors who have frames on consumption are not excluded from the process. Furthermore, the multi-stakeholder platform is still in its initial phase, which makes it more complicated to decide which new frames and/or actors can be introduced in order to enhance the social and cognitive variety. However, after the consultative phase is completed the FAO should make an inventory of the different frames and actors to decide what new frames or actors could be introduced to enhance further frame convergence.

Furthermore, the FAO could improve its strategy of safeguarding interaction. The efforts already made by the FAO to provide all stakeholders time to be heard and express their points of through presentations, and organising informal settings in which the stakeholders can meet each other, are of course of great importance in an consultative phase. However, in order for frame convergence to be achieved, more time is needed for causal and normative discussion on the 'rightness' of frames.

And finally, the management actions to invest in the trust of the private sector representatives can be improved. Creating an informal setting, emphasizing the openness of the process and emphasizing the neutral position of the FAO have not been sufficient to win the trust of (especially) the private sector representatives. Since the private sector representatives are crucial stakeholders in the platform, hence they are the ones who will actually need to improve their production, their trust and cooperation is essential for an agreement to be reached and thus for the success of the platform. There are several possibilities for the FAO to build trust between the actors, and from the actors in the FAO as a neutral coordinator of the platform. The FAO could for example invest in the trust of these actors by ensuring a discussion on the frames of consumption and the frames on the solution and instruments like certifications and regulations. These frames can then be given a place and all actors' points of view on these issues can be openly discussed. This reduces distrust between the actors and speculations on the intentions of the other actors. Furthermore, private sector representatives could be included in the steering group to give them 'a direct voice' in the platform, or the platform could look for a 'more neutral' way of financing. In case these actions turn out to be insufficient to regain the trust of (some of) the actors in the neutral position of the FAO, an independent process management could be used to coordinate the process.

Table 8.2: Overview of the management actions

Management action	**Already taken by the FAO?**	**How is it applied?**	**What is missing**
Creating a sense of urgency	Yes	On the one hand through publications and raising awareness via the media. And on the other hand through the use of positive pressure and setting deadlines.	-
Introducing new frames	No	-	No new frames are introduced yet, since the platform is still in an initial consultative phase.
Introducing new actors	Yes (partially)	Inviting China and USAID, and inviting private sector representatives, NGO's and research institutes.	The country involvement is not balanced yet, some regions are not represented. And actors with different (opposing frames) are not invited.
Prevent frames from being excluded	Yes (partially)	The FAO has emphasized several times during the meeting that the process is open to all points of view.	Negative frames on the task, and frames on consumption are excluded from the process. These frames need to be discussed and given a place in the process.
Prevent actors from being excluded.	Yes (partially)	Representatives from the different 'categories' of stakeholders are included.	Stakeholders with extremist views, especially on the consumption side are excluded.
Safeguard interaction	Yes (partially)	Providing a lot of time for the different stakeholders to express their points of view in their presentations, and organising informal settings in which the stakeholders can meet each other.	A more causal and normative debate on the 'rightness' of the frames.
Consolidation of meaningful frames	Yes	The FAO has consolidated the positive frames on the sense of urgency, the task and resource use efficiency as meaningful frames, by focusing on resource use efficiency in the concept documents of the Brasilia Consensus, or the Global Agenda of Action, and constantly reaffirming the consensus and focus on resource use efficiency.	The actual signing of the Brasilia Consensus, or a Global Agenda of Action.
Investing in mutual trust	Yes (partially)	The FAO has invested in mutual trust between the participants by creating informal settings in which they could interact. Efforts to invest in the trust of the participants in the FAO as a neutral coordinator were made by emphasizing that the process is open to all viewpoints, and ensuring that the FAO is not a standard setting body, nor makes recommendations on intake.	A small group of actors (mostly private sector representatives) still do not trust the intentions of (some of) the other actors, and the neutrality of the FAO.
Certifying	Yes	Through publications and the media, the FAO has certified the frames of the urgency of the problem, the positive frame on the task and the potential solution of resource use efficiency	-
Upscaling and downscaling	Yes (both upscaling and downscaling)	The FAO has downscaled the scope by focusing on resource use efficiency and only distil the issues for which joint action is required, while upscaling the scale by looking at global issues.	-

Chapter 9: Conclusion

This research consist of 3 parts, an analysis of the frames of the participants of the multi-stakeholder platform, an analysis of the process of frame convergence and recommendations for further management actions to be taken by the FAO to further enhance frame convergence. Based on the information in the previous chapters, the three following conclusions can be made, which together form the conclusion of this research.

Conclusion 1: The frames

There is a division between actors who perceive food security and livelihoods as the main problem of the current livestock sector, and actors who view the environmental aspects of the livestock sector as the main problem. Although most actors frame food security and livelihoods as the main problem of the current livestock sector, there is an unanimous consensus on the frame that the impacts of the sector on the environment are a problem as well, and are as a matter of fact an urgent issue. Furthermore, it is generally perceived that the goals of improving food security and livelihoods can be combined with the goal of improving the environment; increasing the production of livestock products, which is beneficial for both food security and livelihoods, while maintaining the environment.

Furthermore, the environmental problems of the livestock sector are perceived to be the way in which the sector is organised rather than livestock itself. The problem is thus perceived to be lying in the production side, and therefore the task is perceived to be the improvement of the (environmental performance) of the production. All actors in the platform are optimistic and have a positive frame on this task; they believe that the environmental performance of the livestock sector can be improved. These actors belong to the 'optimists' configuration. Pessimistic frames on the task - the view that the environmental performance of the livestock sector cannot be improved because the problem lies in livestock itself -, are not found among the actors of the platform. Therefore, there are no actors found from the 'pessimist' configuration, which have a negative frame on the task and believe that the problem of the environmental impact of the sector lies in livestock itself.
Nevertheless, there are some 'optimists' that also share some frames of the 'pessimists' points of view. Without denying the importance of improving the production of livestock products, and rejecting the viability of this task, they recognize the importance of the consumption of livestock products as part of the problem and the cause as well. They do not share the pessimist's negative frame on the task of improving the production however. These 'combination-ists' rather perceive the production and consumption of livestock products to be a problem, and a cause of the environmental impacts of the livestock sector, and believe that in order to reduce the impacts of the sector, both an improvement in production and a change in consumption is required. The amount and/or type of livestock products consumed as part of the problem, cause- and especially it's reduction as a solution-, is a key issue on which the actors differ. Although the actors in the platform are mainly from the configuration optimists that is production oriented, some actors of the configuration combination-ists are found as well, who combine their production-oriented approach with a consumption sidetrack.

With regard to the frames on the environmental problem of the production of the livestock sector, it's causes, and the solutions, common ground is found in the concept of *resource use efficiency*. This concept frames the excessive use of resources as the main cause of the environmental impacts of the livestock sector, and the improvement of the resource use efficiency as the most effective solution to reduce the sector's impact on the environment . Although the aspects of this concept have the highest average score, it is not ranked to be the most important by most actors, as was the improvement of productivity levels. Nevertheless, more than three quarters of the actors perceives the concept of resource use efficiency to be at least the second most important. The concept of resource use efficiency combines aspects of the other two frames on the environmental problem of the livestock sector -productivity levels and nutrient cycles- and the perspectives of the livestock sector – food security, livelihoods and environment- and is therefore perceived to be the common ground.

Conclusion 2: The process

Overall, all of the requirements for frame convergence were at least to some extend present in the multi-stakeholder platform. The requirement which was most convincingly present was the one of a sense of urgency. There is a general acknowledgement among the participants that the environmental impact of the livestock sector, although not the only problem, is an urgent problem, with a high priority that requires international cooperation in order to solve the problems. In addition, the requirement of cognitive variety, and the requirement of dialogue and interaction are largely present as well. Most of the predefined frames were found among the participants and a substantial amount of room and time was reserved for actors to speak and express their viewpoints. A point of improvement is the time and room available for actual causal and normative discussion among the participants however. The requirement of social variety was less convincingly present. Hence there was a lack of actors who hold opposing or extremist views, and the different countries and regions were not equally represented. Nevertheless, this was for the large part caused by the fact that the platform is still in its initial phase, as a result of which the country representation was not yet balanced. When the platform develops, the country representation needs to be better balanced. The last requirement that leaves some room for improvement is the one of trust. Although the majority of the participants trusted both the other participants to work with them instead of against them, and the FAO to be a neutral agency to be coordinating the platform, a small group of actors indicated to distrust the other participants as well as the neutral position of the FAO. Even though this concerns only a small group, it contains mainly of private sector representatives. Since the platform targets to improve the production of livestock products, the trust and cooperation of the private sector representatives is essential. Investing in the trust of the private sector representatives is thus a point of improvement.

The FAO has already taken most of the management actions that are defined in the literature, in order to converge the frames of the different participants. Especially attention is paid to creating a sense of urgency, certifying and consolidating meaningful images. Based on the analysis of chapter 8, there are however some points of improvement which can be identified. The main management actions that can be improved are the prevention of the exclusion of frames and actors, safeguarding interaction and investing in trust.

The first management action is preventing the exclusion of frames and actors. Although participants from all 'categories' are included and the FAO has emphasized the open character of the consultations, this is not sufficient to guarantee social and cognitive variety in the process. Special attention need to be paid by the FAO to ensure that the frames on consumption are discussed and given a place in the process, as well as ensuring that actors who have frames on consumption are not excluded from the process. Furthermore, the multi-stakeholder platform is still in its initial phase, which makes it more complicated to decide which new frames and/or actors can be introduced in order to enhance the social and cognitive variety. However, after the consultative phase is completed the FAO should make an inventory of the different frames and actors to decide what new frames or actors could be introduced to enhance further frame convergence.

The second management action that can be improved is the one of safeguarding interaction. The efforts already made by the FAO to provide all stakeholders time to be heard and express their points of through presentations, and organising informal settings in which the stakeholders can meet each other, are of course of great importance in an consultative phase. However, in order for frame convergence to be achieved, more time is needed for causal and normative discussion on the 'rightness' of frames.

And finally, the third management action that can be improved is investing in trust. The FAO has made efforts to create an informal setting in which the participants could meet each other, they have emphasized the openness of the process and emphasized the neutral position of the FAO . This has not been sufficient in order to gain the trust of the private sector representatives however. Since the private sector representatives are crucial stakeholders in the platform, hence they are the ones who will actually need to improve their production, their trust and cooperation is essential for an agreement to be reached and thus for the success of the platform. The management actions targeted to improve the trust of the private sector representatives should thus be improved.

Conclusion 3: Recommendations

The analysis of the frames made clear that there is a consensus between the actors on the frames that there is a problem, which is urgent and needs to be solved. Furthermore, all actors have a positive frame on the task. Nevertheless, there are still some discrepancies in the perceptions of what exactly the problem is, what is causing it and how it should be solved. While in general the concept of resource use efficiency is found as a common denominator which combines different perspectives, it is still a rather abstract concept which is very broadly defined. In order for an agreement to be reached on what concrete actions need to be taken, the participants need to further specify and define the concept of natural use efficiency as a problem, cause and solution. Therefore, their frames need to be further converged. The analysis of the process showed that the requirements for frame convergence were for a large part present, but some points of improvement can be found. Based on the first two conclusions, the following recommendations can be made for further management actions to be taken by the FAO in order to enhance frame convergence.

- *Invest in trust, especially in the trust of the private sector representatives*

The trust of the private sector representatives in the other actors and in the FAO as a neutral coordinator of the platform, is essential for the success of the multi-stakeholder platform. Hence, they are the ones who can actually improve the production practices. Investing in their trust is therefore crucial. The FAO already made some efforts to build the level of trust between the actors, by creating informal settings and emphasizing the aim to work constructive in the platform instead of placing blame. These efforts need to be continued while the process of the consultations and building the platform is ongoing. Especially after the actual establishment of the platform, the FAO must invest in the trust between the different actors which will be needed to work together. But also in the consulting and preparatory stage it is essential to invest in mutual trust to make sure that actors want to engage in the process. Special attention has to be paid to the beliefs of the actors that the other actors are willing to work with them instead of against them and pointing fingers. Furthermore, special attention has to be paid to build the trust of the actors in the FAO as a neutral coordinator and facilitator of the platform.

There are several possibilities for the FAO to build trust between the actors, and from the actors in the FAO as a neutral coordinator of the platform. The FAO could for example invest in the trust of these actors by ensuring a discussion on the frames of consumption and the frames on the solution and instruments like certifications and regulations. These frames can then be given a place and all actors' points of view on these issues can be openly discussed. This reduces distrust between the actors and speculations on the intentions of the other actors. Furthermore, private sector representatives could be included in the steering group to give them 'a direct voice' in the platform, or the platform could look for a 'more neutral' way of financing. In case these actions turn out to be insufficient to gain the trust of (some of) the actors in the neutral position of the FAO, an independent process management could be appointed to coordinate the process.

- *Give a place to frames on consumption in the process*

As became clear in the analysis of the frames and the process, frames on consumption, especially the reduction of consumption as a solution to the environmental impacts of the livestock sector, exist among some of the participants of the multi-stakeholder platform but are to a large extent neglected in the platform. As is emphasized in the scientific literature, the systematic exclusion of frames can lead to stagnations in frame convergence. Since the platform aims to improve the *production* of livestock products, and focuses on resource use efficiency, it might be not the most logical solution to be included in this particular platform. However, it must remained to be seen whether or not the actors who do believe that the reduction of consumption could be a viable solution will remain satisfied with the exclusion of consumption related solutions. The actors could revert to these frames in a later stage of the platform which could frustrate the process. The FAO should therefore make sure that these frames are properly discussed and given a place in the process. This does not necessarily mean that they should be adopted as a solution, it merely means that the contradictory frames on consumption should be confronted so that frame reflection could take place and the frames on consumption can be given a place. This ensures that the actors cannot argue afterwards that the solutions were not considered.

- *Invest in causal and normative discussions on the 'rightness' of frames*

Due to the consultative character, and the set-up of the meeting, a lot of time was spend on mere informing the other actors on the specific situations of their region. As important as it was, both to give the actors an opportunity to express their views and inform the other participants on their specific situation, it compromised the time available for discussing the 'rightness' of frames. In order for frame reflection and frame convergence, it is necessary to have more causal and normative discussions on the frames. This will become especially important when more concrete solutions will be discussed in order to come to actual joint action. In further stages of the multi-stakeholder platform, the FAO should therefore ensure that there is sufficient time and room for discussing and reflecting upon frames.

Since the geographical spacing of the participants, electronic media could be used to accommodate debate and discussion among the actors. This could be done for example in the form of an electronic e-conference, blogs or inviting one participant every month to send in a thought provoking column for the website on which other participants could respond. Furthermore, in order to continue the stakeholders to keep being captivated and engaged in the process, the FAO should choose **one** channel of, transparent and easy accessible, communication to the participants of the platform. The website of the platform could be an appropriate medium to this. On the website, relevant information could be displayed like an update on the status of the global agenda of action, the dates of the upcoming meetings, relevant news and important publications.

- *Consolidate resource use efficiency*

The analysis of the frames indicated that common ground has been found in the frame of resource use efficiency. This concept has the ability not only to combine the three different aspects of the livestock sector which are perceived to be most important – food security, livelihoods and the environment- , but also to combine the aspects of the optimists sub-configurations. Since there is a general consensus on the focus on resource use efficiency, and its potential to combine the different frames, the FAO should therefore consolidate the focus on resource use efficiency again. This could be done by stimulating the signing of a declaration (either the Brasilia Consensus or a new one). (Re)consolidating the concept of resource use efficiency enables the FAO to use the concept as a stepping stone for further consultations.

- *Further expand country involvement*

And finally, the last recommendation is to further expand the country involvement. While the social variety does not picture a balanced country representation at the moment due to its initial and consultative phase, broader country involvement need to be sought to find a more balanced representation in the platform. This will ensure that all regions, with its sector specificities, are represented.

Discussion

This research is a study on the frames of the participants of the multi-stakeholder platform on responsible livestock, and the process of converging these frames. The qualitative and interpretative approach which is used to conduct this research has some limitations which are discussed in the methods chapter. This discussion will focus on further empirical and theoretical implications of the study.

First there are some empirical implications of the study. Hence, the analysis and the conclusions drawn in this research are based on the information provided by a limited number of participants of the multi-stakeholder platform. The conclusions are drawn based on the answers given by the respondents in the survey and the interviewees. Not all participants in the multi-stakeholder platform filled in the survey or participated in an interview. Conclusions on the existing frames and configurations, or missing frames and configurations, are thus based on the actors that participated in my survey or interview. Furthermore, the frames and configurations of frames among new actors in other regions, during the subsequent consultations, might differ. In an effort to be as inclusive as possible in identifying the frames, the research was based on the frames and configurations as identified in the desk study on the frames and configurations in the wider debate on livestock and the environment. Nevertheless, new actors might have other frames which are not identified in this research. A follow up research can be done to check if there are any new or different frames among the new actors. This research can however form as a starting point.

Second, the study has some theoretical limitations. Although multiple theories are used, the research makes some theoretical assumptions. By focusing on the importance of ideas and beliefs in reaching international cooperation, other aspects such as economic and political interests are not considered. This does not mean that they do not play a role at all in achieving cooperation. The fact that the Brazilian representatives did not want to officially approve the texts of the Brasilia Consensus while all actors at the meeting subscribed to the text, might indicate that political and/or economic interest came into play. These are not considered in this research.

Furthermore, the scientific literature on frame convergence differs on the required level of social and cognitive variety. Although the theory on configurations prescribes the inclusion of all stakeholders and cognitions, the theory on Advocacy Coalitions prescribes a medium level of conflict between the actors as ideal for frame convergence because it avoids the risk of getting stuck in unproductive ‘dialogues of the deaf’. Since the platform aims to improve the production of livestock products, the inclusion of extremist views who want to stop the production of livestock products rather than improve it, will most likely be counterproductive. However, in order for actors to reflect upon their frames, they need to be confronted with other frames. Since the platform includes actors that can be categorized in the combination-ist configuration, the pure optimists are still confronted with the frames on consumption. While the combination-ists are less radical and provocative as the extremistic pessimists are, the optimists are more likely to listen and learn from an combination-ist, than from an pessimist. Therefore, one could argue at not a total but at least some form of social and cognitive variety is required, which makes the inclusion of actors belonging to the combination-ists configuration sufficient for creating social and cognitive variety in the multi-stakeholder platform.

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Interviews

Desk Study

Agnes van Ardenne, Ambassador to the Permanent Representation of the Netherlands to the UN, Rome. 24-05-2011.

Arend Jan Nell, Former secretary of the International Conference on Livestock and the Environment in Wageningen, 1997. 03- 05- 2011.

Sophie Neve. Senior policy maker at the Ministry of Agriculture, Nature and Food Quality of the Netherlands. 22- 12- 2010.

Henning Steinfeld, Chief of FAO's Livestock Information, Sector Analysis and Policy Branch, Rome. 04-05-2011.

Jochem Porte, Policy maker at the Ministry of Economic Affairs, Agriculture and Innovation, the Netherlands. 22-12-2010.

Case study

Pierre Gerber : Livestock Policy Officer Animal Production and Health Division, FAO. 24-05-2011.

Sophie Neve. Senior policy maker at the Ministry of Agriculture, Nature and Food Quality of the Netherlands. 07- 06- 2011.

Simplice Nouala: Chief animal production officer, at the African Union Interafrican Bureau for animal Resources. 16-07- 2011.

Fernando Sampaio: Executive Director at the Brazilian Beef Exporters Association (ABIEC). 29-07-2011

Niek Schelling: Policy manager international veterinary and food affairs at Ministry of Economic Affairs, Agriculture and Innovation. 07-06-2011.

Jimmy Smith, Twam Leader Livestock at the World Bank. 13-07-2011

Henning Steinfeld, Chief of FAO's Livestock Information, Sector Analysis and Policy Branch, Rome. 26-05-2011.

Bryan Weech: MTI Commodity Lead, Livestock World Wildlife Fund (WWF) , 11- 07 -2011.

Appendix: Survey Questions

1. **Name:**

2. **Organisation:**

3.

Type of organisation:	
Government	
NGO	
Private sector	
International institution	
Research institute	

4. **What is the main problem of the functioning of the current livestock sector?**

5. **Please rank the following aspects of the problem in order of how important you think they are. 1 is the most important, 5 is the least important. If you do not think that the aspect is important at all, please fill in N.A.**

Aspect	1	2	3	4	5	N.A.
Food security						
Livelihoods						
Human health						
Environment						
Animal welfare						

6. **What is the environmental problem of the livestock sector?**

7. **Please rank the following aspects of the environmental problem in order of how important you think they are. 1 is the most important, 6 is the least important. If you do not think that the problem is important at all, please fill in N.A.**

Problem	**1**	**2**	**3**	**4**	**5**	**6**	**N.A.**
Greenhouse Gas emissions							
Pollution							
Depletion of natural resources							
Land use							
Deforestation							
Biodiversity							

8. **What is causing the environmental problems of the livestock sector?**

9. **Please rank the following causes in order of how important you think they are. 1 is the most important, 7 is the least important. If you do not think that the cause is important at all, please fill in N.A.**

Cause	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**N.A.**
The open nutrient cycles of intensive industrial production systems								
The excessive use of resources								
The low productivity levels of production of extensive production systems								
Land use and land use change for the production of livestock products								
Land use and land use change for the production of animal feed								
The high amount of livestock products consumed								
The type of livestock products consumed								

10. **What do you think should be the goal of changing the livestock sector?**

11. Please rank the following goals in order of how important you think they are. 1 is the most important, 6 is the least important. If you do not think that the goal is important at all, please fill in N.A.

Goal	1	2	3	4	5	6	N.A.
Improving food security							
Improving livelihoods							
Ensuring human health							
Improving animal welfare							
Improving the environment by reducing the environmental impact of the production of livestock products; thus improving the production							
Improving the environment by controlling the demand of livestock products; thus changing the consumption of livestock products							

12. **What do you think are the most effective solutions to solve the problem?**

13. Please rank the following solutions in order of how effective you think they are. 1 is the most effective, 5 is the least effective. If you do not think that the solution is effective at all, please fill in N.A.

Solution	1	2	3	4	5	N.A.
Closing the nutrient cycles of livestock production systems						
Improving the productivity levels of the production of livestock products						
Improving resource use efficiency						
Reducing the amount of livestock products consumed						
Changing the kind of livestock products consumed						

14. **Please rank the following instruments in order of how effective you think they will be in improving the environmental performance of the livestock sector. 1 is the most effective, 6 is the least effective. If you do not think that the instrument is effective at all, please fill in N.A.**

Instrument	**1**	**2**	**3**	**4**	**5**	**6**	**N.A.**
Technology							
Regulations							
Voluntary standards							
Certifications							
Economic incentives							
Raising awareness							

15. **Please indicate at what scale the problems, causes and the solutions, respectively of the livestock sector are lying. It is possible to give multiple answers.**

	Global	**Regional**	**National**	**Local**
Problems				
Causes				
Solutions				

16. **How would you define a responsible livestock sector?**

17. Please indicate to what extent you agree with the following statements:

Statements	I do not agree at all	I do not agree	I am neutral,	I agree	I totally agree
The environmental impacts of the current livestock sector are a problem.					
The problem of the negative environmental impact of the livestock sector is the way in which it is organized, not livestock itself.					
The problem of the negative environmental impact of the livestock sector is livestock itself, changing or restructuring the way the sector is organized will not solve the environmental problems related to the sector.					
The environmental performance of the livestock sector (the production of livestock products) can be improved.					
Improving the environmental performance of the livestock sector has a high priority.					
Other aspects of the livestock sector have a higher priority than the environmental aspects.					
Improving the environmental performance of the livestock sector is an urgent issue.					
International cooperation is necessary for improving the environmental performance of the livestock sector.					
The environmental problems related to the livestock sector are caused by the negative environmental impacts of the production of livestock products.					
The environmental problems related to the livestock sector are caused by the high amount of consumption of livestock products.					
Controlling the demand of livestock products could be effective for solving the environmental problems related to the livestock sector.					
It is not right to deny people the right to eat livestock products.					
It is not realistic that there will be a major reduction in consumption or a shift towards other types of animal products.					
Reducing the environmental impact of the livestock sector requires both improving the production and changing the consumption					

18.

Additional comments:

19. Please indicate to what extent you agree with the following statements:

Statements	**I do not agree at all**	**I do not agree**	**I am neutral,**	**I agree**	**I totally agree**
The form of a multi-stakeholder platform is an effective way of achieving international cooperation.					
I had enough opportunity to express my points of view during the conference.					
There was enough time and room for discussion and debate. All the points of view, which exist among the diverse stakeholders were discussed and considered during the meeting.					
My contributions to the debate were taken seriously.					
My points of view are well reflected in the outcome of the conference.					
The proposed directions of solutions will contribute to solving the problem.					
The conference has led to new ideas, which have not been discussed before.					
I have altered or adjusted the standpoint, which I had before joining the multi-stakeholder platform.					
I think that different points of view that existed among the participants of the multi-stakeholder platform have come closer together.					
The FAO is a neutral and appropriate agency to be coordinating the multi-stakeholder platform.					
The organisation, which I am representing, will or has committed itself to take action within the framework of this multi-stakeholder platform.					
The organisation, which I am representing, will or has committed itself to spend funding on solving the problem within the framework of this multi-stakeholder platform.					

20. **Additional comments:**

21.

Did you miss any relevant points of view in the multi-stakeholder platform?	**No**
	Yes, namely..

22.

Did you miss any relevant stakeholders in the multi-stakeholder platform?	**No**
	Yes, namely..

23. How can the platform best contribute to solving the problems of the livestock sector? Please choose the 3 most important ones.

Contribution	
Raising awareness	
Sharing Information	
Making better use of existing information	
Sharing experiences and best practices	
Stimulating concrete cooperation	
Developing regulations	
Developing standards	
Certifications	

24.

Would you like to add some additional information or do you have any other comments?