



**Utrecht  
University**

# The Dutch farmer as boundary object: Media frames and roles of the Dutch farmer pertaining the nitrogen crisis

Master Thesis Innovation Sciences  
Department of Geosciences, Utrecht University

Author  
Arvid van Leeuwen

Supervisor  
Dr. Koen Beumer

Second reader  
Dr. Jerry van Dijk

## **Abstract**

The current way of producing food is harming nature, which is especially present in countries with a relatively big agricultural sector. The Netherlands is dealing with a nitrogen crisis, mainly because of the immense agricultural sector. A societal controversy is present on what the role of the farmer in this crisis is. The media frames the crisis which leads to the attribution of roles to the farmer and fuels the controversy even more. This study seeks to find the roles that are attributed to the farmer. This research used the framing analysis method proposed by Benford and Snow to analyze newspapers and find the role of the farmer in diagnostic and prognostic frames present in these newspapers.

Three frames were found in which the farmer has a victim, protester or cause role. In the first frame the farmer is a victim of mainly governmental actions, but the solution linked to this frame shows that the farmer will have a better place in a new agricultural system. In the second frame the farmer is protesting because he does not feel heard and is not content with the proposed plans. He therefore wants to be included in conversations to help find a solution with his expertise. In the third frame the farmer is the cause of the crisis and therefore some articles mentioned that he needs to be bought out. However, this mainly applies to peak polluters and farmers close to Natura 2000 areas.

These findings have societal implications for instance the uncertainty that farmers experience, the public perception towards them and the understanding of their story. These findings have academic implications building on the use of an actor as a boundary object and analyzing roles in a sustainable transition.

The findings of this research urge governments to listen and talk to farmers as they have practical knowledge and ideas about solutions to make the current way of producing food more sustainable. Not talking to them will fuel anger, which does not contribute to a smooth sustainable transition of the agricultural sector.

## **Keywords**

Boundary object, Media framing, Roles, Nitrogen crisis, Netherlands, Sustainable transition

<b>1. Introduction</b>	<b>3</b>
<b>2. Theoretical framework</b>	<b>8</b>
2.1 Literature on the framing of farmers	8
2.2 Concept of boundary objects	10
2.3 Actor roles in sustainable transition and the role of the farmer	11
<b>3. Methodology</b>	<b>13</b>
3.1 Framing analysis	13
3.2 Datasource & Dataset	16
3.3 Data analysis	18
<b>4. Results</b>	<b>21</b>
4.1 General results	21
4.2 Frames and roles	23
4.2.1 Frame 1 - Farmer as victim	26
Diagnostic frame	26
Prognostic frame	28
4.2.2 Frame 2 - Farmer as protester	29
Diagnostic frame	29
Prognostic frame	30
4.2.3 Frame 3 - Farmer as cause	32
Diagnostic frame	32
Prognostic frame	33
<b>5. Conclusion &amp; Discussion</b>	<b>36</b>
<b>6. References</b>	<b>43</b>
<b>7. Appendix</b>	<b>47</b>

# 1. Introduction

## *Negative consequences of agriculture*

The agricultural sector is the second most polluting sector in the world when looking at CO<sub>2</sub> emissions. Studies range on the exact numbers, but a safe conclusion can be drawn that it accounts for at least 20% (Gaugler et al., 2020). Subsequently, the agricultural sector uses high amounts of nitrogen in the form of fertilizers, where 30-80% is lost to surface and groundwaters, and to the atmosphere (Rasmussen et al., 1998). Nitrogen is also produced by livestock in the form of ammonia (NH<sub>3</sub>), which has a short atmospheric lifetime and also deposits on terrestrial and aquatic ecosystems (van Damme et al., 2021). The nitrogen excess causes biodiversity loss and a decline in drink water and air quality (Erisman, 2021). Furthermore, the high input agricultural sector causes soil degradation and eutrophication (Spiertz, 2009). For these reasons, the agricultural sector is not sustainable as it is harming nature, which is especially visible in countries where the agricultural sector is relatively big.

## *Example of The Netherlands and the Dutch nitrogen crisis*

A good example of a country where the agricultural sector is relatively big is The Netherlands. The Netherlands is ranked as the second largest agricultural exporter in the world with a land area that is 270 times smaller when compared to the US, the number one. The Dutch agricultural sector is highly productive, innovative, diverse and export oriented with agri-food products accounting for 20% of the total export value of the Netherlands (Erisman, 2021).

However, this enormous production comes with a price. The Netherlands has been dealing with a nitrogen excess for over thirty years, which can be mainly attributed to the agricultural sector (Van Damme et al., 2021). Ammonia emissions have been reduced by 60% since the 1980s by practices such as injecting liquid manure in the soil instead of spraying it on the soil and installing air scrubbers on pig and poultry facilities that reduce harmful emissions.

In spite of these measures, the emissions have risen again since 2014 (Stokstad, 2019). In 2015, 118 of 162 Dutch nature reserves still experienced ecological risk due to nitrogen excess. These areas are labeled as Natura 2000 areas, which are protected areas under the European Habitat Directive (Council Directive 92/43/EEC). The Dutch government is therefore obligated to protect those areas against biodiversity loss.

To protect these areas, the Dutch government proposed the Integrated Approach to Nitrogen (In Dutch: Programmatische Aanpak Stikstof, PAS) (Min. Gen. Aff., 2023). The PAS was basically a nitrogen-licensing or permit system, where businesses were allowed to emit nitrogen when compensated for with technical or natural restoration measures that delivered emission reduction in the future (Erisman, 2021).

However, the PAS did not satisfy environmental groups. They sued the Dutch government and the case ended up in the European Court of Justice, who advised the Dutch government that the PAS was not strict enough to protect the Natura 2000 areas (Stokstad, 2019, van Damme et al., 2021). This advice led to several rulings by the Dutch high court in May 2019 and 18000 projects related to expansion of farms and projects on building houses and roads were put on hold, because of their nitrogen emissions. The moment of the ruling leading to the pause in the building sector was coined as the start of the nitrogen crisis (van Damme et al., 2021).

The government proposed a policy to halve the livestock population to reduce nitrogen emissions which led to outrage and protests from farmers (Stokstad, 2019). The farmers blocked highways and a food distribution center and set fire to haybales on the side of the

roads. (RTVOost, 2019). Newspapers covered the crisis and the protests and the public voiced their opinion on the situation.

### *The nitrogen crisis as societal controversy*

The debate in newspapers and public spheres is one of the reasons why the nitrogen crisis became a societal controversy where the farmer is put forward as the central figure. Another reason why the nitrogen crisis is a societal controversy, is because it involves a diverse group of stakeholders with conflicting interests and values. For example, farmers may prioritize maintaining their livelihoods and economic viability, while environmentalists may emphasize the protection of natural habitats and biodiversity. Similarly, policymakers must balance economic growth with environmental sustainability.

Subsequently, the nitrogen crisis poses challenges with economic and social impact. For example, restriction on nitrogen emissions can affect agricultural productivity and construction and infrastructure projects.

Furthermore, the crisis poses legal challenges as addressing the emissions will require implementing policy and regulation. This can spark debate as different stakeholders have different views on the best approach.

Lastly, as mentioned before, the nitrogen crisis has seen immense amounts of public attention and widespread debate. Media coverage, public demonstrations and citizen discussions show the societal controversy around the issue. Especially the media is actively engaging in discussing the cause, consequences, and potential solution to the crisis, with the farmer caught in the middle of the debate. The media is attributing roles to the farmers, with the farmers standing on the sideline in this discussion.

These roles are an interesting topic to study, as this will influence the controversy and can tip people's opinion on what role the farmer has in both the nitrogen crisis itself, as in the future of the agricultural sector. Attributing negative roles can lead to a negative view on farmers and can therefore lead to less empathy and help for the farmers. On the other hand, positive roles can lead to favorable policy and sympathy for the farmers (Oyeoku et al., 2021). The role that the farmer is attributed by the media will influence the outcome of the crisis, the future of the agricultural sector and the future of the farmer and is therefore critical to study. However, this has not yet been studied.

### *Previous studies on the nitrogen crisis*

The Dutch nitrogen crisis has already been studied from a lot of other perspectives. These studies range from explaining the crisis itself (Stokstad, 2019), to policy used during the nitrogen crisis (Boezeman et al., 2023, Galloway et al., 2021), to using the crisis as a case study to look at emissions trends or the unsustainability of the agricultural sector (Van Damme et al., 2021, Galloway et al., 2021, Erisman, 2021), to the underlying reasons of the farmers protests (van der Ploeg, 2020), to the use of actors, including farmers, in the portrayal of the nitrogen crisis in Dutch newspapers (Visscher et al., Preprint).

To elaborate on these studies. Stokstad (2019) summarized the events and regulations leading up to and resulting from the nitrogen crisis including information on the PAS, agricultural emissions and farmer protests.

There are two studies that focussed on the implemented policy during the nitrogen crisis. Boezeman et al. (2023) studied the characteristics of buyout schemes as policy instruments in four EU member states, including the Netherlands. Galloway et al. (2021) studied reactive nitrogen creation on a global and regional basis and used the nitrogen crisis in the Netherlands as case study to explain what a country can do to address the problems

that come with a nitrogen excess and evaluate what worked and what didn't work in the Netherlands.

There are two studies that focused on the environmental issues around the agricultural sector during the nitrogen crisis. Van Damme et al. (2021) used the Dutch nitrogen crisis and farmers in the Netherlands as a case study to explain ammonia emission trends and test ammonia emission data. Erisman (2021) looked at the Dutch economic success from food production and the resulting environmental issues focusing on the nitrogen crisis.

One study engaged the nitrogen crisis from the perspective of the angry farmer. Van der Ploeg (2020) studied the nitrogen crisis from a sociological perspective and aimed to unravel the underlying reasons for the outburst of the Dutch farmers and links it to regressive populism.

Finally, there is one study that looked at the use of farmers in the media during the nitrogen crisis. Visscher et al. (Preprint) looked at predefined frames and the use of actors, including farmers, in these frames. This study focused on the difference between certain newspapers and the link between used actors and frames used in newspaper articles. However, this research used a quantitative approach to study the use of actors in media content regarding the nitrogen crisis and did not research the role of the farmer that is attributed to the farmer.

There is also a body of literature that did not specifically look at the nitrogen crisis, but studied nitrogen emissions by the Dutch agricultural sector and analyzed the adoption of sustainable farming methods where nitrogen emissions are reduced. These studies include measurements such as agri-environmental schemes (Kleijn et al., 2001), nature inclusive farming (Runhaar, 2017; Vermunt et al., 2022), soil conservation practices (Bijttebier et al., 2014) and soil emissions mitigation strategies (Gomes and Reidsma, 2021).

In conclusion, the current body of literature on the nitrogen crisis covers a lot of aspects, but lacks knowledge on the role of the farmer in the nitrogen crisis.

#### *Dilemma of the role of the farmer*

The question of what the role of the farmer is therefore remains unclear. On the one hand it seems he is to blame. Farming practices are not sustainable, because of greenhouse gas and nitrogen emission, monocultures and the use of pest- and insecticides. There is a broad availability of technologies and practices to make farms more sustainable, such as precision farming and organic agriculture, but the adoption of these practices is limited (Bijttebier et al., 2014). Factors such as lack of awareness or resistance to change could be reasons that hinder widespread adoption and lead to the assigning of blame to the farmer.

On the other hand, the farmer seems to be a victim. The Farmer is a victim of inadequate or inconsistent government policies and regulations, as can be seen with the implementation and rejection of the PAS. Subsequently, transitioning towards a more sustainable way of farming comes with a significant financial investment. Many farmers may lack the financial resources to make this transition as they took out loans to intensify their farms, which was promoted by the government, banks and knowledge institutions such as Wageningen (van der Ploeg, 2020).

#### *Importance of this study*

Understanding the dilemma of what the role of the farmer is, is critical for the Dutch farmer and for the crisis itself. The role of the farmer is framed by the media which influences public perception (Georgakopoulou and Goutsos, 2004). Analyzing these roles and frames provides insights into prevailing narratives, stereotypes and public attitudes towards farmers and

agriculture. These public attitudes and opinions can influence policy and decision-making as negative newsframes can lead to less policy or help (Oyeoku et al., 2021).

Subsequently, framing of roles by the media has the potential to shape societal norms, values and beliefs. This is interesting to study as changes in these norms, values and beliefs can give opportunities for change (Wittmayer et al., 2017). This can help identify opportunities for a more equitable, sustainable, and socially just agricultural transition.

#### *Research question, methods and theoretical framework*

To better understand the role of the farmer, I will answer the following question:  
What roles are attributed to farmers pertaining to the nitrogen crisis?

I will study this by looking at the Dutch media, and in particular, Dutch national newspapers. A reason to study this in the Dutch media is the shaping of public perception, which is mentioned in the previous paragraph. Secondly, national newspapers are a platform for diverse stakeholder voicing their opinions and perspectives. This gives an excellent broad view on the roles that are attributed to the farmer.

I will study the attribution of roles by the media by making use of content analysis and more specifically framing analysis. I will use the concept of boundary objects as a theoretical starting point and look at the change of roles in a sustainable transition proposed by Wittmayer et al. (2017), which will all be explained in greater detail in the theoretical framework and methods chapters.

#### *Societal relevance*

Studying the role of the farmer is societally relevant for three main reasons. Firstly, understanding the role of the farmer is critical in understanding the uncertainty and frustration that the Dutch farmer is going through. The Netherlands has been dealing with the nitrogen crisis for five years now. During this time, the Dutch government has tried to implement a number of policies and regulations, but with no success in solving the crisis. The countless promises of solving the crisis and policies and regulations targeting the farmer led to uncertainty for his farm and for his future. This uncertainty eventually led to frustration of the farmer, leading to the immense protests. To solve the crisis, collaboration between the farmer and the government is necessary, however, the relationship between them is worse than ever. Understanding the role of the farmer gives a better understanding of his story and frustration and can therefore facilitate dialogue and collaboration between the farmer and the government or policy makers to solve the crisis.

Secondly, it is important to study the role of the farmer in Dutch newspapers as the Dutch media influences public perception and attitudes towards farmers. The framing of negative roles can lead to negative perception of the public, which fuels the frustration of farmers even more. Subsequently, these public attitudes and opinions can influence policy and decision making as mentioned before (Oyeoku et al., 2021). Understanding the role of the farmer can help understand the perception of the public and therefore the influence on policy making.

Lastly, understanding the role of the farmer in the solution of the nitrogen crisis mitigates uncertainty for the farmer. As mentioned before, The Netherlands has been dealing with the nitrogen crisis for five years now, which gives the Dutch farmer a lot of uncertainty. This uncertainty is fueled by changing plans and a lack of future direction. The agricultural sector needs to become more sustainable, but the role of the farmer in the direction and process of this transition is unknown. Understanding the role of the farmer in the future of the agricultural sector will relieve this uncertainty.

### *Academic relevance*

This study will academically contribute to the body of literature on boundary objects, actor roles in sustainable transitions and the framing of farmers. Firstly, this study answers the call of Beumer and Swart (2021) to look more into the use of an actor as a boundary object. Beumer and Swart studied how African farmers are represented in discussions on genetically modified crops. However, these discussions had a major influence on the farming practices and future of the African farmer. I will build on their use of the concept by studying it in the context of the Dutch nitrogen crisis. I will study the use of the Dutch farmer as a boundary object in Dutch newspapers instead of discussions and will therefore combine their use of the concept with a framing analysis.

Secondly, I will build on the study by Wittmayer et al. (2017), who proposes to look at social roles to analyze sustainability transitions. Wittmayer and her team conclude that changes in roles and role relations are indicative of changes in the social fabric including shared values, norms and beliefs. They also conclude that studying roles allows for considering roles as a transitioning governance intervention, which includes the creation of new roles, breaking down or altering existing ones and explicitly negotiating or purposefully attributing roles (Wittmayer et al., 2017). In my research, I will dive deeper in the broader concept of social roles and operationalize the roles concept by studying the roles attributed to Dutch farmers by the media. I will seek to find different roles of the farmer in the nitrogen crisis. These different roles are used to study the sustainability transition that is unfolding in the agricultural sector.

### *Overview of the thesis*

In the next chapter, I give the theoretical background of this research, diving deeper into the body of literature on framing of farmers, the concept of a boundary object and the link between actor roles in sustainable transitions and the role of the Dutch farmer. Chapter 3 describes the methods used, including the sampling of newspapers, coding of the articles and analysis of the frames and roles. Chapter 4 presents the findings of this research. Chapter 5 concludes the research and discusses the findings in relation to earlier research and gives future directions for further research.



## 2. Theoretical framework

The current body of literature on the framing of farmers is addressed in this chapter. Secondly, the concept of boundary object is explained as I argue that the Dutch farmer is used as a boundary object to talk about the nitrogen crisis. Subsequently, the role of actors in sustainable transitions is explained together with the link to the role of the Dutch farmer.

### 2.1 Literature on the framing of farmers

The nitrogen crisis has been studied extensively, as mentioned in the introduction, but the framing of Dutch farmers by the media has not yet been studied. There is one study that studied the use of actors, including farmers, in the portrayal of the nitrogen crisis in Dutch newspapers (Visscher et al., Preprint). Visscher et al. studied the use of actors, such as politicians, environmental experts, farmers or construction workers, by the media in predefined message frames. The predefined message frames were Attribution of responsibility, Human interest, Conflict, Morality, and Economic consequences.

Attribution of responsibility was the most used frame and governmental actors were used the most in regard to this frame, farmers were less present in that regard. The human-interest frame was the third used frame and mostly consisted of articles painting farmers and construction workers as victims of the crisis.

Visscher et al. (Preprint) studied predefined frames and studied the quantitative use of actors instead of qualitatively studying the framing of them. Secondly, they studied the use of actors in general, not focusing on farmers explicitly. Farmers were only mentioned in 8.9% of the newspaper articles studied and therefore a specific conclusion on the framing of farmers could not be drawn from their results. This still leaves a knowledge gap on the exact roles of farmers that are framed by the media, which I will address in my research.

There are other studies that looked at framing of Dutch farmers by other institutions than the media. For instance, Janssen et al. (2022) looked at the framing of stakeholders, including farmers, in two agricultural stakeholder networks in the Netherlands. These networks consisted of regional government actors, scientists, small to medium enterprises and farmers with the goal of envisioning a future for dairy farming and facilitating green, circular innovations (Janssen et al., 2022).

The results showed that farmers were seen as stewards and artisanal entrepreneurs. Stewards are typically very concerned with the biodiversity on their land and in their soil and artisanal entrepreneurs resist radical change and want to maintain the regional landscape as is. Janssen et al. (2022) did not specifically look at media framing and did not study the nitrogen crisis specifically. Therefore, a knowledge gap is still present regarding the framing of Dutch farmers, which I will study in this research.

Outside of the Netherlands, several studies have been conducted on the framing of farmers. An example of a body of literature are studies on the framing of farmers during a conflict between farmers and herdsmen in Nigeria. The conflict started with nomad livestock breeders being displaced from their places by, especially, climate change. They moved into farmland, causing conflict with the local farmer population. The conflict already led to hundreds of attacks and thousands of deaths (Oyeoku et al., 2021). The conflict has been extensively reported in the Nigerian news, as conflict is a naturally attractive source for news (Msughter et al. 2021). There are several studies that looked at the framing of farmers in this conflict.

For instance, Oyeoku et al. (2021) analyzed newspaper, TV and radio stories on the conflict to quantify pre-defined frames used to portray the farmers and herdsman, study the language of the framing and study the suggestion of solutions. They found that the 'fear frame' was the most used frame, which corresponds with the projection of more situations that could lead to conflict, leading to hopelessness for the farmers and herdsman. They also found that generally, most of the stories did not recommend how to address the problem and when they did, it was mostly short-term solutions. They concluded that the manner of media framing of the conflict substantially plays a role in whether the conflict receives assistance or not, which was in line with earlier findings by Steimel (2010).

These findings are interesting when looking into the framing of the Dutch farmer pertaining to the nitrogen crisis. The role that is attributed by the media to the farmer, being positive or negative, can have a major influence on whether or how much assistance they can expect. This assistance being policy, rules, regulation or financial help.

Another research studied the news coverage of the conflict and farmers' viewpoint on that coverage (Apuke and Omar, 2022). This study used quantitative content analysis of news reports on the conflict and found that the articles gave little attention to the opinion of the farmers and herdsman in the conflict. The articles lacked objectivity and made use of negative language and framing of the conflict. The interviews with the farmers misaligned with these findings which, in the case of the farmers and herdsman, led to confusion and anger.

This again, is an interesting finding when compared to the context of the Dutch farmer. The Dutch farmer is also confused and angry, as can be seen by the countless protests. They feel pressured by the government and their proposed policy and being at the center of media attention will not help to release this pressure (van der Ploeg, 2020).

The misalignment of media frames with the opinions of farmers is not in the scope of this research, however, if negative framing of farmers is present, this is not helping to relieve the pressure on the farmers and on the crisis. The media has an important role in promoting information in an honest and accurate manner, but also has the ability to either escalate or de-escalate conflict situations (Msughter et al., 2021). It is therefore critical to study the framing of farmers by the Dutch media as attributed negative roles can have escalating effects and positive roles can have de-escalating effects.

In conclusion, the array of studies focusing on the Dutch nitrogen crisis is extensive, but only includes summaries of events, studies on sustainable farming methods, specific identity formation or the use of actors in the media. It lacks a good insight into the framing of farmers and the attributed role of the farmer in the crisis. Academic literature on farmer framing outside the Netherlands exists, but is very specific to the context of, for instance, farmers and herdsman in Nigeria and it is therefore hard to extrapolate these results onto the Dutch farmer.

This research will fill the research gap by finding frames used by the Dutch media to represent Dutch farmers during the nitrogen crisis and the role that the farmer is attributed in these frames. This is societally relevant to understand the uncertainty and frustration of the Dutch farmer, to understand public perception and attitudes towards farmers and to understand the role of the farmer in the agricultural sustainable transition and therefore the future of the agricultural sector. Secondly, this study is academically relevant as it goes more deeply into the use of actors as boundary object and combines this with framing analysis. Subsequently, this study dives deeper into the broader concept of social roles in sustainable transitions by studying the attributed role of the farmer in the transition of the agricultural sector.

## 2.2 Concept of boundary objects

The concept of boundary objects is used as a theoretical starting point, because I argue that the Dutch farmer is used as a boundary object in the debate on the nitrogen crisis. To make the argument, I first explain what a boundary object is and the origin of the concept, before diving deeper into the use in this study.

A boundary object is an object or artifact that serves as a common point of reference to help communication and collaboration (Star and Griesemer, 1989). The concept was developed by Susan Leigh Star and James Griesemer when setting up Berkeley's Museum of Vertebrate Zoology with a group of interdisciplinary scientists, which is also the most used example to explain its use. The museum exhibits acted as boundary objects as the exhibit appealed to a broad range of researchers with different interpretations of the objects, but also created a shared point of reference to allow communication. The exhibits therefore enabled cooperative work in the absence of consensus, which is the goal of a boundary object.

To enable cooperative work in the absence of consensus, boundary objects need to be flexibly interpretative. The object needs to be flexible enough to be understood by different actors, but also have sufficient similarities for both actors to allow communication. Boundary objects are explained as communication devices that create a common language to talk about certain subjects in an interdisciplinary setting (Star, 2010). The concept has been widely used, but particularly in the field of knowledge management (Trompette and Vinck, 2009).

Star reflected on her concept in 2010 and concluded that the object was used in a very broad sense (Star, 2010). In the academic literature, boundary objects like ceramics (LeMoine et al., 2022), engineering tools (Hussmo et al., 2022) or fracking (Metze, 2014) are used as a communication device to talk about politics, product development or the use of fossil fuels respectively. Literature on climate change have used fracking (Metze, 2014), climate change games (McKittrick, 2022), sociotechnical imaginaries (Carvalho et al., 2022) or ecosystem restoration (Aasetre et al., 2022) as boundary objects to initiate, spike or enable debate.

Furthermore, Star concluded that the boundary object itself is not the subject to study, but the use of the boundary object as basis for conversation. Language, phrases and codes used to talk about the boundary object are important to study the cooperative work the boundary object enables (Star, 2010).

Despite the conclusion of Star that a boundary object itself is not the subject of study, Beumer and Swart (2021) argued that it could be useful to study the boundary object itself in some cases. In their study, Beumer and Swart use the concept in studying how African farmers are represented in discussions on genetically modified crops. In their study, the boundary object was a group of people instead of a material thing, theory or method, which is how the literature on boundary objects had predominantly applied it. They argued that in this case, the boundary object may better be referred to as a boundary figure.

Beumer and Swart studied the use of the African farmer as a boundary figure in discussions about genetically modified crops and biotechnology in Africa. This debate around the boundary figure had major influence on the future of the African farmer and their farming practices, especially considering that the farmer did not have a major voice in this debate. In this case, it was therefore valuable to not only look at the cooperative work the boundary object enabled, but also investigate the effect of using the farmer as a communication device on the farmer himself.

After the introduction of the concept of boundary objects and the notion of boundary figures, I can now argue that the Dutch farmer is used as a boundary object to talk about the nitrogen crisis. The Dutch farmer serves as a boundary object by facilitating discussions between various stakeholders, such as policymakers, environmentalists, scientists, and the general public. These discussions are enabled because the Dutch farmer acts as a common point of reference. Farmers and farming are tangible and relatable concepts that facilitate communication between the various stakeholders. Everyone has a view on what a farmer is and does and therefore it is used as a tool to simplify complex issues into a narrative that is accessible and understandable across different groups.

Despite the common view on the farmer which enables discussion, there is also interpretative flexibility regarding the role of the farmer in the nitrogen crisis. These differences enable people to take a stance in the debate. Some stakeholders may view farmers as victims of the crisis, while others may see them as contributors to the unsustainability of the agricultural sector.

In conclusion, as Beumer and Swart (2021) indicated, using a group of people as a boundary object, or rather a boundary figure, can have implications and consequences for the people used. This also translates to the case of the Dutch farmer, who is used as a boundary object to facilitate communication in addressing the complex and multifaceted challenges associated with nitrogen emissions, sustainable agricultural practices and the nitrogen crisis. Stakeholders create roles for the farmer when discussing the nitrogen crisis and using the Dutch farmer as a boundary object. These roles are the subject of study in this research.

### 2.3 Actor roles in sustainable transition and the role of the farmer

After explaining the concept of a boundary object as a theoretical starting point, I will now explain how this study builds on actor roles in sustainable transitions proposed by Wittmayer et al. (2017) and explain the link to the changing role of the Dutch farmer.

Wittmayer et al. (2017) propose to look at roles to analyze interactions and relations in sustainable transitions. They argue that roles are shared conceptions within a particular community and a change in role understanding can indicate changing interactions and relations between actors within such a community, and therefore, roles are indicative of change. The fact that roles are changing is not new. Roles are never predefined and static, but roles are in process of being constructed, deconstructed, contested, as well as enacted, made and used (Biddle, 1986, Hilbert, 1981).

The role of the farmer has been static for decades, but is now at stake and in the process of change. For a long time, the role of the farmer has been production-oriented, where farmers were seen as caretakers of the nation's food supply (Burton, 2004). However, scholars have found that these roles have recently been shifting, from a conservative and productionist role towards a progressive, post-productionist and environmentally conscious role (McGuire et al., 2013, Janssen et al., 2022). Following Wittmayer et al., this change in roles can be indicative for a sustainable transition in the agricultural sector.

This change in roles will have both an impact on society and on the farmer himself. As Wittmayer et al. states it, 'a single role always relates to one or more other roles and a change in one has consequences for others'. The role of the farmer is intertwined into society as he produces our food and takes care of the landscape. As his role changes, so will the relation

with other roles, which will have an impact on society as a whole. This is one of the reasons why it is very important to look at the role of the Dutch farmer.

Another reason is the impact on the farmer himself. A change in his role will mean a change in his livelihood and his profession. The impact will be especially huge because the role change is not filled in by the farmer himself, but by society, which in turn is influenced by the media. The farmer will therefore have little say in their own future.

Studying and understanding the role of the farmer is critical for two reasons. Wittmayer et al. mention 'the persistent nature of societal problems derive from the fact that actions tend to build on 'old' role understandings, rather than explicitly questioning current ones'. The 'old' role of the farmer is understood, but a clear view on the current role of the Dutch farmer in the crisis and the future of agriculture is lacking. Understanding this role can help both end the crisis and gain a direction in the sustainable agricultural transition.

Another reason why studying the role of the farmer is critical, is because it gives insight into the multiple roles that are present. Wittmayer et al. state that roles can be described as a set of recognizable activities and attitudes used by an actor to address recurring situations, roles are therefore described as ideal- or stereotypes. However, roles are also socially constructed and therefore open for negotiation and change. Open interpretation of the role of the farmer caused different roles to be present, especially, because the role of the farmer is changing as mentioned in the previous paragraph. This leads to multiple stereotypes and nobody knows what the ideal type is, as every role has its own recognizable activities and attitudes. This leads to confusion, both in society and for the farmer, who does not know what his role is anymore. Studying the role of the farmer gives insight into this dilemma.

### 3. Methodology

The link between roles and frames will be explained in the following chapter. I will dive deeper into what a framing analysis entails and how this method is used. Secondly, the choice of newspapers as a datasource will be clarified and the methods used to establish the set of articles will be explained. Thereafter, the coding process will be explained and at the end of this chapter, I will explain the method used for the interpretation of the codes that led to my results and conclusion.

#### 3.1 Framing analysis

In this research, I seek to find what roles are attributed to the Dutch farmer by the Dutch media. The media attributed these roles, unintentionally or not, when using the farmer as a boundary object to talk about the nitrogen crisis. The media covers topics by framing the farmer in a certain way, which attributes different roles to the Dutch farmer. Framing is both used as a verb and a noun. The media frames subjects with the use of frames. Framing analysis can then be used as a method to find these frames.

The frames are also known as narratives or stories and within these stories, the farmer has a certain role. *Figure 1* shows an example to clarify this. When framing a subject, the media selects aspects of reality and makes them more salient in their article (Entman, 1993). These aspects of reality create a story around the farmer.

For instance, an article could talk about farmers who have been producing food for our country for as long as we know and they have been doing this in harmony with nature. The role of the farmer in this story is positive and can be formulated as 'farmers are producers of food'.

Another example could be a newspaper on the negative consequences of farming methods. In this article the media will create a frame about the farmer that is harming nature because he intensifies his farm, uses monocultures and pest- and insecticides all to create more profit for himself. In this frame, the role of the farmer can be formulated as 'farmers are the cause of problems'.

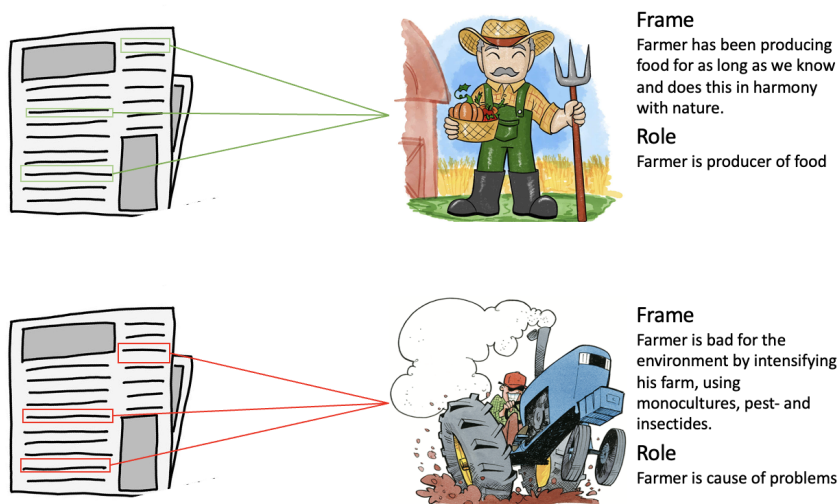


Figure 1: Depiction of the relation between frames and roles.

These frames, and therefore the roles, can be found using framing analysis, but before I dive deeper into the explanation of what that entails, I first want to clarify the difference between content, discourse and framing analysis.

Content analysis is commonly defined as ‘a research technique for making replicable and valid inferences from text’ (Drisko and Maschi, 2016). This is a very broad term and therefore, content analysis is most commonly used as an overarching meaning of studying communication phenomena such as media coverage, political speeches, or online discussions. Content analysis aims to uncover patterns and trends in the content, such as frequency of certain topics, portrayal of key actors, use of language, or framing techniques (Drisko & Maschi, 2016).

Discourse analysis examines how language is used in communication to construct meanings, identities, and social realities. Discourse analysis looks between the words and lines to uncover underlying discursive patterns. Subsequently, discourse analysis also looks at the social, cultural and political context in which the communication takes place and therefore studies how text can construct meanings and social realities (Georgakopoulou and Goutsos, 2004).

Framing analysis examines how media frames shape the way information is presented and interpreted by audiences (Pan & Kosicki, 2010). Framing can be defined as selecting some aspects of perceived reality and making them more salient in the communicating text (Entman, 1993). Therefore, framing analysis seeks to identify the frames or narratives regarding a subject that influence audience perceptions, attitudes and behaviors regarding that subject.

I seek to find what roles are attributed by the media to farmers pertaining to the nitrogen crisis. I made use of content analysis as this technique is used for making inferences from text regarding the portrayal of key actors. More specifically I used framing analysis to find frames regarding farmers and the nitrogen crisis. These frames are selected aspects of reality that form a narrative or story in which the farmer has a role. These frames and roles of farmers influence perception, attitudes and behaviors regarding the farmer and are therefore critical to study.

Discourse and framing analysis show a lot of overlap as discourse analysis examines how identities are constructed, which can be compared to frames of actors. However, discourse analysis also looks at the social, cultural and political context, which is not in the scope of this research.

Now that we understand that difference, we can dive deeper into frames and the methods to find them in text. Framing has become one of the guiding methods in the study of news coverage and has been used by social scientists for decades (Vliegenthart, 2012). A commonly used definition of frames is the definition from Entman (1993): “A frame repeatedly invokes the same objects and traits, using identical or synonymous words and symbols in a series of similar communications that are concentrated in time. These frames function to promote an interpretation of a problematic situation or actor and, implicit or explicit, support of a desirable response, often along with a moral judgment that provides emotional change”.

In other words, a frame is an interpretation of an object with the use of specific words or symbols. Moreover, a frame is repeated in a concentrated time period and can therefore be found by analyzing content that mentions that frame within that time period.

Entman (1993) also defined framing as “selecting some aspects of perceived reality and making them more salient in the communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation and/or treatment

recommendation”, which he called the frame elements. A problem definition can consist of an issue and relevant actors that discuss the problem. A causal interpretation is a cause of the specific problem addressed. An evaluation can be positive, negative, or neutral and can refer to different objects. Finally, a treatment recommendation can include a call for or against a certain action (Matthes and Kohring, 2008).

Entman based his definition on earlier work on the framing of social movements done by Snow and Benford (1988). Snow and Benford distinguished three tasks or elements that are used to effectively frame a subject: (1) a diagnosis of some event or aspect of social life as problematic and in need of alteration; (2) a proposed solution to the diagnosed problem that specifies what needs to be done; and (3) a call to arms or rationale for engaging in ameliorative or corrective action (Snow and Benford, 1988). Some of these aspects can be found in the definition of Entman.

Snow and Benford later combined their earlier work with the work done by Entman and articulated the usefulness of their first two framing tasks (Benford and Snow, 2000). The diagnosis of the problem and cause, and the prognoses, regarding the proposed solution. The diagnosis is related to the problem definition and causal interpretation from Entman (1993), where the prognoses links to the treatment recommendation. This approach of looking at the diagnoses and prognoses of a problem framed by the media was adopted in multiple studies on for instance the media framing of Roma across Europe (Kroon et al., 2016) and the media framing of immigration and integration in the Netherlands (Vliegthart and Roggeband, 2007). This approach to framing analysis was adopted to look more closely into problem and solution attribution.

I used the approach by Benford and Snow (2000) in my research to look more closely into the role of the farmer in the problem and the solution of the nitrogen crisis. This method offers the opportunity to find frames in a systematic and theoretically grounded way. Matthes and Kohring (2008) argue that it is hard to find entire frames in text and therefore frames need to be understood as a pattern of elements, such as the elements proposed by Entman (1993). Rather than coding frames as a whole, frames can be found by predefining these elements and coding content variables within the elements. The operationalization of this method will be explained in greater detail in the data analysis section.

After understanding frames and frame elements, it is also important to understand the difference between generic and issue-specific framing analysis. De Vreese (2005) offers a clear typology: “Certain frames are pertinent only to specific topics or events. Such frames may be labeled issue-specific frames. Other frames transcend thematic limitations and can be identified in relation to different topics, some even over time and in different cultural contexts. These frames can be labeled generic frames”.

Generic news frame analysis looks at predefined frames that are applied to a certain topic. As the frames are predefined and widely used, opportunities for systematic comparison and theory building arise. Because generic news frames are always predefined, the method is used deductively and mostly quantitatively (Vliegthart, 2012).

Issue-specific research looks at a specific issue with an advantage that it allows for a more detailed account of the issue at hand. However, because the frames are defined in a specific context, systematic comparison of results is difficult. Issue-specific research can use both a deductive or inductive approach and is therefore used in both quantitative and qualitative research. In the deductive approach, frames are defined prior to the analysis and quantifying them is the goal. In the inductive qualitative approach, the frame identification process is an important step, and often the goal of a research (Vliegthart, 2012).



The goal of this research is to find new frames inductively with a qualitative approach and to find these frames with detail to the issue, therefore I chose to study issue-specific news frames. Subsequently, the classification in diagnostic and prognostic framing elements turns out to be useful to systematically identify issue-specific frames (Vliegthart and Roggeband, 2007).

Lastly, to make this study comparable to previous literature, I call upon a study done by Kroon et al. (2016). This study also used issue specific framing to look at diagnostic and prognostic framing, but in their case, of Roma in Europe (Kroon et al., 2016). In this study, Kroon et al. looked at the portrayal of a minority group and studied under which circumstances the problem was attributed to actions and behaviors of Roma, which they call perpetrator framing, compared to when they are seen as the victim of their hostile environment, which they call victim framing. This perpetrator/threat and victim framing is researched more extensively in the context of asylum seekers, refugees and migrants (Van Gorp, 2005; Leudar et al., 2008, Kluknavska et al., 2019).

In the context of Dutch farmers, I expect to find similar results. The question of what the role of the farmer in the nitrogen crisis is remains unclear, but it seems he is either to blame or to be a victim.

### 3.2 Datasource & Dataset

The relevant articles were gathered using the newspaper database Nexis Uni (LexisNexis, 2022). The database was searched on ‘\*farmer\* & \*nitrogen\*’ (Dutch search terms: ‘\*boer\* & \*stikstof\*’), which resulted in a total of 100092 articles (Figure 2). Broad search terms were used to capture the diverse roles of the Dutch farmer in the Dutch media. The search terms ‘farmer’ and ‘nitrogen’ are the main words used in the debate and were therefore chosen as search terms. There are no synonyms for nitrogen that could be added and including synonyms for farmer, such as agrarian or livestock farmer (in Dutch: Agrarier or Veehouder), did not increase the total number of newspapers found.

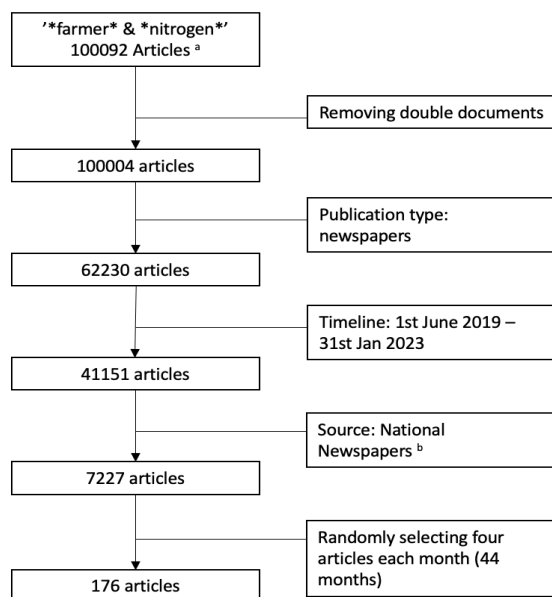
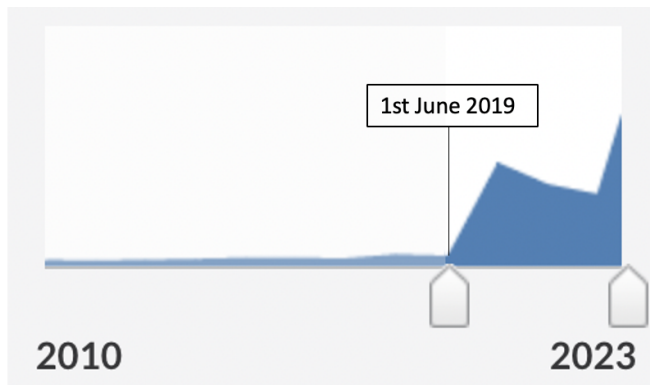


Figure 2: Flowchart of the including and excluding process of newspaper articles with the amount of articles. <sup>a</sup> Dutch search terms: \*Boer\* & \*Stikstof\*. <sup>b</sup> Trouw, de Volkskrant, NRC, Reformatorisch Dagblad, De Telegraaf, Nederlands Dagblad, AD/Algemeen Dagblad, Het Financieele Dagblad.

The timeline was set from the first of June 2019 to the 31st of January 2023, reducing the pool of articles to 41151. The ruling of the Dutch high court on the PAS happened in May 2019 and after that the media coverage on the nitrogen crisis exploded, as can be seen in *Figure 3*. The start of the study was chosen as the end point.



*Figure 3: Published newspaper articles under the search terms '\*Farmer\*' & '\*Nitrogen\*', from January 2010 until January 2023.*

The next step, was selecting the eight national newspapers (Trouw, de Volkskrant, NRC, Reformatorisch Dagblad, De Telegraaf, Nederlands Dagblad, AD/Algemeen Dagblad, and Het Financieele Dagblad), resulting in a final pool of 7227 articles. These newspapers were chosen because they have different origins, audiences and quality. In addition, the role of the farmer can be looked into from a national perspective and is not limited to the boundaries of a province or part of the Netherlands.

To build the final set of articles, four articles per month were randomly chosen using the RAND-function in excel. The number of articles was reduced to ensure the study could be completed within the set timeframe. Four articles per month were chosen to create a dataset which had a consistent amount of articles over the chosen timeframe.

Articles were excluded that were too short to provide clear frame elements, did not contain a problem, or did not contain any information on farmers in the Netherlands and/or the nitrogen crisis. If an article was excluded, another article in that month was chosen at random to ensure the dataset still contained four articles per month.

### 3.3 Data analysis

For every newspaper article, the problem, cause of the problem and proposed solutions or calls for action were coded following the method proposed by Snow and Benford (2000) who followed the frame elements proposed by Entman (1993). Subsequently, the role of the farmer was coded for these frame elements to get a better understanding of the role of the farmer, which is present in each frame (*Figure 4*). Multiple problems, causes and solutions could be present in each article and were all coded. The codes consisted of a quote from the article, to allow interpretation and comparison between codes, and the code itself. Lastly, general information like the source and publish date of the article were noted.

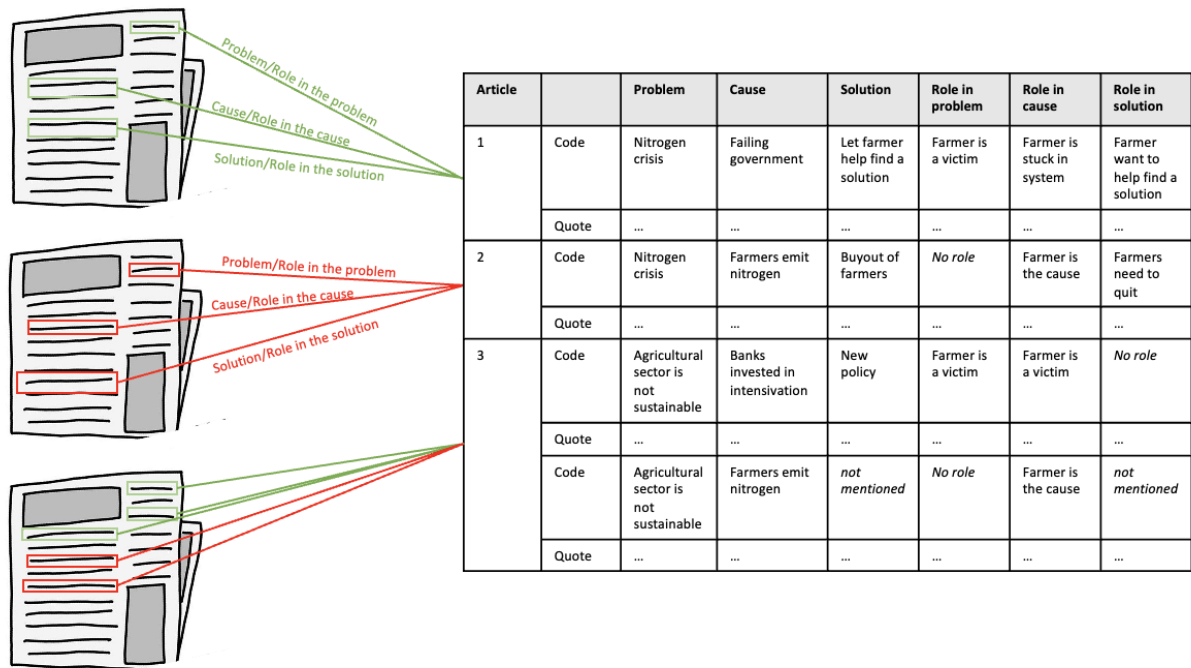


Figure 4: The frame elements by Entman (1993) were coded in the articles, together with the role of the farmer in these elements.

At the start of the research, ten articles were coded and the quotes were compared to ensure the same code was given to similar quotes. The following articles were coded in an iterative manner. The frame elements were filled with quotes from the article. The quotes were then compared to the quotes under already existing codes. In case of similarities, the same code was given to the frame element of the new article. If the article had a different quote in comparison to the existing list, a new code was made. If two quotes showed overlap but were also a little bit different, the previously made code could be changed in order to also entail the new quote, or the quote was different enough to get a new code.

This method was repeated until the 176 articles were coded. As an extra check, the quotes within each code were compared to each other at the end to see if consistent coding was managed.

After coding all the articles, a dataset of codes and quotes was established with data for each frame element and for the role of the farmer in each frame element. The frames were found by following the method proposed by Snow and Benford (2000). Snow and Benford showed that it is easier to find frames when separating them into a diagnostic part, including the problem and cause, and a prognostic part, including the solution.

To find the diagnostic part of each frame, similar codes under role in problem and role in cause were combined (Figure 5). The code for the role of the farmer is only one sentence and gives little information on what this role actually entails. The frame itself is the story to understand what this role actually means in the context of the nitrogen crisis.

To give a hypothetical example, the Dutch farmer can have the role of a victim in the problem and cause, but this has no context. The context lies in the quotes under these codes and in the problem and cause that is written in the article. The farmer can be victimized for a few reasons. They can be blamed for the nitrogen crisis, when it is not even their fault. Firstly, it could be the case that the government was indecisive and implemented poor policy, which

resulted in the nitrogen crisis and uncertainty for farmers. Secondly, banks invested their money to intensify the agricultural sector. The farmer is now financially stuck in this system because of the loans they had to take out.

The frame or story to give the role of the farmer context is therefore established by combining the codes and quotes under the problem, cause, role in the problem and role in the cause.

To find the prognostic frame, the role in the solution mentioned in the articles were counted for each diagnostic frame. This yielded the amount of mentioned roles in the solution per frame and therefore conclusions could be drawn on the link between diagnostic and prognostic frames.

To give a hypothetical example, in the 61 articles where the 'farmer is a victim diagnostic frame' is present, 20 articles did not mention a solution. However, 25 articles mentioned that the role of the farmer is to help find a solution.

This role, again, has no context without the whole prognostic frame. When we look at the quotes under this code and the solution linked to it we find that context. Farmers are already experimenting with ways of sustainable farming on a small scale and show that it is possible to farm in a different way. The government is coming up with solutions, but these farmers know that these solutions will not work in practice on a big scale. The farmers therefore want to help the government by giving them their expertise to find a solution.

Article		Problem	Cause	Solution	Role in problem	Role in cause	Role in solution
1	Code	Nitrogen crisis	Failing government	Let farmer help find a solution	Farmer is a victim	Farmer is a victim	Farmer want to help find a solution
	Quote	...	...	...	...	...	...
2	Code	Nitrogen crisis	Farmers emit nitrogen	Buyout of farmers	No role	Farmer is the cause	Farmers need to quit
	Quote	...	...	...	...	...	...
3	Code	Agricultural sector is not sustainable	Banks invested in intensivation	New policy	Farmer is a victim	Farmer is stuck in system	No role
	Quote	...	...	...	...	...	...
	Code		Farmers emit nitrogen	not mentioned	No role	Farmer is the cause	not mentioned
	Quote	...	...	...	...	...	...

### Frame 1

Role: Farmer is a victim

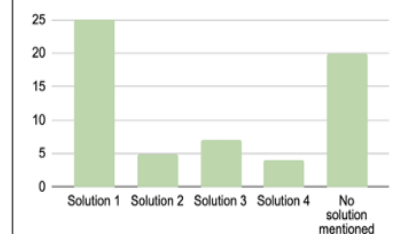
#### Diagnostic frame

Dutch farmers are victimized because of a few reasons. They are blamed for the nitrogen crisis and the unsustainable agricultural sector, but this is not their fault. Firstly, the government was indecisive and implemented poor policy, which resulted in the nitrogen crisis and uncertainty for farmers. Secondly, banks invested their money to intensify the agricultural sector. The farmer is now financially stuck in this system because of the loans they had to take out.

#### Prognostic frame

In the articles containing frame 1, 20 articles did not mention a solution. However, 25 articles mentioned that the role of the farmer is to help find a solution.

Role in solution linked to frame 1



### Frame 2

Role : Farmer is the cause

#### Diagnostic frame

Dutch farmers are the cause of the nitrogen crisis and the unsustainability of the nitrogen crisis. Farmers ignored all signs and calls that their practices are harming nature. The farmers keep using pest- and insecticides to gain more produce to fuel their business and gain more profit. They plant monocultures, which kills biodiversity, but is easier to harvest. Lastly, they intensify their farms keeping more livestock that produce nitrogen.

#### Prognostic frame

In the articles containing frame 2, 15 articles did not mention a solution. However, 25 articles mentioned that the role of the farmer is to quit.

Role in solution linked to frame 2

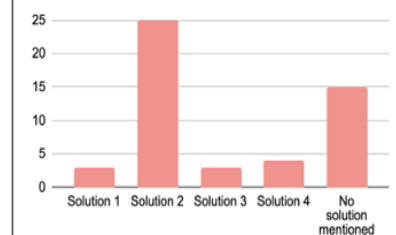


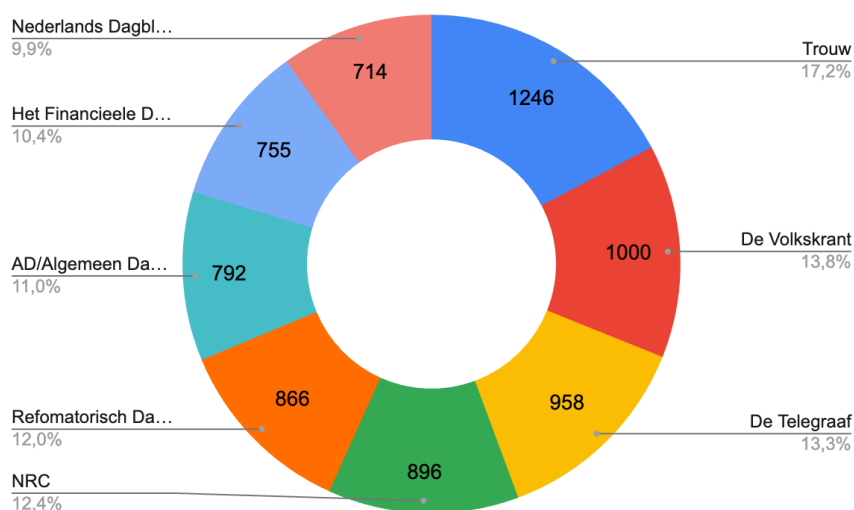
Figure 5: After coding the articles, all the quotes under each code were combined to establish the diagnostic frame and the role of the farmer in the frame. The solutions mentioned for each frame were counted to establish the prognostic frame

## 4. Results

The results chapter is set up as follows. First, the general results will be discussed, showing the share of each newspaper and the causes of spikes of newspaper output in the studied time period. Subsequently, I will dive deeper into the frames and roles found. The roles are first shortly explained after diving deeper into the explanation of each role with context later. In this context, I will explain the role of the farmer in the diagnostic frame and the role of the farmer in the prognostic frame.

### 4.1 General results

7227 articles were published in the eight biggest national newspapers of the Netherlands on the topic of farmers and the nitrogen crisis between the first of June 2019 and the 31st of January 2023. *Figure 6* shows the amount of articles per newspaper.



*Figure 6: News articles on farmers and the nitrogen crisis in the eight biggest Dutch national newspapers between June 2019 and January 2023.*

*Table 1* shows the total amount of news articles together with the pool of articles used for this research. A slight difference can be observed between the total number of articles and the articles used for a few newspapers. Especially for Trouw, NRC and Refomatorisch Dagblad, this difference is rather big. The articles were chosen randomly and therefore there is a chance of difference between the share of articles analyzed and the share in the total articles found per newspaper.

	Total articles	Percentage	Articles used	Percentage	Percentage difference
De Volkskrant	1000	13,8	21	11,9	1,9
Trouw	1246	17,2	45	25,6	8,3
AD/Algemeen Dagblad	792	11,0	15	8,5	2,4
De Telegraaf	958	13,3	26	14,8	1,5
NRC	896	12,4	11	6,3	6,1
Reformatorisch Dagblad	866	12,0	31	17,6	5,6
Nederlands Dagblad	714	9,9	12	6,8	3,1
Het Financieele Dagblad	755	10,4	15	8,5	1,9
Total	7227		176		

Table 1: Total articles between June 2019 and January 2023 on farmers and the nitrogen crisis and the articles used per newspaper

Figure 7 shows the average amount of articles per day for each month from the total pool of articles on farmers and the nitrogen crisis. The number of published articles skyrocketed in October 2019 to 16.9 articles per day due to the advice given to the Dutch house of Representatives to reduce nitrogen emissions by reducing the amount of livestock. This reduction, together with the reduced speed limit on highways from 130 km/h to 100 km/h, was necessary to make room in the nitrogen budget to keep the construction sector going. Farmers started protesting against this advice and wanted to be included in the conversation to get to a solution in which they had a proper future.

In February 2020, the Dutch house of Representatives debated to get to a solution for the nitrogen crisis. This debate resulted in a plan to buyout farmers with high nitrogen emissions, which in turn led to protests again and led to a rise in articles to 7.4 articles per day.

In July of 2020, the Dutch house of Representatives came up with a plan to reduce the amount of protein in animal feed, which would lead to less nitrogen emissions. However, farmers were concerned with what this will do to their produce and the health of their animals and therefore started protesting again. This again resulted in a spike in media attention.

In June 2022, the amount of articles skyrocketed again to 22.5 articles per day, because farmers were no longer willing to accept the plans being made for them as they were not included in any conversation. Farmers blocked several highways and set fire to hay bales on the side of the road. The farmers also threatened Christine van der Wal, Minister of Nature and Nitrogen, at her house. The Dutch Cabinet assigned Johan Remkes as independent conversation leader to talk to the organization for farmers and horticulturalists and to deescalate the situation. These conversations led to an advisory report in October 2022. In this report, Remkes advised the Dutch government to end the nitrogen emissions of 500 to 600 peak polluters and half the nitrogen emissions in 2030 (Remkes, 2022). The farmers were not pleased with this report and they started protesting again, which continued well into January 2023.

Dutch articles on farmers during the nitrogen crisis

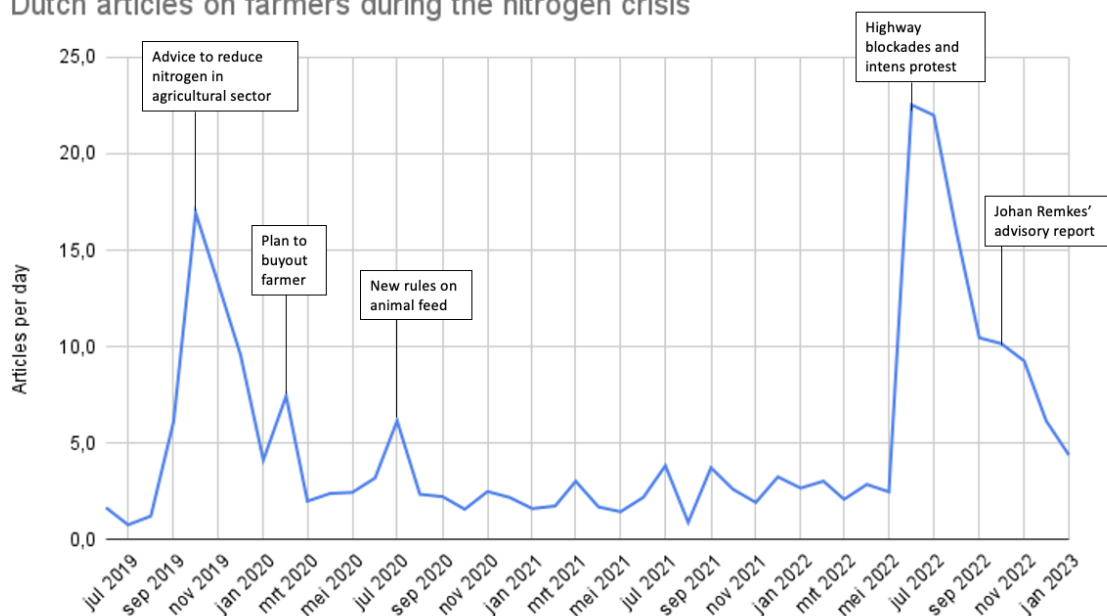


Figure 7: Average amount of articles per day for each month between June 2019 and January 2023

## 4.2 Frames and roles

After coding all the articles, two roles in the problem, two roles in the cause and four roles in the solution were found (Table 2). The roles do not add up to the total number of articles as the farmer did not have a role in the problem or cause in every article. In a lot of articles, no solution was mentioned.

Role of farmer in problem	Explanation of the code	Articles
Farmer is a protester	The farmer is angry, frustrated and mistrustful towards the government because the government failed to resolve the nitrogen crisis in three and a half years. He is also angry, because the government makes plans and policies that have major negative consequences for the Dutch farmer. Therefore, the farmer is protesting against these plans.	45
Farmer is a victim of the problem	The farmer is a victim of the nitrogen crisis, the unsustainable agricultural system and bad agricultural policy. These problems let the farmer feel uncertain about his future as there is no clear way out of the crisis and government plans and policy keep on failing. The unsustainable system has to change, which in turn leads to more uncertainty.	32
<b>Role of farmer in cause</b>		
Farmer is a victim of the cause	The problems posed in the article are caused by system-imposed scale enlargement towards intensive agriculture and bad government plans and policies. The farmer is a victim of this, because they had to intensify their farm to keep making profits. By intensifying his farm, agriculture became more unsustainable, but now that the agricultural sector has to change, the farmer does not have any money to do so. Secondly, the farmer is a victim of the nitrogen crisis itself as he has to reduce his emissions, while the nitrogen crisis is mainly caused by the government.	78



Farmer is the cause	Farming practices are seen as the cause of the nitrogen crisis, the deterioration of nature and the unsustainable agricultural system. They are seen as the cause because of, for instance, ammonia and nitrous oxide emissions, monocultures and the use of pesticides.	61
<b>Role of farmer in solution</b>		
Farmer is part of a sustainable transition	The farmer needs to and can be part of a sustainable transition in the agricultural sector. Where some farmers are willing to take part in the initiation of this transition, others need to be pushed in this direction with, for instance, financially attractive policies.	54
Farmer has practical knowledge and wants to help find a solution	The farmer feels unheard, but has a lot of practical knowledge. Therefore, he wants to be included in the conversation that is taking place on the solution to the nitrogen crisis.	30
Farmer has to quit	The farmer has to quit to decrease nitrogen emissions. Buyout of peak polluters and farmers close to Natura 2000 areas will make a big impact on the nitrogen deposition in these areas. However, also smaller farmers risk losing their job, house and land, as the government makes plans to voluntarily or even obligatory buyout farmers to stop the nitrogen crisis.	25
Farmer is underpaid and should receive better payment	The farmer is underpaid as agro-giants and supermarkets are trying to make maximum profit. The farmer had to take a loan from the bank to intensify his businesses to keep up with demands, but now he is financially stuck, which decreases his opportunities to change their practices themselves. Therefore, the farmer should receive the payment that he deserves.	15

Table 2: Codes per frame element and their prevalence

I analyzed the dataset by looking at the codes found and linked the codes on similar attribution of the farmer and on occurrence. Firstly, I did this for the problem and the cause to find the diagnostic frames. In the second step, I linked the role in the solution to the diagnostic frames to find the prognostic frames.

The first step yielded three diagnostic frames in which the farmer had a distinct role. The farmer had a victim role, a protester role and a causer role in the articles (*Figure 8*). I will first shortly explain what the found diagnostic frames entail and how much they were present over the studied time period. After that I will give a greater explanation of the frames with my data and explain the prognostic frames.

In the first diagnostic frame, the farmer has the role of a victim. This victimization is caused by three things. Firstly, the farmer is victimized because external factors create an uncertain future for him. These external factors are political indecisiveness, poor government policies and the transition in the agricultural sector.

Secondly, the farmer is victimized because he is financially trapped in the current system. The farmer is financially trapped because banks gave him a loan to intensify his farm, which was pushed by knowledge institutions and the government. However, the agricultural sector needs to transition as it is harming nature, but the farmer does not have money to transition as he is still paying back his loan. The farmer has a hard time paying back his loan, because supermarkets enforce low prices and therefore, the farmer does not make enough money to quickly pay back his loan, entrapping him even more.

Thirdly, the farmer is victimized because he is used as a scapegoat by the government. The government is making plans to buyout farmers, while banks, agro-giants and supermarkets also have a part in the problem, but do not get the same amount of blame.

In the second diagnostic frame, the farmer has the role of a protester. The farmer has this role because he is protesting. The reason why the farmer is protesting has overlap with the reason why he is victimized, but these are separate frames, because the farmer has a different role. The difference lies in the description of the reaction of the farmer in the articles where these frames are present. In the articles containing the first frame, the farmer is described to feel uncertainty and is therefore victimized. In the articles containing the second frame, the farmer is described to feel anger and mistrust and this leads him to protest. This anger and mistrust is caused by three things.

Firstly, the farmer is angry about policies and regulations implemented or proposed by the government. These are for instance the nitrogen law or the buyout schemes.

Secondly, the farmer is angry because he feels a lack of support and appreciation from the government. The government is not supporting the farmer financially or with gratitude and is even using the farmer as a scapegoat in the crisis.

Thirdly, the farmer is angry, because he feels unheard. The farmer is left out of conversations and when he is invited, he feels that the government is not listening.

These reasons lead to anger, but also mistrust. This leads to farmers thinking that the government is pushing their own agenda and that the methods used to calculate nitrogen are wrong. Which again leads to more anger and protests.

In the third diagnostic frame, the farmer has the role of a cause. The farmer has this role, because he is seen as the cause of the nitrogen crisis, the deterioration of nature and the unsustainable agricultural system. These problems are caused by nitrogen emissions, and the use of monocultures, pest- and insecticides, which are all related to farming practices.

However, not all farmers are blamed. In the majority of the articles in this frame the blame is assigned to peak polluters and farmers close to Natura 2000 areas. In the rest of the articles, the farmer in general is seen as the cause of these problems. However, only in one third of these articles blame is assigned to the farmer. In the other two thirds, blame is assigned to the farming practices and not specifically to the farmer himself.

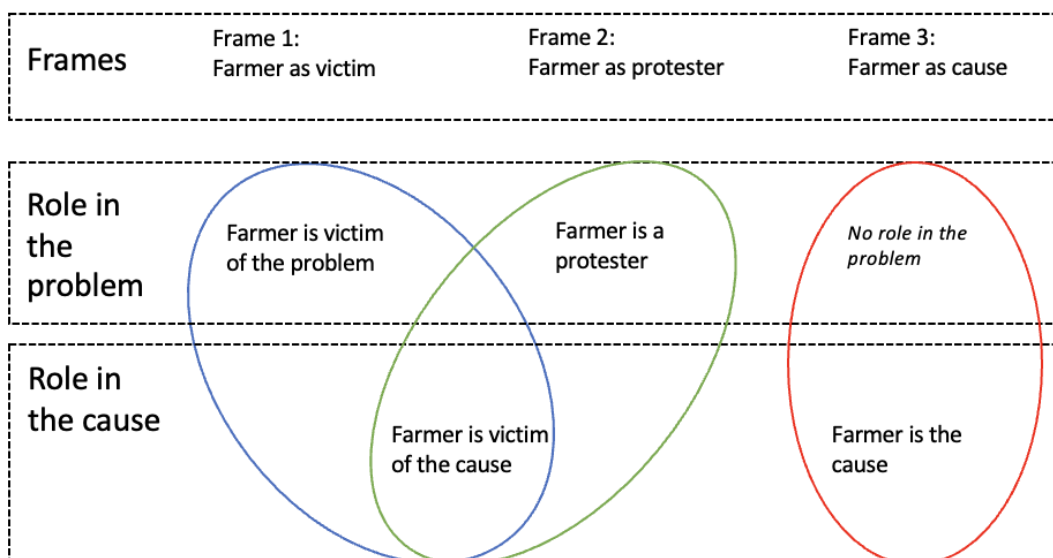


Figure 8: Three diagnostic frames with their codes

Figure 9 shows the cumulative use of the three diagnostic frames over the years. In this graph, you can see that the first frame, where the farmer has the role of a victim, was used the most. This is followed by the farmer as cause and farmer as protester frame. Two other things stand out in this graph.

Firstly, the farmer as cause frame initially occurred nearly as often as the farmer as victim frame, but grew less steeply around two years into the crisis. This indicates that the farmer as cause frame was less present as the crisis continued.

Secondly, the farmer as protester frame was not present in the first few months of the rise in publications on the nitrogen crisis. Indicating that the farmer as a protester frame emerged later in the nitrogen crisis.

### Use of diagnostic frames in the media

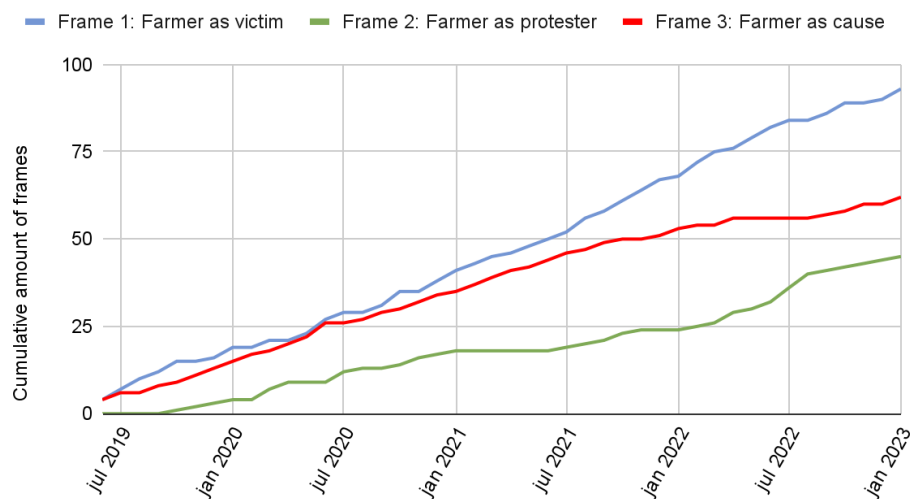


Figure 9: Cumulative use of the three diagnostic frames

#### 4.2.1 Frame 1 - Farmer as victim

##### Diagnostic frame

In the first frame, the role of the farmer is a victim. This frame occurred in 93 out of the 176 articles. As mentioned in the method chapter, only looking at the role of the farmer does not give us a lot of information. Therefore we also need to have a look at the whole frame in which the farmer has this role. The articles that contain this role describe that farmers experience negative consequences from the nitrogen crisis but that farmers had no part in causing it. There are three main reasons why the farmer has a victim role in this frame.

Firstly, the farmer has the role of a victim, because he feels uncertainty about his future. This uncertainty is, for instance, caused by political indecisiveness and poor government policies. These two factors were mentioned in 50 out of the 93 articles in this frame.

The government caused the nitrogen crisis in this frame, which resulted in problems for the farmer. Reformatorisch Dagblad wrote: “*They [farmers] have encountered problems due to the mismanagement of the government in the past decades*” (Reformatorisch Dagblad, 26-06-2021). The government should have taken steps decades ago in order to avoid the crisis that The Netherlands is facing now and where the farmer experiences negative consequences of.

Furthermore, the farmer is described to feel uncertainty around his future as the government again and again failed to create a proper solution. Reformatorisch Dagblad wrote: *“The involved [agricultural] companies are at risk of being crushed under the wheels of poor government policy and a lack of legal certainty”* (Reformatorisch Dagblad, 24-05-2022). A solution should have been made by now, but the indecisiveness resulted in the crisis that has been going on for more than four years without a solution. The government is not creating solutions to solve the nitrogen crisis, which gives the farmer a lot of uncertainty.

Even more so, because the solution that is sometimes mentioned is a transition of the whole agricultural sector. The agricultural sector needs to change as agricultural practices create harmful circumstances for the environment, however, how this transition will unfold is uncertain. De Telegraaf wrote: *“The agriculture sector is facing substantial investments due to nitrogen regulations, climate laws, and the transition to circular agriculture”* (De Telegraaf, 05-05-2021). The farmer is therefore experiencing more uncertainty, as he also does not know how this transition will unfold, but the transition will have a major impact on his livelihood.

Secondly, the farmer has the role of a victim, because he is financially trapped in an unsustainable system. This was mentioned in 28 out of the 93 articles. This is explicitly mentioned by for instance AD/Algemeen Dagblad: *“At the same time, we have farmers caught in a system where they are completely financially trapped”* (AD/Algemeen Dagblad, 06-07-2021). The unsustainability of the sector and the financial entrapment is caused by investment into scale enlargement.

The major contributor to these investments are banks, as mentioned by AD/Algemeen Dagblad: *“The loan providers are blamed for focusing on scale enlargement for too long”* (AD/Algemeen Dagblad, 22-10-2022). The unsustainable system needs a transition, because it is harming nature in the current way, but the farmer cannot financially make this transition on his own as he has a debt with the loan providers. This again puts the farmers in the victim role as the loan providers pushed the farmer into the direction of intensification and taking out more loans.

Next to the loan providers, supermarkets also financially trap the farmer in the current system. This is for instance mentioned by Trouw: *“In addition, the increasingly merging supermarkets can enforce low prices from the farmers”* (Trouw, 11-01-2022). The supermarkets are the main buyers of the farmer and the supermarkets have the power to enforce low prices, because if the farmer denies these prices, the supermarkets will go elsewhere and the farmer is left with unsold products. This power of supermarkets over the farmer and the low prices that supermarkets can enforce with this power results in more financial entrapment and therefore victimization.

Thirdly, the farmer has the role of a victim, because they are used as scapegoats by the government. This was mentioned in 21 out of the 93 articles. The agricultural sector is blamed for not reacting to the unsustainable path that the sector was on and because of this, cuts in nitrogen emissions need to come from the agricultural sector or farmers need to be bought out. Trouw mentioned: *“The government opts for easy targets, the farmers”* (Trouw, 18-12-2021). The farmer has its head on the chopping block while banks, agro-giants and supermarkets also have a part in the problem, but do not get the same amount of blame.

In conclusion, in the first frame the farmer has the role of a victim, because he is described to experience uncertainty due to political indecisiveness, poor government policies and an unfolding agricultural transition. Additionally the farmer is financially trapped in a system by

loan providers, like banks, and by supermarkets. Lastly, the farmer is used as a scapegoat by the governments while banks, agro-giants and supermarkets also have a part in the problem, but get away with it more easily.

### Prognostic frame

Figure 10 shows the role of the farmer in the solution linked to the first frame. In half of the articles where the first frame is present, no solution is mentioned. A quarter of the articles say that a transition is necessary and that the farmer has a role in that transition towards a more sustainable agricultural sector. The other solutions are mentioned less in regard to the first frame, I will therefore focus on the role in the solution ‘farmer is part of a sustainable transition’.

### Role of the farmer in the solution - Frame 1

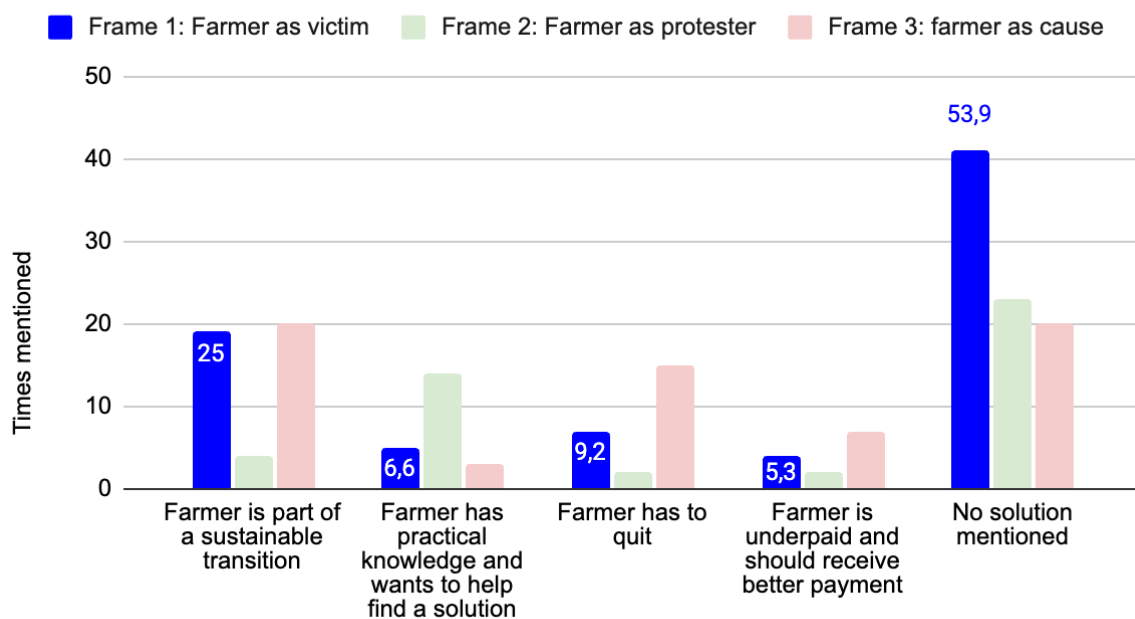


Figure 10: Role of the farmer in the solution. Percentage of prevalence per solution for frame 1.

The articles that mention a sustainable transition envision a fair place for the farmer in the new agricultural system. The farmer is in this way, benefitting from the transition. De Volkrant wrote: *“It is time for a shift in thinking about agriculture, says Veerman. We need to agree on new values for the land. Agriculture, nature, biodiversity – everything should have its fair place in a sustainable system.”* (De Volkskrant 31/3/2021). and Trouw wrote: *“Then you’re talking about a turnaround for the entire sector, which is fair to all farmers.”* (Trouw 4/7/2020). In this new sustainable system, the division between farms and nature is let loose and nature becomes integrated on the farm. The idea is that nature will enhance the farms and the farms will enhance nature, with the farmer benefitting in the process and getting paid a fair price for his produce.

However, where there is agreement on the role of the farmer in the new system, there is little agreement on the role of the farmer in bringing this transition about. On one hand, there are articles describing that farmers are taking an active role in making this transition happen, as

this transition will mean they can keep farming. Het Financieele Dagblad wrote: *“In practice, various pioneers, including both farmers and researchers, are already experimenting with forms of nature-inclusive agriculture and biodiverse food systems. More diversity in crops and animals in agriculture also means fewer risks for the farmer.”* (Het Financieele Dagblad 16/12/2022). The farmers are experimenting with the integration of nature on their farm, resulting in a more biodiverse system. This biodiverse system is more resilient, which benefits nature and results in less risk for the farmers.

On the other hand, there are also articles that describe farmers experiencing obstacles to transition and therefore these farmers do not take an active role. The transition needs to be financially and fiscally appealing. Nederlands Dagblad wrote: *“Nature-inclusive farming needs to become financially and fiscally more attractive very quickly”* (Nederlands Dagblad 29/1/2020). As the farmers already needed to take out loans for intensification of their farms, the financial barrier to change is still too high.

Another reason why farmers take an inactive role is because they are described to be against a transition and just want to keep farming in the way they are doing it right now. Nederlands Dagblad wrote: *“The message is clear: the solutions exist, so the question is not whether farmers can change, but whether they want to.”* (Nederlands Dagblad 23/9/2021).

In conclusion, the transition towards a sustainable agricultural system is a way of getting out of the nitrogen crisis and the farmer has a role in the new system. However, there is still debate on the role in how this transition comes about. There are articles that describe an active role of the farmer, but also articles that describe an inactive role. This inactive role is mainly fueled by financial reasons or the conservative nature of farmers.

#### 4.2.2 Frame 2 - Farmer as protester

##### Diagnostic frame

In the second frame, the role of the farmer is a protester. This frame occurred in 45 out of the 176 articles. The farmer has this role because he is protesting. The farmer is protesting because he is described to feel anger and mistrust towards the government. This was mentioned as the reason to protest in all of the 45 articles in this frame. However, there are a few specific reasons why the farmers feel anger towards the government.

One of the reasons is the policies and regulations implemented or proposed by the government, for example the nitrogen law and the buyout schemes. This was for instance written by Reformatorisch Dagblad and Trouw: *“The farmers' protest is directed against the government's nitrogen reduction plans”* (Reformatorisch Dagblad, 7/7/2022). *“De Groot proposed halving the livestock. This sparked several massive farmer protests in The Hague”* (Trouw, 4/7/2020). These plans sparked the farmers protests as the farmers felt attacked.

Another reason why the farmer is angry is because he feels a lack of support and appreciation from the government. AD/Algemeen Dagblad wrote: *“The responses appear to stem, in part, from anger over the perceived lack of support that farmers experience, especially from the government”* (AD/Algemeen Dagblad, 22/10/2022). This perceived lack of support results in anger, disbelief and also mistrust towards the government. The government is not supporting the farmer financially or with gratitude and is even using the farmer as a scapegoat in the crisis.

The farmer is also angry because he feels unheard. The farmer is often left out of conversations, and when he participates in discussions, he feels that the government is not genuinely listening. NRC wrote: *“Through protests, they hope to exert some influence on the future agricultural policy, which is likely to be a significant topic for the upcoming cabinet”* (NRC, 8/7/2021). The farmer protests, because he feels that this is the only way the government will listen to him.

The anger and mistrust that farmers are described to experience also results in the sentiment that the government is only creating policy and regulations to push their own agenda without listening to the concerns raised by the farmer. Het Financieele Dagblad wrote for instance: *“In rural areas, there is a prevailing sense that the nitrogen issue is being exploited to achieve other objectives”* (Het Financieele Dagblad, 12/1/2023). This mistrust came from years of feeling that he was not being heard.

This level of mistrust is also described in the suspicion that some farmers feel around, for instance, the methods used by the National Institute for Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu: RIVM) for measuring nitrogen. Reformatorisch Dagblad wrote: *“Farmers expressed their dissatisfaction with the way the RIVM conducts its calculations”* (Reformatorisch Dagblad, 7/1/2021). The farmers do not trust the government and therefore also the governmental organizations that do the calculations on nitrogen emissions.

In conclusion, in the second frame the farmer has the role of a protester. He has this role because he is protesting and he is protesting because he feels anger and mistrust towards the government. This anger originates mostly from the disagreement with government policy and regulation. This disagreement, together with feeling unheard and mistrusting the government, led the farmer to protest.

The reasons why the farmer is a protester is similar to the reason why the farmer is victimized. Both the frames include the governmental plans, use as scapegoats and feeling unheard as reasons for victimization and anger. However, the difference lies in the description of the reaction of the farmer in the articles where these frames are present. In the articles containing the first frame, the farmer is described to feel uncertainty and is therefore victimized. In the articles containing the second frame, the farmer is described to feel anger and mistrust and this leads him to protest.

### Prognostic frame

*Figure 11* shows the role of the farmer in the solution linked to the second frame. In half of the articles where the second frame is present, no solution is mentioned. A third of the articles say that the farmer has practical knowledge and wants to help find a solution. The other solutions are mentioned less in regard to the second frame, I will therefore focus on the role in the solution ‘farmer has practical knowledge and wants to help find a solution’.

## Role of the farmer in the solution - Frame 2

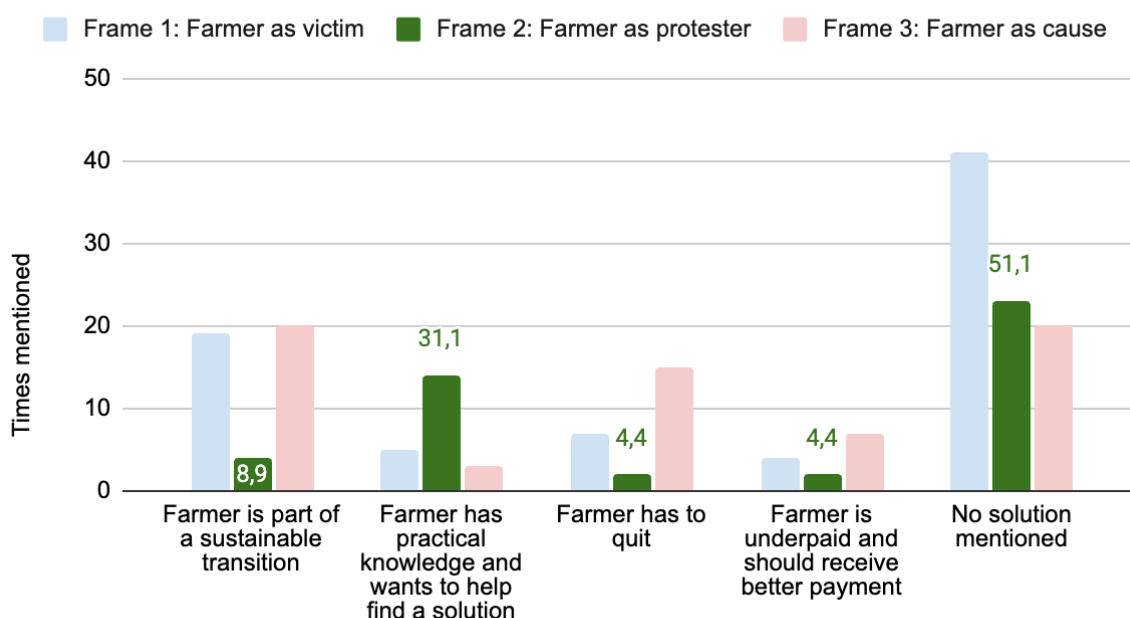


Figure 11: Role of the farmer in the solution. Percentage of prevalence per solution for frame 2.

The articles that mention that the farmer wants to help find a solution, describe that the farmer is willing to share ideas, as seen in Reformatorisch Dagblad: "*When I (Staghouwer) was nominated, I received an incredible number of emails from the sector. They want to engage in a conversation*" (Reformatorisch Dagblad, 6/1/2022).

The farmer is eager to engage in conversation because he has ideas about solutions and knowledge on practical implementation of these solutions that will help tackle the nitrogen crisis. These solutions will reform the agricultural sector to make it more sustainable, as written in AD/Algemeen Dagblad: "*And, together with other green farming parties, they [farmers] presented a ten-point plan to the government for reforming the agricultural sector*" (AD/Algemeen Dagblad, 10/10/2022).

Subsequently, the farmer wants to have a voice, because he felt unheard and left out of previous conversations. As seen in for instance Reformatorisch Dagblad: "*Furthermore, it is suggested that Schouten is unresponsive to measures proposed by farmers to limit nitrogen emissions*" (Reformatorisch Dagblad, 2/4/2020). They feel unheard, even though they have measures that will limit nitrogen emissions and therefore can help the government get out of the crisis.

On the other hand, discussions have been taking place, but the government predominantly talked to bigger organizations and lobby groups that say they represent farmers such as LTO, Agractie and Farmer Defence Force. As can be seen in Het Financieele Dagblad: "*Lobby groups like LTO and Agractie will only participate in discussions again when there is 'more perspective' for farmers in the government's plans*" (Het Financieele Dagblad, 11/4/2022). However, the question arises to what extent these talks satisfy the farmer as he is still not at the table.



In conclusion, the farmer has a lot of practical knowledge and wants to share this with the government. The farmer felt unheard for years and now wants to have a say in their future, however, they are still not invited for conversations.

#### 4.2.3 Frame 3 - Farmer as cause

##### Diagnostic frame

In the third frame, the role of the farmer is the cause. This frame occurred in 62 out of the 176 articles. The articles that contain this role describe that the farmer caused the nitrogen crisis, the deterioration of nature and the unsustainable agricultural system. These problems are all caused by the current farming practices and the related nitrogen emissions. Mentioned by for instance De Telegraaf: "*The ammonia from manure and urine enters the atmosphere and then descends onto Dutch nature, leading to dramatic consequences.*" (De Telegraaf, 3/4/2021).

Subsequently, the problems are caused by monocultures and the use of pest- and insecticides. These attributes of farming practices are not per se the cause of the nitrogen crisis, but do cause an unsustainable agricultural system and contribute to the deterioration of nature. As mentioned by Trouw: "*Agriculture is the main threat: more than half of the species and habitats suffer from nitrogen in manure and agricultural pesticides.*" (Trouw, 28/5/2020). "*Especially the hare is affected by intensive agriculture, which has significantly limited the variation in the landscape.*" (Trouw, 4/11/2020).

However, not all farmers are always seen as the cause. In around two thirds of the articles with this frame, the cause is only assigned to peak polluters and farmers around Natura 2000 areas, which is only a fraction of all the farmers in the Netherlands. Reformatorisch Dagblad wrote: "*A few dozen livestock farms are responsible for disproportionately high nitrogen deposition in vulnerable nature reserves.*" (Reformatorisch Dagblad, 25/11/2020). So a few dozen farms are the main contributor to nitrogen emissions, which results in the farmer being portrayed as the cause.

In the other one third of the articles, all the farmers were seen as the cause. However, it is not always the case that the farmer is seen as the perpetrator and that they have guilt. In around two thirds of the articles where all the farmers are mentioned as the cause, the farming practice is actually mentioned as the cause of the problem and it is not per se mentioned that the farmer has any guilt in that sense. De Telegraaf wrote: "*Because we import a lot of animal feed, which leaves our livestock in the form of manure, a significant amount of ammonia is released on farms in the Netherlands.*" (De Telegraaf, 9/2/2022). In this example, it is seen that animals on farms are a significant cause of ammonia, but it does not state that farmers actively choose to import animal feed. It rather states that we as The Netherlands are importing animal feed, which causes ammonia to release. The farmer is in that sense not blamed for the problems that arose with their practices.

In the other one third of the articles the farmer is blamed for the previously mentioned problems and his role in the cause is closely linked to guilt and being a perpetrator. In these articles the farmer is for instance blamed for losing the connection between farming and nature, as mentioned by Trouw: "*The landscape elements have been lost because farmers aimed to practice agriculture as efficiently as possible.*" (Trouw, 14/3/2020). This is mentioned in combination with the goal to produce as much as possible to ensure growth.

Subsequently, the farmer is described as an active and knowingly causer of the problems mentioned. These articles for example point out that several solutions were present to reduce his nitrogen emissions but that the farmer decided not to implement these solutions. Trouw mentioned for instance: "*Farmers should have ensured less nitrogen emissions through adjustments in livestock feed.*" (Trouw, 6/12/2019). The farmer is in this sense portrayed as not changing, in spite of knowing that their practices were harmful and that solutions were present.

In conclusion, in the third diagnostic frame, the farmer has the role of a cause. The farmer has this role, because he is seen as the cause of the nitrogen crisis, the deterioration of nature and the unsustainable agricultural system. These problems are caused by nitrogen emissions, and the use of monocultures, pest- and insecticides, which are all related to farming practices.

However, not all farmers are blamed. In the majority of the articles in this frame the blame is assigned to peak polluters and farmers close to Natura 2000 areas. In the rest of the articles, the farmer in general is seen as the cause of these problems. However, only in one third of these articles, blame is assigned to the farmer. In the other two thirds, blame is assigned to the farming practices and not specifically to the farmer himself.

#### Prognostic frame

*Figure 12* shows the role of the farmer in the solution linked to the third frame. In one third of the articles where the third frame is present, no solution is mentioned. One third of the articles say that a transition is necessary and that the farmer has a role in that transition towards a more sustainable agricultural sector. However, as this role is already discussed in the first prognostic frame, I will not explain it again. It is however part of the bigger story in this frame, which I will elaborate upon in the conclusion chapter.

A quarter of the articles say the farmer has to quit, where ten percent of the articles mention that the farmer is underpaid and should receive better payment.

## Role of the farmer in the solution - Frame 3

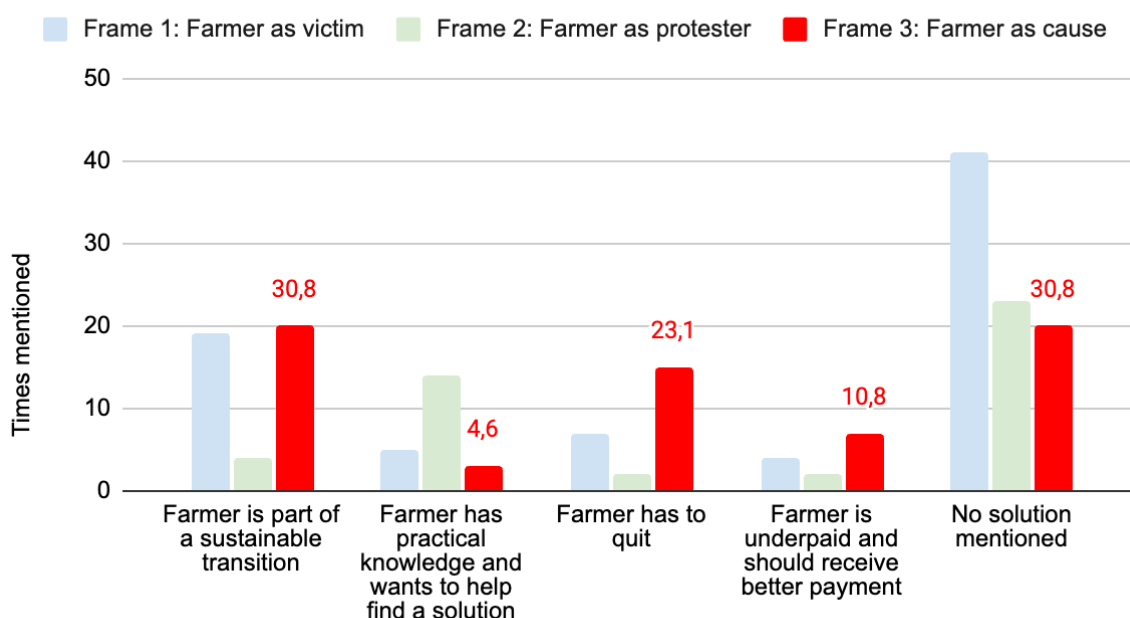


Figure 12: Role of the farmer in the solution. Percentage of prevalence per solution for frame 3.

The role of the farmer in this solution is quitting, as the solution proposed is the buyout of farmers. Mainly peak polluters and farmers close to Natura 2000 areas are targeted, as mentioned by De Volkskrant: *"By doing that, you are more likely pointing out the companies with peak loads, and the rest doesn't have to reduce as much."* (De Volkskrant, 17/9/2022). But still, all farmers are eligible to be bought out.

At first, the plan was to buy out farmers on a voluntary basis. As mentioned by for instance NRC: *"The government is going to buyout farmers on a voluntary basis to reduce Dutch nitrogen emissions."* (NRC, 5/10/2019). But as the crisis continued and urgency increased, this voluntary basis changed towards a more obligatory buyout. Money was made available, which also increased as the crisis continued. Mentioned by AD/Algemeen Dagblad, Trouw and De Telegraaf in 2019, 2021 and 2022, respectively: *"The government is allocating hundreds of millions of euros to buyout, relocate, and modernize farms near nature reserves."* (AD/Algemeen Dagblad, 7/11/2019), *"Two billion euros have been allocated for the buyout of farmers until 2030."* (Trouw, 1/6/2021), *"Additionally, 25 billion euros have been made available to buyout or relocate peak polluters - companies that excessively harm the environment."* (De Telegraaf, 9/2/2022).

This buyout was mentioned throughout the whole period studied, which gave farmers an insecure feeling about their future and the mentioning of new rules led to insecurity and anger of farmers. As mentioned by Reformatorisch Dagblad: *"Farmers who do not cooperate will face significantly stricter environmental requirements, according to NOS. However, exerting pressure and coercion on farmers is highly sensitive."* (Reformatorisch Dagblad, 23/11/2022).

When looking at other solutions mentioned, the farmer should be paid more in order to produce with the use of less artificial fertilizer and less pesticides, mentioned by De Telegraaf: *"A higher*

*price would enable the farmer to produce milk and meat with less artificial fertilizer and fewer pesticides” (De Telegraaf, 3/4/2021).*

Additionally, farmers should be paid more in order to transition towards more sustainable ways of farming. As mentioned before, farmers are financially stuck and transitioning brings extra costs, therefore money should be made available to help the farmers transition. This is for instance mentioned by De Telegraaf: *“The NVB (Dutch union of banks) advises The Hague to help farmers now by enabling sustainable investments through price incentives, such as VAT, to promote the sale of sustainable products and allocate funds for innovation” (De Telegraaf, 5/5/2021)*

Lastly, farmers should be paid fairly for their sustainably produced food and nature management. This will create a financially feasible business model that farmers can transition towards. This was for instance mentioned by De Volkskrant: *“We need to fairly compensate our farmers for sustainable food and nature management” (De Volkskrant, 11/11/2021)*

## 5. Conclusion & Discussion

### **Goal of the research and methods**

The goal of this research was to find roles that are attributed by the Dutch media to Dutch farmers pertaining to the nitrogen crisis. This study used framing analysis to analyze Dutch newspapers to find the roles of the farmer. These roles are present in a frame. These frames can be seen as a story or narrative and the farmer has a certain role in this story. Finding the roles is one thing, but understanding the frame containing information on why the farmer is in a certain role is as important, as it gives background and implications of that role.

The frames containing the role were found in three steps following the approach proposed by Benford and Snow (2000). In their method, frames are found by looking at the diagnoses, regarding the problem itself and its cause, and the prognoses, regarding the solution. In the first step, the problem, cause and solution were coded per article. The role of the farmer in these elements was also coded to find the role of the farmer in each frame. In the second step, the diagnostic frames were found by looking at patterns of codes with similar attribution of the role of the farmer. In the third step, the prognostic frames were found by looking at the different diagnostic frames and the solution mentioned in the articles containing that particular frame. The diagnostic and prognostic frame together finalized the whole frame.

### **Relevance**

Understanding the role of the farmer is societally relevant for the farmer and for the crisis itself. Firstly, knowing the role and the story of the farmer gives a better understanding about the uncertainty and frustration that the farmer has been living with during the crisis. This understanding can help to facilitate dialogue and collaboration between the farmer, government and policy makers. Secondly, understanding the role of the farmer which is framed by the media gives insight into public perception, as public perception is influenced by the media. Certain roles can fuel frustration for the farmer and influence public attitudes, which in turn can influence policy (Oyeoku et al, 2021). Lastly, understanding the role of the farmer in the solution of the nitrogen crisis and the role in the process of reaching that solution will help the farmer and the crisis. Now, the farmer does not know what he can expect, as there is no clear direction out of the crisis yet.

This study is academically relevant as it contributes to the body of literature on boundary objects, actors roles in sustainable transitions and the framing of farmers. Firstly, this study answers the call of Beumer and Swart (2021) to look more into the use of an actor as a boundary object and the consequences that this can bring forth. Secondly, this study analyzed framed actor roles in a sustainability transition, building on the study of Wittmayer et al. (2017). Lastly, this study compares issue-specific news frame studies with this study on the framing of Dutch farmers during the nitrogen crisis.

### **Findings**

I found three frames with three distinct roles of the farmer. The three frames addressed the farmer in a victim, protester and cause role. These frames were present in 93, 45 and 62 out of 176 articles respectively.

In the first frame, the farmer has the role of a victim. The farmer is victimized because an uncertain future is created by political indecisiveness, poor government policies and the transition in the agricultural sector. Subsequently, the farmer is victimized because he is financially trapped in the current agricultural system. The farmer is trapped because he had to

take out loans from the bank, because he was pushed to produce as much as possible and therefore had to intensify his farm. He now has to change his practices to be more sustainable, but can not finance that because he is still paying off his loan. Paying back this loan takes a long time, because supermarkets do not offer fair prices to the farmer. Lastly, the farmer is victimized, because he is used as a scapegoat by the government. The farmer is blamed for the nitrogen crisis and plans are made to buy the farmer out. Other parties like banks, agrogiants and supermarkets are also part of the problem, but do not experience the same negative consequences.

In this frame, the role of the farmer in the solution is rather straightforward. In more than half of the articles that proposed a solution in this frame, the farmer has a role in a sustainable transition of the sector. The farmer has been a victim for years and the upcoming transition gives him uncertainty. However, he will have a financially fair place in the new agricultural system. The transition that is often mentioned encompasses a new agricultural system with no division between farm and nature. This new agricultural system will contain a role for the farmer. However, the role of the farmer in bringing this transition about is debated. On one hand, some articles describe farmers taking action by integrating nature on their farms and they are seen as pioneers. On the other hand, we see articles in this frame explaining the obstacles of transition such as financial obstacles for farmers or the conservative nature of farmers.

In the second frame, the farmer has the role of a protester. The farmer has this role, because he is protesting. The main reason why the farmer is protesting is because he is angry. The farmer is angry about policies and regulations implemented or proposed by the government. These are for instance the nitrogen law or the buyout schemes. Secondly, the farmer is angry because he feels a lack of support and appreciation from the government. The government is not supporting the farmer financially or with gratitude and is even using the farmer as a scapegoat in the crisis. Lastly, the farmer is angry, because he feels unheard. The farmer is left out of conversations and when he is invited, he feels that the government is not listening.

In this frame, the role of the farmer in the solution is also rather straightforward. In more than half of the articles that proposed a solution in this frame, the farmer has a role in finding a solution. The farmer is protesting because he feels unheard and the government makes plans to buy him out. Therefore, the farmer is eager to engage in conversation, because he has practical knowledge and has solutions that can change the agricultural sector so farmers do not have to be bought out.

In the third frame, the farmer has the role of a cause. The farmer has this role, because he is seen as the cause of the nitrogen crisis, the deterioration of nature and the unsustainable agricultural system. These problems are attributed to nitrogen emissions, and the use of monocultures, pest- and insecticides, which are all related to farming practices. However, not all farmers are blamed. In the majority of the articles in this frame the blame is assigned to peak polluters and farmers close to Natura 2000 areas. In the rest of the articles, the farmer in general is seen as the cause of these problems. However, only in one third of these articles blame is assigned to the farmer. In the other two thirds, blame is assigned to the farming practices and not specifically to the farmer himself.

In this frame, the role of the farmer in the solution is rather mixed. In nearly half of the articles that proposed a solution in this frame, the farmer has a role in a sustainable transition of the sector. Around a third of the articles mentioned that the farmer needs to quit and around 15% mentioned that the farmer should receive better payment. The farmer is seen as the

cause of all the problems in this frame, it is therefore rather surprising that still half of the articles see a future for the farmer. On the other hand, it is not mentioned who this transition is going to initiate. It could be up to the farmer himself, because he created this mess. It is also surprising that nearly 15% of the articles mention that the farmer should receive better payment, as this also contrasts the accusation of the cause of the problems.

The farmer should be bought out is mentioned in a third of the articles that mentioned a solution in this frame. The farmers that are mainly bought out are peak polluters and farmers close to Natura 2000 areas, who also have the major role in the blame.

In conclusion, we have three frames with completely different roles of the farmer. In the first frame the farmer is a victim of mainly governmental actions, but the farmer will have a better place in the new agricultural system. In the second frame the farmer is protesting because he does not feel heard and is not content with the proposed plans and therefore wants to be included into conversations to help find a solution with his expertise. In the third frame the farmer is the cause and therefore some articles mentioned that he needs to be bought out, however, this mainly applies to peak polluters and farmers close to Natura 2000 areas. On the other hand, the majority of articles see the importance of the farmer and see that the farmer is the cause, but not a perpetrator and therefore wants to see the farmer in the new agricultural system with financial stability.

## **Implications**

### *Societal*

This study has a few major societal implications. Firstly, the impact that the role of the farmer has on society. As the Dutch media influences public perception, the roles that the media attributes to the farmer influences the public perception of the farmer. The influence on public perception very much depends on the frame they see of course.

I can argue that the first frame, which was used the most, has a positive effect on the public perception of the farmer. The public sees the farmer as a victim and can conclude that being in this position is not their fault. This could lead to empathy and help for the farmer and for the transition that is proposed in this frame, which will result in a better place for the farmer.

It is hard to argue what the influence of the second frame is on public perception. On one hand, the public can see the reasons why the farmer is protesting and feel sorry for the farmer, as is the case with the first frame. The public can help the farmer get heard, which is what he wants. On the other hand, the public can feel less empathy, because the farmers started protesting, which can stir up bad blood. This frame was used the least and therefore has a little bit less impact when compared to the other two.

It is also hard to argue what the influence of the third frame is on public perception. On one hand, the farmer is seen as the cause of the crisis and as a perpetrator, which could result in lack of compassion for the farmer. This was mentioned in around 10 percent of the articles in this frame. On the other hand, this frame mainly shows that peak polluters and farmers close to Natura 2000 areas are blamed and should be bought out. In the rest of the articles, farming practices are seen as the cause of the problems and the solutions point to helping the farmer with money and with the agricultural transition.

A second implication is the impact that the role of the farmer has on the understanding of the situation of the farmer. This can result in a better relationship between the farmer and the government and policy makers. The farmer is being victimized by and angry at the government, which is present in the first two frames. Therefore, the government should

acknowledge this and use this when talking to the farmer about a possible solution. The government should listen to the farmer as this is one of the reasons why the farmer is protesting. The farmer should also be included in the conversation about the future of the agricultural sector because the farmer has practical knowledge and expertise and can inform the government. However, the third frame also shows that peak polluters and farmers close to Natura 2000 areas are mainly seen as the cause and the solution of buyout is mentioned. The government could also talk to these farmers to find a proper solution in which they will have a proper future, without harming nature the way they are doing now.

A third implication is the impact that understanding the role of the farmer in the solution has on the mitigation of uncertainty for the farmer about his future. This uncertainty is partly taken away by the idea that the farmer will have a role and fair place in the new agricultural system. The farmer is encouraged to help the government by experimenting with new ways of farming and gaining knowledge. This will also help him to be heard, because he will have a lot of knowledge, which will mitigate reasons to jump into the protester role again. On the other hand, there will still be a little bit of uncertainty for two reasons. Firstly, because a transition is always unclear and uncertainty will always be present. Secondly, because the third frame still contains the role of the farmer that quits. We cannot know if transitioning to a still unknown new system will be enough to get out of the crisis. It can therefore still happen that some farmers need to be bought out, especially farmers who are peak polluters or close to Natura 2000 areas.

#### *Academic*

This study academically contributes and builds on the notion of boundary figures proposed by Beumer and Swart (2021), on the importance of analyzing roles in sustainable transitions proposed by Wittmayer et al. (2017), and on the body of literature of framing of farmers.

Beumer and Swart (2021) used the concept of boundary objects in the context of biotechnology crops in Africa. Beumer and Swart implemented the concept by looking at African farmers as a group of people that were used as the object, calling it a boundary figure. They found that the figure of the African farmer allows actors to ascribe diverging identities to him, while simultaneously having a sufficiently robust meaning for these actors to communicate to each other (Beumer and Swart, 2021). In the setting of the Dutch farmer pertaining to the nitrogen crisis, I can also conclude that the Dutch farmer was used as a boundary object by the media. The meaning of the Dutch farmer is sufficiently flexible to allow actors to assign different roles to him, while sufficiently robust to enable discussion.

While it is good to have a boundary object that enables debate, we also have to be careful with the consequences of its use. Using the farmer as a boundary object determines his future, however, he does not have a say in his future himself. Beumer and Swart suggest giving the farmers themselves a voice in the debate, moving the debate into a new and constructive direction. This would also apply to the context of the Dutch farmer. The attribution of roles to the farmer influences his future, however, some roles already show us that the Dutch farmer is willing to cooperate and help with experiments and knowledge to dictate their own future. The role of the farmer as a protester shows us that not having a voice was one of the reasons why the farmers started protesting. Giving the farmer a voice in this debate will therefore positively influence the debate by diminishing anger with the farmer and giving knowledge to other actors. We do however, need to consider the way of giving the farmer a



voice as surveys, focus groups, etcetera all have their own flaws and pitfalls (Beumer and Swart, 2021)

This study confirms the findings by Beumer and Swart in the context of farmers pertaining to the Dutch nitrogen crisis.

This study also academically builds on the study done by Wittmayer et al. (2017), who argue the usefulness of roles in sustainable transition. They argue that roles are shared conceptions within a particular community and a change in role understanding can indicate changing interactions and relations between actors within such a community, and therefore, roles are indicative of change. McGuire (2013) and Janssen (2022) already concluded that a role shift is seen for farmers from a conservative and productionist towards a progressive, post-productionist and environmentally conscious identity. A clear view of the current role of the farmer that is attributed by the media will help understand the crisis and the direction of the sustainable agricultural transition. Secondly, the attribution of roles leads to multiple stereotypes of farmers. This leads to confusion, both in society and for the farmer, who does not know what his role is anymore.

This study concludes that three roles are present of the farmer, which are very different in comparison to the conservative and productionist view previously present. The majority of farmers in these roles acknowledge that change in the way they are farming is necessary.

The three roles also confirm the multiple stereotypes, which are created by the attribution of roles by the media. These different roles can lead to confusion. However, we do see that in all the three frames, the farmer has a role in the future. So in that instance, the roles overlap.

This study contributed to the body of literature on the framing of farmers. A similar result was seen when compared to the study conducted by Oyeoku et al. (2021). Oyeoku and his team concluded that, when framing farmers, most of the articles focussed on the problem and cause at hand, instead of at the solution. In this study, I saw similar results as 82 out of 176 articles, did not mention a solution.

When comparing this research to previous research that used issue specific framing to look at diagnostic and prognostic framing we can also see similar results. The study by Kroon et al. (2016) also used issue specific framing to look at diagnostic and prognostic framing, but in their case, of Roma in Europe. In this study, Kroon et al. looked at the portrayal of a minority group and studied under which circumstances the problem was attributed to actions and behaviors of Roma, which they call perpetrator framing, compared to when they are seen as the victim of their hostile environment, which they call victim framing.

This perpetrator/threat and victim framing was also found in this research. However, there are also some differences. This study found similar role attributions, but also two different results. Firstly, farmers in the Netherlands were not always seen as perpetrators, but were framed as the cause. In the second frame, farmers were seen as the cause of the problem. However, in two thirds of these cases blame was not assigned to the farmer but to their practices and they were therefore not seen as a perpetrator. In the other third however, they were seen as the perpetrator.

Secondly, a third role was attributed to farmers by the media, which was the role of protesters. Dutch farmers were victimized and therefore took to the streets and started protesting to raise their voice and concern and be heard. This result was not found in the study by Kroon et al (2016).

### **Reflection on methodology**

This study has a few shortcomings that have to be acknowledged. Firstly, the coding was done by one coder, which raises the concern of reliability, validity and influence of the coder on the outcome. This was minimized by using the content analysis approach proposed by Benford and Snow in which media frames are found using frame elements and clustering these elements into diagnostic and prognostic frames. This method increases the reliability as elements are easier to find when compared to frames as a whole. The validity also increases, because coders do not know in which frame they are coding. This lowers the coder's influence on the outcome and coding expectations. With this method, frames are empirically determined instead of subjectively defined, which increases the reliability and validity.

Secondly, this study talked a lot about the farmer who does not have a voice in the debate. However, it has to be acknowledged that farmers are also interviewed for newspaper articles and are therefore part of the attribution of their roles. This was not taken into account in this study. I expect that this did not influence the results drastically as Visscher et al. (Preprint) already found that only 8.8% of newspaper articles contain the use of farmers in their stories.

### **Recommendations for future research**

The implication of this research gives rise to recommendations for future research. Firstly, this study argues that the attribution of roles by the media has an impact on society as the media shapes public perception. However, a conclusion about the exact impact of these roles can not be drawn as this impact was not part of this study. It is very interesting to know the impact of the roles on society as this will indicate if the public will help the farmers or let them transition on their own.

Secondly, this study argues that understanding what the farmer has been going through in this crisis, which is indirectly studied by studying their roles, will help fuel conversations between farmers and the government and policy makers. However, if this will eventually happen is outside of the scope of this research. The impact of the findings of this research on the feeling of trust between farmer and government is an interesting road to study.

Thirdly, Apuke and Omar (2022), studied the framing of farmers during the farmer and herdsmen conflict in Nigeria and interviewed farmers on their opinion of the found frames. In the first instance, interviewing Dutch farmers was also part of this study, but was not done because of time constraints. It is, however, very interesting to know what the Dutch farmer thinks about how he is presented in the media and what they think their role is in the sustainable agricultural transition.

Fourthly, it is interesting to study how farmers can help and take on a role in starting the transition. In the first frame, we already see that some farmers are experimenting with ways to integrate nature on their farms, but it can be very interesting to study ways in which the farmer can help accelerate this transition.

### **Concluding remarks**

The Netherlands is still in crisis and farmers are protesting. The Netherlands needs to go through a sustainable transition to improve the quality of nature, without harming the farmer in the process. However, the role of the farmer is not only at stake in The Netherlands. Current ways of farming around the globe are harming nature and governments are trying to come up with rules and regulations to improve the quality of nature. This already led to more protests

in Belgium, France, Germany, Spain, Poland and Romania (Nieuwe Oogst, 2024). This study shows that working against farmers leads to more protests and mistrust. I urge governments to work with farmers, because they want to help and have a lot of information and knowledge that can be leveraged to fix the current way of farming.

## 6. References

- Aasetre, J., Hagen, D., Bye, K. (2022). *Ecosystem restoration as a boundary object, demonstrated in a large-scale landscape restoration project in the Dovre Mountains, Norway*. *Ambio*. 51 (3) 586-597. 10.1007/s13280-021-01582-2
- Apuke, O.D. and Omar, B. (2022). *Media and conflict reporting: a content analysis and victims assessment of media coverage of the conflict between Farmers and Herdsman in Nigeria*. *Security Journal*. 35 345-366.  
<https://doi.org/10.1057/s41284-020-00280-0>
- Benford, R.D. and Snow, D.A. (2000). *Framing processes and social movements: An overview and assessment*. *Annual Review of Sociology* (26). 611-639.  
<https://www.jstor.org/stable/223459>
- Beumer, K. and Swart, J.A.A. (2021). *Who is the African farmer? The importance of actor representations in the debate about biotechnology crops in Africa*. *J of Agric and Environ Ethics*. 34 (1) <https://doi.org/10.1007/s10806-021-09841-8>
- Biddle, B.J. (1986). *Recent developments in role theory*. *Annual Review of Sociology*. 12 67-92. <https://doi.org/10.1146/annurev.so.12.080186.000435>
- Bijttebier, J., Ruyschaert, G., Marchand, F., Hijbeek, R., Pronk, A., Schlatter, N., Guzman, G., Syp, A., Werner, A., Bechini, L., Guiffant, N., Wauters, E. (2014). *Assessing farmers' intention to adopt sustainable management practices for soil conservation across*, in IFSA Conference proceedings.
- Boezeman, D., de Pue, D., Graversgaard, M., Möckel, S. (2023). *Less Livestock in North-western Europe? Discourses and Drivers Behind Livestock Buyout Policies*. *EuroChoices*. 22 (2) 4-12. 10.1111/1746-692X.12399
- Burton, R.J.F. (2004). *Seeing through the 'Good Farmer's' eyes: towards developing an understanding of the social symbolic value of 'productivist' behavior*. *Sociologia Ruralis*. 44 (2) 195-215. 10.1111/j.1467-9523.2004.00270.x
- Carvalho, A., Riquito, M., Ferreira, V. (2022). *Sociotechnical imaginaries of energy transition: The case of the Portuguese Roadmap for Carbon Neutrality 2050*. *Energy Reports*. 8 2413-2423. 10.1016/j.egyr.2022.01.138
- De Vreese, C. (2005). *News Framing: Theory and Typology*. *Information Design Journal*. 13 (1). DOI:10.1075/idjdd.13.1.06vre
- Drisko, J.W. and Maschi, T. (2016). *Content Analysis*. Oxford University Press. ISBN: 9780190215491
- Entman, R.M. (1993). *Framing: Towards clarification of a fractured paradigm*. *Journal of Communication*. (43) 4. 51-58. [doi.org/10.1111/j.1460-2466.1993.tb01304.x](https://doi.org/10.1111/j.1460-2466.1993.tb01304.x)
- Erisman, J.W. (2021). *Setting ambitious goals for agriculture to meet environmental targets*. *One Earth*. 4 (1) 15-18. 10.1016/j.oneear.2020.12.007
- Galloway, J.N., Bleeker, A., Erisman, J.W. (2021) *The Human Creation and Use of Reactive Nitrogen: A Global and Regional Perspective*. *Annu. Rev. Environ. Resour.* 46:255–88. <https://doi.org/10.1146/annurev-environ-012420-045120>
- Gaugler, T., Stoeckl, S., Rathgeber, A.W. (2020). *Global climate impacts of agriculture: A meta-regression analysis of food production*. *Journal of Cleaner Production*. 276. [doi.org/10.1016/j.jclepro.2020.122575](https://doi.org/10.1016/j.jclepro.2020.122575)
- Georgakopoulou, A. and Goutsos, D. (2004). *Discourse Analysis: An Introduction 2nd Edition*. Edinburgh University Press. ISBN: 0748620451

- Gomes, A. and Reidsma, P. (2021). *Time to Transition: Barriers and Opportunities to Farmer Adoption of Soil GHG Mitigation Practices in Dutch Agriculture*. *Front. Sustain. Food. Syst.* 5. 10.3389/fsufs.2021.706113
- Hilbert, R.A. (1981). *Towards an Improved Understanding of "Role"*. *Theory and Society.* 10 (2) 207-226. <http://www.jstor.org/stable/656712>.
- Hussmo, D., Safsten, K., Wlazlak, P. (2022). *Engineering tools as boundary object between product development and production*. *Advances in Transdisciplinary Engineering.* 28 687-696. 10.3233/ATDE220702
- Janssen, A., Beers, P.J., Van Mierlo, B. (2022). *Identity in sustainability transitions: The crucial role of landscape in the Green Heart*. *Environmental Innovation and Societal Transitions.* 42 362-373. <https://doi.org/10.1016/j.eist.2022.01.008>
- Kleijn, D., Berendse, F., Smit, R., Gilissen, N. (2001). *Agri-environment schemes do not effectively protect biodiversity in Dutch agricultural landscapes*. *Nature* 413, 723–725. doi: 10.1038/35099540
- Kluknavska, A., Bernhard, J., Boomgaarden, H.G. (2019). *Claiming the crisis: Mediated public debates about the refugee crisis in Austria, the Czech Republic and Slovakia*. *Journal of Refugee Studies.* (34) 1. doi:10.1093/jrs/fez022
- Kroon, A.C., Kluknavska, A., Vliegthart, R., Boomgaarden, H.G. (2016). *Victims or perpetrators? Explaining media framing of Roma across Europe*. *European Journal of Communication.* (31) 4. 375-392. doi.org/10.1177/0267323116647235
- LeMoine, J.B., Halperin, C.T., Salas, M. (2022). *Maya molded-carved ceramics as boundary objects: Terminal classic ceramic production and the forging of political relations in the mopán valley in Guatemala*. *Journal of Anthropological Archaeology.* 68. 10.1016/j.jaa.2022.101463
- Leudar, I., Hayes, J., Nekvapil, J., Bakr, J.T. (2008). *Hostility themes in the media, community and refugee narratives*. *Discourse & Society.* (19) 2. 187-221. <https://www.jstor.org/stable/42889189>
- LexisNexis. (2022). *Nexis uni: Academic research tool for universities & libraries*. URL <https://www.lexisnexis.com/en-us/professional/academic/nexis-uni.page>.
- Matthes, J. and Kohring, M. (2008). *The content analysis of media frames: Towards improving reliability and validity*. *Journal of Communication.* 58 258-279. doi:10.1111/j.1460-2466.2008.00384.x
- McGuire, J., Morton, L.W., Cast, A.D. (2013). *Reconstructing the good farmer identity: shifts in farmer identities and farm management practices to improve water quality*. *Agric Hum Values.* 30 57-69. DOI 10.1007/s10460-012-9381-y
- McKittrick, M.L. (2022). *Climate change games as boundary objects: Moving towards dialogic communication in stakeholder engagement*. *Proceeding of the 40th ACM International Conference on Design of Communication, SIGDOC 2022.* 32-41. 10.1145/3513130.3558975
- Metze, T. (2014). *Fracking the Debate: Frame Shifts and Boundary Work in Dutch Decision Making on Shale Gas*. *Journal of Environmental Policy & Planning,* 19 (1) 35-52. DOI: 10.1080/1523908X.2014.941462
- Ministry of General Affairs. (2023). *Aanpak stikstof*. Rijksoverheid.nl. <https://www.rijksoverheid.nl/onderwerpen/aanpak-stikstof>
- Msughter, A.E., Garba, S., Rabi, A.B. (2023). *Framing Theory Perspective of identity and Narratives of Conflict in Nigerian Media*. *Indian Journal of Mass Communication and Journalism.* 1 (2). 1-5. DOI:10.54105/ijmcj.D1039.121221

- Nieuwe Oogst. (2024). *Boerenprotest heeft in heel Europa effect, maar is nog niet voorbij*. Nieuwe Oogst. Via: <https://nieuweoogst.nl/nieuws/2024/02/02/boerenprotest-heeft-in-heel-europa-effect-maar-is-nog-niet-voorbij>
- Oyeoku, E., Gever, V.C., Alu, N.F., Ukpai, E.N., Obikwelu, C., Onuora, C. (2021). *The media and displacement: News frames of victims of herders/farmers conflict in Nigeria*. *Journal of Refugee Studies*. 34 (4) 4428-4444. <https://doi.org/10.1093/jrs/feaa076>
- Pan, Z. and Kosicki, G.M. (2010). *Framing analysis. An approach to news discourse*. *Political Communication*. 10 (1) 55-75. DOI: 10.1080/10584609.1993.9962963
- Rasmussen, P.E., Goulding, K.W.T., Brown, J.R., Grace, P.R., Janzen, H.H., Körschens, M. (1998). *Long-Term Agroecosystem Experiments: Assessing Agricultural Sustainability and Global Change*. *Science*. 282 (5390) 893-896. <https://www.jstor.org/stable/2897444>
- Remkes, J. (2022). *Wat wel kan: Uit de impasse en een aanzet voor perspectief*. URL: <https://www.rijksoverheid.nl/documenten/rapporten/2022/10/05/wat-wel-kan>
- Roggeband, C. and Vliegthart, R. (2007). *Divergent framing: The public debate on migration in the Dutch parliament and media, 1995-2004*. *West European Politics*. (30) 3. 524-548. [doi.org/10.1080/01402380701276352](https://doi.org/10.1080/01402380701276352)
- RTVOost. (2019). *Lees terug | Honderden boeren voerden op verschillende plekken in de provincie protestacties*. URL: <https://www.rtvooost.nl/nieuws/323060/>
- Runhaar, H. (2017). *Governing the transformation towards “nature-inclusive” agriculture: insights from the Netherlands*. *Int. J. Agric. Sustain*. 15, 340–349. [doi: 10.1080/14735903.2017.1312096](https://doi.org/10.1080/14735903.2017.1312096)
- Snow, D.A. and Benford, R.D. (1988). *Ideology, frame resonance, and participant mobilization*. *International Social Movement Research*. (1). 197-217. ISBN: 0-89232-955-6
- Spiertz, J.H.J., (2009). *Nitrogen, Sustainable Agriculture and Food Security: A Review*. *Sustainable Agriculture* p635-651. [https://doi.org/10.1007/978-90-481-2666-8\\_39](https://doi.org/10.1007/978-90-481-2666-8_39)
- Star, S.L. (2010). *This is not a boundary object: Reflections on the origin of a concept*. *Science, Technology & Human Values*. 35 (5) 601-617. <https://www.jstor.org/stable/25746386>
- Star, S.L. and Griesemer, J.R. (1989). *Institutional ecology, “translations” and boundary objects: Amateurs and professionals in Berkley’s Museum of Vertebrate Zoology, 1907-1939*. *Social Studies of Science*. 19 387-420. [doi:10.1177/030631289019003001](https://doi.org/10.1177/030631289019003001)
- Steimel, S.J. (2010). *Refugees as people: The portrayal of refugees in American human interest stories*. *Journal of Refugee Studies*. 23 (2) 219-237. <https://doi.org/10.1093/jrs/feq019>
- Stokstad, E. (2019). *Nitrogen crisis threatens Dutch environment - and economy*. *Science: Atmospheric Chemistry*. 366 (6470) 1180-1181. [10.1126/science.366.6470.1180](https://doi.org/10.1126/science.366.6470.1180)
- Trompette, P. and Vinck, P. (2009). *Revisiting the notion of boundary object*. *Revue d’Anthropologie des Connaissances*. 3 (1) 3-27. [10.3917/rac.006.0003](https://doi.org/10.3917/rac.006.0003)
- Van Damme, M., Clarisse, L., Franco, B., Sutton, M.A., Erisman, J.W., Kruit, R.W., van Zanten, M., Whitburn, S., Hadji-Lazarno, J., Hurtmans, D., Clerbaux, C., Coheur, P.F. (2021). *Global, regional and national trends of atmospheric ammonia derived from a decadal (2008-2018) satellite record*. *Environ. Res. Lett*. 16 [10.1088/1748-9326/abd5e0](https://doi.org/10.1088/1748-9326/abd5e0)

- Van der Ploeg, J.D. (2020). *Farmers' upheaval, climate crisis and populism*. Journal of Peasant Studies. 47 (3) 589-605. 10.1080/03066150.2020.1725490
- Van Gorp, B. (2005). *Where is the frame?: Victims and Intruders in the Belgian press coverage of the asylum issue*. European Journal of Communication. (20) 4. doi.org/10.1177/0267323105058253
- Vermunt, D.A., Wojtynia, N., Hekker, M.P., Van Dijk, J., Verburg, R., Verweij, P.A., Wassen, M., Runhaar, H. (2022). *Five mechanisms blocking the transition towards 'nature-inclusive' agriculture: A systemic analysis of Dutch dairy farming*. Agricultural Systems. 195 <https://doi.org/10.1016/j.agsy.2021.103280>
- Visscher, M., Cururachi, S., Smeets, I. (Preprint). *Portrayal of the nitrogen debate in Dutch newspapers*. 10.32942/osf.io/rqbdy
- Vliegthart, R. (2012). *Framing in mass communication research - An overview and assessment*. Sociology Compass. (6/12). 937-948. 10.1111/soc4.12003
- Vliegthart, R. and Roggeband, C. (2007). *Framing immigration and integration: Relationships between press and parliament in the Netherlands*. International Communication Gazette. (69) 3. doi.org/10.1177/17480485070765
- Wittmayer, J.M., Avelino, F., Van Steenberger, F., Loorbach, D. (2017). *Actor roles in transition: Insights from sociological perspectives*. Environmental Innovation and Societal Transitions (24). 45-56. doi.org/10.1016/j.eist.2016.10.003

## 7. Appendix

Subject	Quote	Translation	Source
Introduction	De minister meldde verder dat 45 procent van de stikstofuitstoot afkomstig is uit de landbouw.	The minister [of agriculture] reported that 45 percent of the nitrogen emissions originated from agriculture	Reformatorsch Dagblad, 21-06-2019
	Zij [Esther Turnhout of the WUR] stelt dat Wageningen te lang alle kaarten heeft gezet op intensivering van landbouw en veeteelt en dat uit de gevolgen voor natuur en landbouw blijkt dat die visie niet langer houdbaar is.	She [Esther Turnhout of the WUR] argues that Wageningen has for too long placed all its bets on the intensification of agriculture and livestock farming, and the consequences for nature and agriculture show that this vision is no longer sustainable.	Trouw, 04-07-2019
	Met die pot geld kunnen vervolgens boeren worden uitgekocht, waardoor het aantal koeien afneemt.	With that fund, farmers can then be bought out, resulting in a reduction in the number of cows.	AD/Algemeen Dagblad, 21-09-2019
	We zijn volkomen doorgeschoten in de manier waarop we voedsel produceren in Nederland. Wat ons betreft wordt het anders.	We have completely overreached in the way we produce food in the Netherlands. In our view, it needs to change.	Trouw, 01-07-2019
Results Frame 1 Diagnostic	Zij zijn door het wanbeleid van de regering in de afgelopen decennia in de problemen gekomen.	They [farmers] have encountered problems due to the mismanagement of the government in the past decades	Reformatorsch Dagblad, 26-06-2021
	De betrokken bedrijven dreigen vermalen te worden onder de wielen van slecht overheidsbeleid en gebrek aan rechtszekerheid.	The involved companies are at risk of being crushed under the wheels of poor government policy and a lack of legal certainty	Reformatorsch Dagblad, 24-05-2022
	Tegelijkertijd hebben we boeren in een systeem zitten waarin ze helemaal financieel klem zitten	At the same time, we have farmers caught in a system where they are completely financially trapped	AD/Algemeen Dagblad, 06-07-2021
	De geldverstrekkers wordt verweten dat ze te lang hebben ingezet op schaalvergroting.	The loan providers are blamed for focusing on scale enlargement for too long	AD/Algemeen Dagblad, 22-10-2022
	Daarnaast kunnen de steeds verder fuserende supermarkten lage prijzen afdwingen bij de boeren.	In addition, the increasingly merging supermarkets can enforce low prices from the farmers	Trouw, 11-01-2022
	Het kabinet kiest voor de gemakkelijke doelen, de boeren	The government opts for easy targets, the farmers.	Trouw, 18-12-2021
	de landbouw staat vanwege stikstofregels, klimaatwetten en de overgang naar kringlooplandbouw voor enorme	The agriculture sector is facing substantial investments due to nitrogen regulations, climate laws, and the transition to circular	De Telegraaf, 05-05-2021



	investeringen.	agriculture.	
Results Frame 1 Prognostic	Wat er volgens de commissie nodig is, is een rigoureuze planologische herordening van het Nederlandse landschap en een herstructurering van de landbouw.	According to the committee, what is needed is a rigorous spatial reorganization of the Dutch landscape and a restructuring of agriculture	Het Financieele Dagblad 9/6/2020
	Het is tijd voor een omslag in denken over landbouw, aldus Veerman. 'We moeten het eens worden over nieuwe waarden voor het land. Landbouw, natuur, biodiversiteit, alles moet zijn faire plaats krijgen in een systeem dat houdbaar is	It is time for a shift in thinking about agriculture," says Veerman. "We need to agree on new values for the land. Agriculture, nature, biodiversity – everything should have its fair place in a sustainable system.	De Volkskrant 31/3/2021
	In de praktijk experimenteren diverse voorlopers, zowel boeren als onderzoekers, al met dit soort vormen van natuurinclusieve landbouw en biodiverse voedselsystemen. Meer variatie in gewassen en dieren in de landbouw betekent ook minder risico's voor de boer.	In practice, various pioneers, including both farmers and researchers, are already experimenting with forms of nature-inclusive agriculture and biodiverse food systems. More diversity in crops and animals in agriculture also means fewer risks for the farmer.	Het Financieele Dagblad 16/12/2022
	natuurinclusief boeren moet heel snel financieel en fiscaal aantrekkelijker worden	Nature-inclusive farming needs to become financially and fiscally more attractive very quickly	Nederlands Dagblad 29/1/2020
	Dan heb je het over een ommezwaai van de hele sector, die eerlijk is voor alle boeren.	Then you're talking about a turnaround for the entire sector, which is fair to all farmers.	Trouw 4/7/2020
	De strekking is duidelijk: de oplossingen zijn er, dus de vraag is niet of boeren kunnen veranderen, maar of ze dat willen	The message is clear: the solutions exist, so the question is not whether farmers can change, but whether they want to.	Nederlands Dagblad 23/9/2021
Results Frame 2 Diagnostic	De ammoniak uit mest en urine komt in de atmosfeer en daalt vervolgens neer op de Nederlandse natuur met dramatische gevolgen	The ammonia from manure and urine enters the atmosphere and then descends onto Dutch nature, leading to dramatic consequences.	De Telegraaf, 3/4/2021
	Enkele tientallen veehouderijen zijn verantwoordelijk voor onevenredig veel stikstofneerslag op kwetsbare natuurgebieden	A few dozen livestock farms are responsible for disproportionately high nitrogen deposition in vulnerable nature reserves.	Reformatorisch Dagblad, 25/11/2020
	De meeste piekbelasters zijn boerenbedrijven.	Most peak polluters are farm enterprises.	Reformatorisch Dagblad, 23/11/2022

	De landbouw is de voornaamste bedreiging: meer dan de helft van de soorten en leefgebieden heeft te lijden onder stikstof uit mest en landbouwgif.	Agriculture is the main threat: more than half of the species and habitats suffer from nitrogen in manure and agricultural pesticides.	Trouw, 28/5/2020
	Vooraf de haas heeft last van de intensieve landbouw die de variatie in het landschap sterk heeft beperkt	Especially the hare is affected by intensive agriculture, which has significantly limited the variation in the landscape.	Trouw, 4/11/2020
	Omdat we veel veevoer importeren, dat in de vorm van mest onze veestapel weer verlaat, komt er in Nederland veel ammoniak vrij op de boerderij.	Because we import a lot of animal feed, which leaves our livestock in the form of manure, a significant amount of ammonia is released on farms in the Netherlands.	De Telegraaf, 9/2/2022
	De landschapselementen zijn verloren gegaan, omdat boeren zo efficiënt mogelijk landbouw wilden bedrijven.	The landscape elements have been lost because farmers aimed to practice agriculture as efficiently as possible.	Trouw, 14/3/2020
	Boeren hadden via aanpassingen in het veevoer moeten zorgen voor minder stikstofuitstoot	Farmers should have ensured less nitrogen emissions through adjustments in livestock feed.	Trouw, 6/12/2019
Results Frame 2 Prognostic	Daarmee wijs je eerder de bedrijven met piekbelasting aan en hoeft de rest minder te reduceren.'	By doing that, you are more likely pointing out the companies with peak loads, and the rest doesn't have to reduce as much.	De Volkskrant, 17/9/2022
	Het kabinet gaat boeren op vrijwillige basis uitkopen om de Nederlandse stikstofuitstoot te verminderen.	The government is going to buyout farmers on a voluntary basis to reduce Dutch nitrogen emissions.	NRC, 5/10/2019
	Het kabinet trekt honderden miljoenen euro's uit om boerenbedrijven in de buurt van natuurgebieden uit te kopen, te verplaatsen en te moderniseren.	The government is allocating hundreds of millions of euros to buyout, relocate, and modernize farms near nature reserves.	AD/Algemeen Dagblad, 7/11/2019
	Voor de uitkoop van boeren is 2 miljard uitgetrokken tot 2030	Two billion euros have been allocated for the buyout of farmers until 2030.	Trouw, 1/6/2021
	Ook is er 25 miljard euro uitgetrokken om piekbelasters - bedrijven die de natuur te sterk benadelen - op te kopen of te verplaatsen	Additionally, 25 billion euros have been made available to buyout or relocate peak polluters - companies that excessively harm the environment.	De Telegraaf, 9/2/2022
	Boeren die niet meewerken, krijgen te maken met aanzienlijk strengere milieueisen, aldus de NOS. Hoe dan ook liggen drang en dwang richting boeren uiterst gevoelig.	Farmers who do not cooperate will face significantly stricter environmental requirements, according to NOS. However, exerting pressure and coercion on farmers is highly sensitive.	Reformatorisch Dagblad, 23/11/2022
	Een hogere prijs zou de boer in staat stellen om melk en vlees te produceren met minder kunstmest en minder gif	A higher price would enable the farmer to produce milk and meat with less artificial fertilizer and fewer pesticides	De Telegraaf, 3/4/2021

	De NVB adviseert Den Haag boeren nu al te helpen door duurzame investeringen mogelijk te maken via prijsprikkels, zoals de btw, om de verkoop van duurzame producten te stimuleren en geld uit te trekken voor innovatie.	The NVB (Dutch union of banks) advises The Hague to help farmers now by enabling sustainable investments through price incentives, such as VAT, to promote the sale of sustainable products and allocate funds for innovation.	De Telegraaf, 5/5/2021
	We moeten onze boeren fatsoenlijk betalen voor duurzaam voedsel en natuurbeheer	We need to fairly compensate our farmers for sustainable food and nature management.	De Volkskrant, 11/11/2021
Results Frame 3 Diagnostic	De protestactie van de boeren is gericht tegen de stikstofplannen van het kabinet	The farmers' protest is directed against the government's nitrogen reduction plans.	Reformatorisch Dagblad, 7/7/2022
	De Groot stelde voor de veestapel te halveren. Dat bleek genoeg vuurwerk voor verschillende massale boerendemonstraties in Den Haag.	De Groot proposed halving the livestock. This sparked several massive farmer protests in The Hague.	Trouw, 4/7/2020
	De antwoorden lijken mede voort te komen uit woede over het gebrek aan steun dat boeren ervaren van met name de overheid.	The responses appear to stem, in part, from anger over the perceived lack of support that farmers experience, especially from the government.	AD/Algemeen Dagblad, 22/10/2022
	Via protest hopen ze enige invloed uit te kunnen oefenen op het toekomstige landbouwbeleid dat hoogstwaarschijnlijk een belangrijk onderwerp is voor het komende kabinet	Through protests, they hope to exert some influence on the future agricultural policy, which is likely to be a significant topic for the upcoming cabinet.	NRC, 8/7/2021
	Op het platteland leeft al het gevoel dat de stikstofkwestie misbruikt wordt om andere doelen te verwezenlijken	In rural areas, there is a prevailing sense that the nitrogen issue is being exploited to achieve other objectives	Het Financieele Dagblad, 12/1/2023
	Boeren gaven blijk van hun ongenoegen over de manier waarop het RIVM zijn berekeningen uitvoert	Farmers expressed their dissatisfaction with the way the RIVM conducts its calculations.	Reformatorisch Dagblad, 7/1/2021
Results Frame 3 Prognostic	Toen ik (Staghouwer) werd voorgedragen, heb ik ongelooflijk veel mailtjes uit de sector gehad. Zij willen graag het gesprek voeren.	When I (Staghouwer) was nominated, I received an incredible number of emails from the sector. They want to engage in a conversation.	Reformatorisch Dagblad, 6/1/2022
	En ze boden samen met andere groene boerenpartijen de politiek een tienpuntenplan aan om de landbouw te hervormen.	And, together with other green farming parties, they (farmers) presented a ten-point plan to the government for reforming the agricultural sector.	AD/Algemeen Dagblad, 10/10/2022
	Verder zou Schouten doof zijn voor door de boeren voorgestelde maatregelen om stikstofuitstoot te beperken.	Furthermore, it is suggested that Schouten is unresponsive to measures proposed by farmers to limit nitrogen emissions.	Reformatorisch Dagblad, 2/4/2020

	lobbyclubs als LTO en Agractie pas weer meepraten als er 'meer perspectief' komt voor de boer in de kabinetsplannen	Lobby groups like LTO and Agractie will only participate in discussions again when there is 'more perspective' for farmers in the government's plans.	Het Financieele Dagblad, 11/4/2022
--	---	---	---------------------------------------