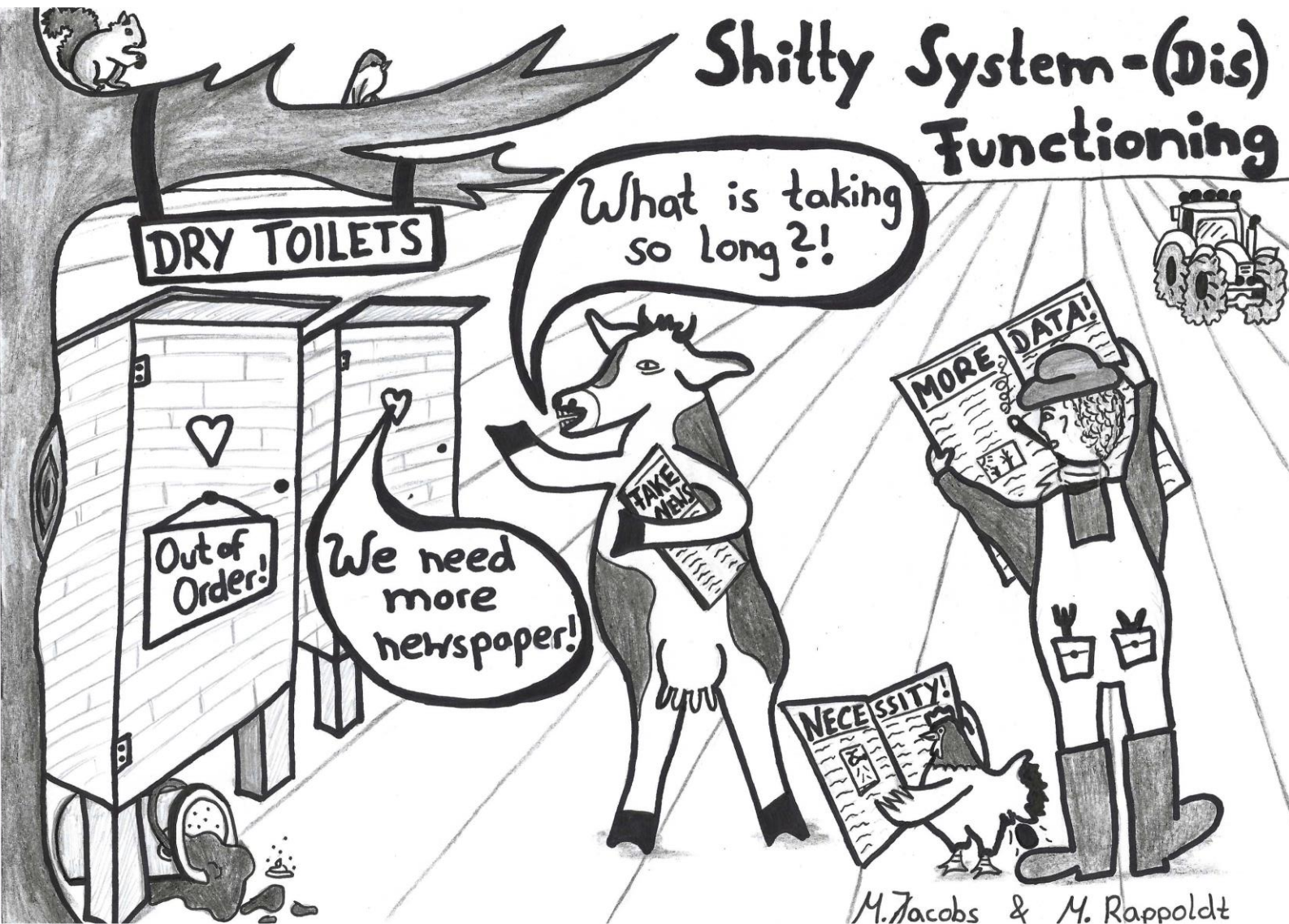


# Framing tools for fooling farms

An agnotological history of the nitrogen-dispute  
in Dutch newspaper discourse (1950 – 1980)

Menso Rappoldt



Thesis presented for the degree of  
Master of Science

Department for the History and Philosophy of Science  
Descartes Centre

16 July 2023



Utrecht  
University



# **Framing tools for fooling farms**

An agnotological history of the nitrogen-dispute in Dutch newspaper discourse (1950 – 1980)

by

**Menso Hugo Rappoldt**

Bachelor (BSc.) of Physics (University of Groningen, 2019)

Bachelor (BA.) of History (University of Groningen, 2019)

A thesis presented for the degree of

Master of Science (MSc.)

to the graduate programme of History and Philosophy of Science  
at the University of Utrecht

First examiner: dr. R.B. (Robert-Jan) Wille  
Second examiner: dr. F.D.A. (Daan) Wegener

ECTS: 52,5  
Student number: 7016174  
Contact: menso.rappoldt@gmail.com  
Date of submission: 16 July 2023 (Version to be graded)  
Conducted between: September 2022 and July 2023  
Number of words\*: ~45000  
Number of pages: 124

© M.H. Rappoldt, 2023

\*Excluding footnotes, appendixes, tables of content, and bibliography.

Front-page cartoon is a co-production by Marie Jacobs (drawing + design) and Menso Rappoldt (first sketch + design)



I dedicate this thesis to:

Elmar Schelkle (1961 – 2023)  
Great friend of my family  
Highly regarded ecologist and conservationist  
One who did not only notice the *presence* of all living organisms surrounding us  
But also their *absence*

&

*Boer Anar en het grote koeienvlaaiengevecht*  
(*Farmer Anar and the big bullshit-fight*, by Pieter Carmer, 1997)



It's a mystery to me  
The game commences  
For the usual fee  
Plus expenses  
Confidential information  
It's in a diary  
This is my investigation  
It's not a public inquiry

I go checking out the reports  
Digging up the dirt  
You get to meet all sorts  
In this line of work  
Treachery and treason  
There's always an excuse for it  
And when I find the reason  
I still can't get used to it

And what have you got  
At the end of the day?  
What have you got  
To take away?  
A bottle of whisky  
And a new set of lies  
Blinds on a window  
And a pain behind the eyes

– Dire Straits (1982)  
in *Love over Gold* (progressive rock album)





---

## Table of contents

---

<b>Table of figures</b>	<b>11</b>
<b>Abstract</b>	<b>13</b>
<b>Foreword</b>	<b>15</b>
<b>1. Introduction</b>	<b>17</b>
1.1. Historiographical links	19
1.2. Historical context and periodization	23
1.3. Research question and setup	27
1.4. Justification and introduction of my sources	29
<b>2. Agnotological tools</b>	<b>33</b>
2.1. Embracing the lunacy	34
2.2. Ignorance and the banality of evil	35
2.3. Universality and false oppositions	36
2.4. Science and the normativity of facts	38
2.5. The merchants of doubt	39
2.6. Media and alternative facts	40
2.7. Stigmatization and framing the normal	41
<b>3. Mapping controversies</b>	<b>43</b>
3.1. Actor-networks: Tying and untying connections	44
3.2. Literatures: Independently discussed controversies	47
3.3. Conservation and pollution	49
<i>Early defence of conservationism</i>	49
<i>Criticisms of hypocrisy and the trap of the modern farm</i>	51
<i>Publicly brainstorming solutions</i>	55
3.4. Population-growth, food security and global inequality	57
<i>The fertilizer necessity claim and the threat of population growth</i>	58
<i>Three criticisms of the green revolution</i>	61
<i>What about bio-farming and the relevance for the Netherlands?</i>	64
3.5. New diets and alternative farming	66
<i>Biological farming: soil, sustainability and environment</i>	66
<i>Biological farming: productivity, and alternative business-models</i>	68
<i>Visions and lifestyles for an alternative society</i>	70
<i>Conventional farming perspectives</i>	73

Continues on next page

<b>4. Agnotological analysis</b>	<b>75</b>
4.1. Superiority: Delusions, apathy and lunacy	76
4.2. The banality of dependence	77
4.3. The missing comparison: Absences and the claim of necessity	79
4.4. <i>Ad verecundiam</i> : The normativity of facts	80
4.5. Knowledge as noise: The call for more data	84
4.6. Fake news: Empty claims of objectivity.	86
4.7. The framing game: Rhetoric and other fallacies	90
4.8. Agnotology <i>avant la lettre</i>	94
<b>5. Conclusion</b>	<b>99</b>
5.1. Summary	99
5.2. Main findings	100
5.3. Some reflections	102
<b>Word of thanks</b>	<b>103</b>
<b>Bibliography</b>	<b>105</b>
<b>Appendixes</b>	<b>109</b>
Appendix A: Timeline main events	109
Appendix B: Overview of fertilizer controversy	110
Appendix C: Table of newspaper sources	113

---

## Table of figures

---

Figure 1: Images of environmental threats and water-quality management in the news	18
Figure 2: Superphosphate fertilizer factory at Deptford Creek, 1843	24
Figure 3: Number of selected sources for periods of five years	30
Figure 4: Global south farmers who remain anonymous in the news	45
Figure 5: Legend to raspberry-map	45
Figure 6: Raspberry-map	46
Figure 7: Number of source-articles containing fertilizer-related controversies	47
Figure 8: Combined presence of controversial subjects in 144 source-texts	48
Figure 9: Impressions of recreational areas or bio-diverse nature in the news	50
Figure 10: Impressions of conventional farming in Dutch newspapers	52
Figure 11: Cartoon of the farmers' dilemma	54
Figure 12: Farmers' protests after global oil crisis	55
Figure 13: Professor Kuenen and professor Polak	56
Figure 14: Professor Tinbergen and FAO director Boerma	58
Figure 15: Presentation of 'primitive' farming in the news	59
Figure 16: Cartoon for overpopulation	60
Figure 17: The presentation of poor children in the news	62
Figure 18: Scientist Bruinsma, chairman Knottnerus, and farmer Schermerhorn	65
Figure 19: Professor De Smidt	67
Figure 20: Drawings of idealized bio-farming gardens in the news	69
Figure 21: Reform shops and Sietz Leeftang	71
Figure 22: Slaughtered pigs	72
Figure 23: Van Nispen and the Cuperus brothers	73
Figure 24: Image of 'evidence' for anthroposophical agricultural methods	83
Figure 25: Hans Kok and DSM director Bogers	86
Figure 26: Number of animals shot by hunters in the Netherlands	88
Figure 27: ICI advertisement	92



---

## Abstract

---

In a period of accelerating modernization of Dutch agriculture (1950 – 1980), newspaper media saw the coming of a public debate about fertilizers, a cosmopolitical issue combining technical aspects from agricultural sciences and ecology, as well as aspects of social justice, class-struggle, and post-colonial relations. Controversial themes included how to ensure global food security for a growing population and how to deal with new worries of environmental pollution. Especially from the late 1960s onwards, the debate started to polarize, positioning environmentalist ideology against a technocratic one. Although publicly highly controversial, in societal ‘reality’ bio-farming, vegan diets, and socio-economic solutions to global inequality, were barely practised. Values of good business, economic growth, and the promise of scientific innovation, remained dominant, clearing the way for an eco-modernist mindset that would change the character of the debate during the 1980s.

Against that background, the public fertilizer debate cannot be viewed as a free marketplace of ideas, for the newspaper reader to consume and choose between as part of a democratic process. Rather, a wide range of public actors, conventional farmers, bio-farmers, directors of fertilizer companies, politicians, scientists, and journalists, actively used the public platform of newspapers to support their cosmopolitical claims, and ridicule, marginalize, or hide the claims of others. That rhetoric of ideological manipulation can be interpreted and studied as a process of producing ignorance about ideological alternatives. On the basis of 144 newspaper articles, the fertilizer debate of the time is represented with regard for its complexity. Afterwards it is analyzed by looking at the selectivity of authors, showing how various fertilizer-related problems were dealt with in reductionistic fashion, producing ignorance about their systemic interdependencies. In addition, in this agnotological history, seven different rhetorical strategies or tools are conceptually worked out (hypothetically) and used to identify the making of ignorance in newspaper discourse, wanting to know how ignorance of ideological alternatives was produced. Many examples were found of cruel optimism, hypocritical philanthropy, false oppositions, normative facts, knowledge as doubtful noise, fake news, and stigmatization, used to frame the notion of the modern farm. A close reading of my sources also suggests that many authors at the time were both aware of various ideological options, as well as at least some of the agnotological strategies available. Ideological manipulation, thus, was in part intentional.



---

## Foreword

---

*(Mundus vult decipi, decipiatur ergo). And so cunning was the deceptive use of words combined with a deceptive tone that only people with brain damage would not fall for it.*<sup>1</sup>

At primary school I had a best buddy named Kevin Wight. During breaks we would play hide and seek with our classmates on the yard. Kevin did not hide in the ‘usual’ way. He would just go and join other children playing jump rope, building a sandcastle, or rolling marbles. While being right in front of our nose and eyes, we would never find him, looking behind walls, bushes or trees. Choosing the opportune moment, having full vision on where the ‘seeker’ was walking, Kevin would make a run for it, and call out his freedom.

While on the school yard, Kevin was celebrated for his ingenuity, creativity, out of the box thinking, in society at large the rules of the game become ideological, meaning that they become the criteria for judging what is possible or not, what is right or not, what is true or not. Those who seek (for) alternatives are always at a disadvantage in the struggle for attention, because most readers – as well as writers – of newspapers only see what they already expect to see, only understand what can be coherently aligned with common sense. What counts as reasonable is co-determined by the values, concepts, and norms of dominant (post-industrial) systems of innovation and societal organization like capitalism, communism, technocracy, modernity, or (pre-industrial) religion. This is why Herbert Marcuse and others wrote critically about mass media in the 1960s, questioning its ability to engage with alternative ideas.<sup>2</sup> Despite the often-frustrating activity of ruling systems, criticisms or incommensurable recommendations for change, as Thomas Kuhn describes for scientific paradigms, tend to be easily framed away as unrealistic or insensible.<sup>3</sup> Thijs Lijster described that situation as “men with suits and ties who laugh scornfully and say that it is ‘just’ not how the world works.”<sup>4</sup>

Despite such criticisms, freedom of speech, free press, and free journalism is defended proudly as among the great accomplishments and benefits of democracy, celebrated ever since the (re)invention of the “public sphere” during the 17<sup>th</sup> century.<sup>5</sup> According to the Marquis de Condorcet (1743 – 1794), printed media had a “pivotal role” in bringing about

---

<sup>1</sup> O. (Oliver) Sacks, *De man die zijn vrouw voor een hoed hield* (Amsterdam: Bezige Bij, 2018): 110. Originally titled, *The man who mistook his wife for a hat* (1985).

<sup>2</sup> H. (Herbert) Marcuse, *De eendimensionale mens: Studie over de ideologie van de geavanceerde industriële samenleving* (Amsterdam: Polak & Van Gennep, 2023): 23. Originally titled, *One-dimensional man: Studies in the ideology of advanced industrial society* (1964), translated by Huub Stegeman.

<sup>3</sup> T.S. (Thomas) Kuhn, “The nature and necessity of scientific revolutions,” in *Philosophy of science: The central issues*, edited by M. Curd, J.A. Cover and C. Pincock (New York: W.W. Norton & Company, 2013), 79 – 93: 80. Originally published as T.S. Kuhn, *The structure of scientific revolution* (Chicago: University of Chicago Press, 1996).

<sup>4</sup> T. (Thijs) Lijster, “Voorwoord: Hoeveel dimensies verdraagt de mens?,” in *De eendimensionale mens* (Amsterdam: Polak & Van Gennep, 2023): 17.

<sup>5</sup> A. (Adrian) Johns, “Print and public science,” in R. Porter (ed.), *The Cambridge history of science Volume 4: Eighteenth-century science* (Cambridge: Cambridge university press: 2003): 536 – 560, 551.

(the) Enlightenment and (the) French revolution.<sup>6</sup> While it is easy to point out that media can also be used for propaganda, censure, and manipulative oppression, this, according to (Western<sup>7</sup>) journalistic ideals does not happen when the media are ‘free.’ But who is free when acting in the service of a totalitarian modernity (see Marcuse) that manipulates human desires and sets the axioms for rationality? On top of that, one could question whether the form of most newspapers enables a kind of critical reflection that reaches a previously uninformed audience, meaning that journalism mostly tells people what they already know and contributes little to a growing critical mass. As Rolf Dobelli, a popular author, pointed out, complex critical discourse does not sell as well as “shocking and scandalous news.”<sup>8</sup> For Dobelli, Western media are largely producing irrelevant information that is either a waste of time or dangerously deceptive. The “public sphere” that Condorcet had experienced may not be what it once might have been.

Construction of ignorance or the absence of alternative knowledge is the object of an agnotological study. Firstly, this agnotological thesis is concretely concerned with the (discursive) mechanisms or ‘tools’ of hiding and manipulating used in Dutch newspapers of the first post-WWII decades. It is not my goal to add to – or criticise – existing philosophical insights or ideas. Rather, I hope to provide historical evidence for the support of a critical understanding of ‘the news’ as potentially (ideologically) manipulative, and system-conformist. In that sense the topic of fertilizers is ‘merely’ a case study. Although, secondly, an independent goal of this thesis is also to add insight to Dutch history of political agriculture, and the “battle for the countryside” that continued until today.<sup>9</sup> Thirdly, by developing my own heuristic tools for agnotological analysis or deconstruction of newspaper discourse, and applying the tools developed by others, I hope to provide a ‘toolbox’ that is not only (conceptually) required for my own historical interpretations, but can also be used beyond the context of Dutch newspapers of the 1950s – 1970s. In fact, I have already found myself applying this ‘toolbox,’ reading contemporary works of journalism.<sup>10</sup>

---

<sup>6</sup> See J.A. Nicolas de Caritat and Marquis de Condorcet, *Sketch for a historical picture of the progress of the human mind* (New York: Noonday press, 1955), translated by J. Barraclough, edited by S. Hampshire, originally published in 1795. Referenced in A. Johns, “Print and public science,” 551.

<sup>7</sup> Usually, throughout this thesis, and not often, this word ‘Western’ is used to prevent universal claims or interpretations, not wanting to imply that journalistic ideals were/are the same everywhere without actually looking into it. It is surely a vague term but vagueness of meaning, in my view, is an advantage of such terms as ‘Western’. It blurs boundaries that are blurry anyway, but clarifies a rough historical and cultural direction.

<sup>8</sup> R. (Rolf) Dobelli, *Die kunst des klugen handelns* (München: Piper Verlag, 2019): 210.

<sup>9</sup> #87, 1973 (see appendix D), translation: “Slag om het platteland”

<sup>10</sup> Perhaps ironically, I do not usually read the type of newspapers used as source-material in this thesis.



---

## Chapter 1: Introduction

---

*For Schopenhauer, the kind of institutionalization of lying – and of lying about lying – that occurs in the practice and propagation of rhetoric helps to ensure a culture of manipulation and deceit by providing a sophisticated moral pretext for what is at root nothing nobler than a toxic admixture of vanity, ignorance, and the will to dominate.*<sup>11</sup>

Biodiversity is hot (again) in the contemporary Netherlands. Some question the need to protect rare plants or insects.<sup>12</sup> Others discuss whether more or less modernization is the better solution for a threatening ecocide.<sup>13</sup> Concerns for conserving a Dutch country culture and a typical agricultural landscape are currently occupying the democracy, as are ‘elitist’ city-people’s ‘ridiculous rules’ and ‘impossible norms’.<sup>14</sup> The farm, a symbol of human’s dominating control of – as well as primary dependence on – the fruits of the soil, has become central to one of the most controversial, if not defining, political topics of the modern today: How and why do we protect nature?

Fertilizers are just one among many technologies that play an active role in this problem-reductionist debate, meaning a debate in which issues of socio-economic inequality and injustice, climate change, and environmental pollution, are rhetorically separated. As such, external enemies and threats can be battled independently, never questioning the integrity of the techno-political systems as a whole. Herbert Marcuse saw how the Cold War was used to distract from criticisms of capitalism (among others).<sup>15</sup> We also know the war on drugs and the war on terror. In this thesis, as well as in the contemporary Netherlands, we deal with the war on hunger. Fertilizers symbolize a human technology that wants to mimic nature and replace its ‘natural’ processes. For some, fertilizers are a great invention, solving hunger, and driving progress.<sup>16</sup> For others, fertilizers are a weapon of evil that helps to create poverty and destroy the resilience of nature on which future generations will depend.<sup>17</sup>

Ecocide (or governmental eco-terrorism), climate change, and environmental pollution, slow processes of destroying or poisoning the habitats of countless organisms and entire species in the world, are threatening, among other things, the fertility of soils, the quality of drinking water, the habitability of coastal cities, food security, increasingly dangerous floods and forest fires, erosion, and increasingly dangerous pandemics in both humans and other animals.<sup>18</sup> Figure 1 shows some images concerned with environmental

---

<sup>11</sup> E. (Ethan) Stonemason, “Everyone is at liberty to be a fool: Schopenhauer’s philosophical critique of the art of persuasion,” in *Epoché* 24, nr. 1 (2019): 133 – 154, 148.

<sup>12</sup> A. (Arnout) Jaspers, *Stikstoffuik: Politici in de ban van de ecolobby* (Amsterdam: Blauwburgerwal, 2023).

<sup>13</sup> G. (George) Monbiot, *Regenesis: Feeding the world without devouring the planet* (New York: Penguin books, 2022).

<sup>14</sup> K. (Karel) Smouter, *Blauw Wit Rood: De boerenopstand als Spiegel voor Nederland* (Amsterdam: Bezige bij, 2022).

<sup>15</sup> T. Lijster, “Voorwoord: Hoeveel dimensies verdraagt de mens?,” 15.

<sup>16</sup> A. (Arnout) Jaspers, *Stikstoffuik*. & V. (Vaclav) Smil, *Enriching the earth: Fritz Haber, Carl Bosch, and the transformation of the world food production* (London: MIT press, 2001).

<sup>17</sup> T. (Thomas) Oudman, *Uit de shit: Pleidooi voor meer boeren en minder vee* (De correspondent: 2023). & V. (Vandana) Shiva, *Who really feeds the world?* (London: Bloomsbury, 2023). Originally published as *Chi nutrirà il mondo?* (Milan: Giangiacomo Feltrinelli, 2015).

<sup>18</sup> See D. (David) Whyte, *Ecocide: Kill the corporation before it kills us* (Manchester: Manchester university press, 2020). & N. (Naomie) Klein, *This changes everything: Capitalism Vs. the climate*

threats published in Dutch newspapers generations ago. Due to the large spectrum of environmentalist worries, the fertilizer-dispute was and is still today imbedded within a much wider political dispute that is to decide if ecocide is actually happening, why it would need to be prevented, at what cost, and how. That discussion goes beyond the scope of this thesis but provides the context for its relevance, tracing the origin of related (social) injustices. What was relevant in the 1970s is still relevant today.

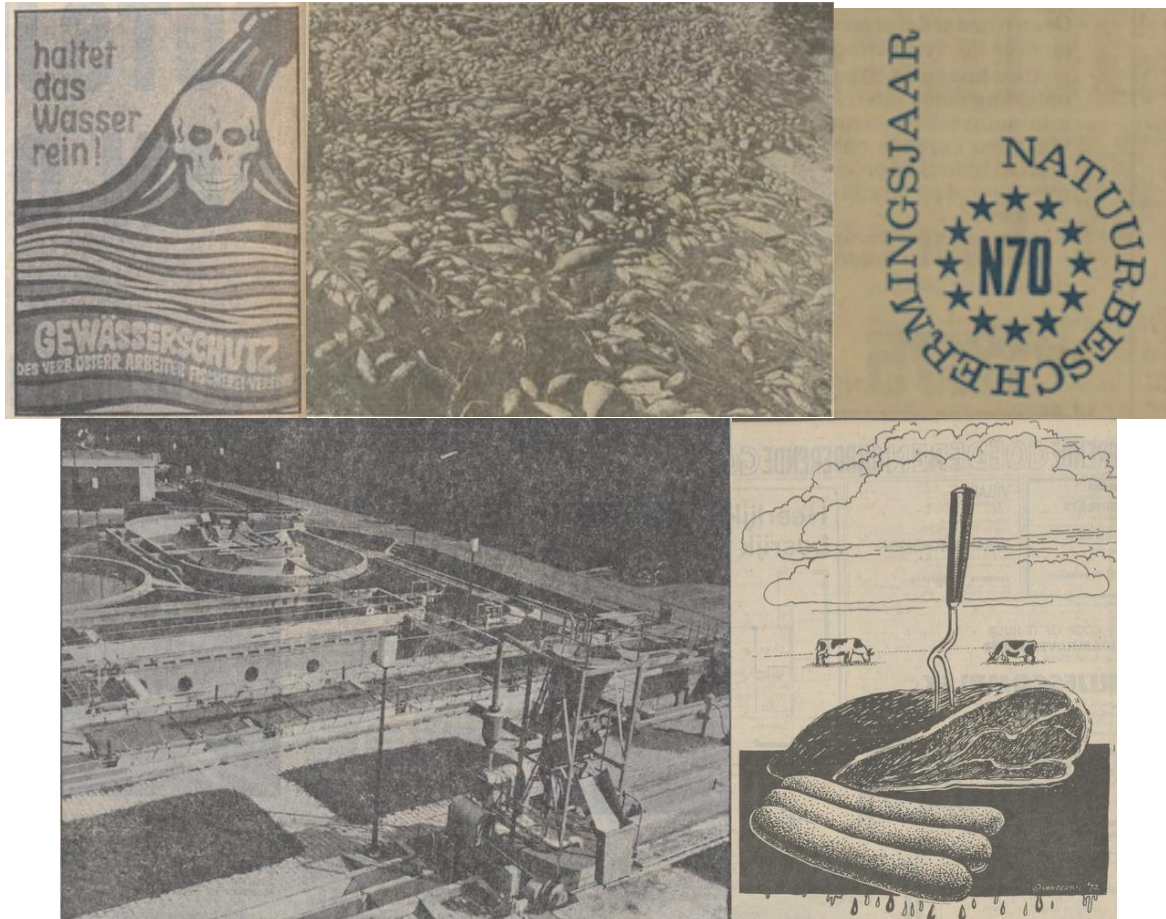


Figure 1: Visual representations of environmental threats and water-quality management in the news of the early 1970s. On the top left: “Keep the water clean,” a sport fishing advertisement shown in *De Volkskrant*. On the top centre: Dead fish, shown in *NRC*. On the top right: Symbol for the “nature protection year N70,” shown in *Nieuwblad van het noorden*. On the bottom left: A water treatment plant, shown in *De Volkskrant*. On the bottom right: A cartoon showing environmental pollution of water from farming or husbandry, published in *NRC*.<sup>19</sup>

The central guiding question that accompanies all discussions about fertilizers is whether or not it would be possible to feed humanity (sustainably) without using them or very limitedly. The question immediately clarifies why its context is so controversial and polarized. Environmentalists are easily accused of wanting to starve half the world’s population. The war on hunger, supposedly ‘solved’ by technological progress, can be politically exploited to marginalize fundamental system-criticisms. And although the question may seem to be one

(New York: Simon & Schuster, 2014). & C. Bonneuil and J. Fressoz, *The shock of the anthropocene: The earth, history and us* (London: Verso, 2017), translated by D. Fernbach.

<sup>19</sup> #23 (1969), #36 (1970), #34 (1970), #79 (1972), #60 (1972). (See appendix D)

objectively answerable by science, it is not. The production of knowledge or facts about modern agriculture is, in the word of Isabelle Stengers, *cosmopolitical*, meaning that universal fact depends on political paradigms.<sup>20</sup> In this case, the question of how to feed the world depends in many different ways on what and how much we consume, waste, and recycle, how we organize agriculture, how we organize our economy, what alternative narratives can become fashionable, and how we use science to produce knowledge about nature.<sup>21</sup> The way such alternative political ideas are marginalized, or hidden, both in society as well as in newspaper discourse, is the main theme of this thesis. I aim to explore how the absence of political knowledge was produced in the media, in particular in the case of the fertilizer dispute.

Studying controversy from a cosmopolitical or ideological point of view rather than only an institutional scientific one, also changes the perspective on what voices may be referred to as reactionary, i.e. keeping old discussions going that are no longer considered 'open to discussion,' wanting to prevent 'things' from developing the way they do. While it is perhaps a minority who still today rejects a broad scientific consensus on climate change and other environmental issues, from an ideological point of view, their perspective aligns well with dominant political movements. Just because 'everyone' has their mouth full of sustainability and green energy, it does not follow that society actually becomes sustainable. Thus it is not ultimately the media that provides legitimacy to climate change deniers by offering them a platform, it is society at large, remaining ignorant of the practical implications of acting against the threats of ecocide and climate change. In turn, radical environmentalist- or climate movements struggle to keep a discussion going about how to change some of the fundamentals of Western society, moving against consensus. The very phenomena of Western elites believing that environmental concern has become mainstream and dominant is telling for the contemporary discourse to have grown forgetful of system criticism, eclectically accepting eco-modernist strategies, and seeing too little difference between speech and action.

### 1.1. Historiographical links

A cosmopolitical controversy is one in which the production of knowledge, the object of interests for many *Science and Technology* scholars, is heavily ideological. To study controversies for understanding the making of knowledge or ignorance is a well-known strategy in the field.<sup>22</sup> In studying the struggle between alternative paradigms, the making of knowledge on one 'side' goes hand in hand with the marginalizing of the other. This phenomenon can be understood as the consequence of incommensurability between alternative systems.<sup>23</sup> Thomas Kuhn comes to the conclusion that various 'sides' of a revolutionary dispute cannot rely on common sense, a shared "institutional matrix" used to evaluate arguments.<sup>24</sup> The logic of one system cannot be used to meaningfully judge elements of another unless it is used to criticise it as a whole. The same words, such as 'sustainability' or 'progress,' have fundamentally different meanings within different ideological languages, causing misunderstandings. And thus, Kuhn concludes, a revolutionary dispute, an ideological clash, can only be resolved by "techniques of mass persuasion."<sup>25</sup>

---

<sup>20</sup> I. (Isabella) Stengers, *Cosmopolitics I: The science wars, the invention of mechanics, thermodynamics* (Minneapolis: University of Minnesota press, 2010).

<sup>21</sup> V. (Vandana) Shiva, *Who really feeds the world?*

<sup>22</sup> S. (Steven) Shapin and S. (Simon) Shaffer, *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life* (Princeton: Princeton university press, 2011): xliii. Originally published in 1985.

<sup>23</sup> T.S. (Thomas) Kuhn, "The nature and necessity of scientific revolutions," 82.

<sup>24</sup> *Idem*, 80.

<sup>25</sup> *Ibidem*.

For that I turn to the Herman-Chomsky model of newspaper propaganda, first published in *Manufacturing consent* (1988). They described an opposition between a liberal-pluralist and a critical-Marxist view of ‘the news.’ The former sees the media function as a “healthy marketplace of ideas.”<sup>26</sup> Here the public is offered a range of different ideological options and can freely choose between them. However, in the latter view of the media, its role as a critical reflective authority is questioned, worrying that professional journalists are themselves “socialized into” the dominant (political) culture, internalizing its norms.<sup>27</sup> What is more, even when newspapers offer alternative ideas and insight into alternative ideology, its readership, the ‘public sphere,’ is likely to lack a conceptual tool-kit or ‘institutional matrix’ needed to grasp – or meaningfully interact with – an alternatively coherent frame.<sup>28</sup>

Thomas Huckin defines a frame as “a socially based, abstract, high-level knowledge structure that organizes certain information about the world into a coherent whole [...] which allows for recognition and guides perception,” provided that it already “belongs to the reader’s knowledge of the world.”<sup>29</sup> To frame then, as a verb for ideological manipulation, is to make a text or a discourse fit into a general structure of values, beliefs, or codes of behaviour.<sup>30</sup> Such ‘bubble-forming’ is the phenomenon of the news being produced for – and consumed by – predefined social classes or political groups. It is much easier to consume news that underscores or confirms the ideology you have already incorporated into your worldview.<sup>31</sup> And as such, the news does what Herman and Chomsky expect it to mostly do: producing propaganda for dominant ideologies, selectively integrating its readers into the “institutional structures” of society.<sup>32</sup>

It is especially this notion of selectivity, associated with ideological framing, that makes the production of ignorance – an agnotological rhetoric – manipulative. In contrast to what is *present*, the *absent* is also meaningful: the unsaid, hidden, unexplained, or uncommented, left out due to biased choices in how to present information and how to represent experts or other voices.<sup>33</sup> Whether or not such manipulation was intentional remains rather irrelevant for the scope and purpose of this thesis. Huckin points out that journalism depends on many other sources of information. If these sources: experts, interviewees, politicians, or scientists, are themselves ideologically biased, perhaps indeed unaware of their political assumptions, then the intentionality of ideological manipulation through the news is “dispersed,” i.e. manipulation gets “passed down the food chain.”<sup>34</sup> In other words, when the news is produced, as the Herman-Chomsky model predicts, within a techno-political system or frame, it becomes difficult to reflect on that system itself, and often-dominant systemic biases are reproduced.

---

<sup>26</sup> A. (Andrew) Mullen and J. (Jeffery) Klaehn, “The Herman-Chomsky propaganda model: A critical approach to analyzing mass media behavior,” in *Sociology Compass* 4, nr. 4 (2010): 215 – 229, 216.

<sup>27</sup> M. Gurevitch et al. (eds), *Culture, society and the media* (London: Methuen, 1982): 2. Referenced by A. (Andrew) Mullen and J. (Jeffery) Klaehn, “The Herman-Chomsky propaganda model.”

<sup>28</sup> *Ibidem*.

<sup>29</sup> P. Donati, “Political discourse analysis,” in M. Diani and R. Eyerman (eds), *Studying collective action* (London: Sage publishers, 1992): 136 – 167. Referenced by T. (Thomas) Huckin, “Textual silence and the discourse of homelessness,” in *Discourse & Society* 13, nr. 3 (2002): 347 – 372, 354.

<sup>30</sup> *Ibidem*.

<sup>31</sup> R. (Rolf) Dobelli, *Die kunst des klugen handelns*, 210.

<sup>32</sup> A. (Andrew) Mullen and J. (Jeffery) Klaehn, “The Herman-Chomsky propaganda model,” 217.

<sup>33</sup> See for the notion of *presence* C. Perelman and L. Olbrechts-Tyteca, *The new rhetoric: A treatise on argumentation* (Notre Dam: University of Notre Dam press, 1969), translated from the French (1958). Referenced by C.O. (Craig) Stewart, “A rhetorical approach to news discourse: Media representations of a controversial study on ‘reparative therapy’,” in *Western journal of communication* 69, nr. 2 (2005): 147 – 166, 149.

<sup>34</sup> T. (Thomas) Huckin, “Textual silence and the discourse of homelessness,” 366.

In a study of ignorance, the notion of manipulation, implying a degree of intention or at least awareness of the dialectic, is somewhat problematic since it is already hard to tell what authors left out, let alone why. However, throughout this thesis it will become evident that many authors actively compared various ideological views, were explicitly aware of rhetorical strategies (see 4.8), and did not always hide their contempt for alternative perspectives. It is not my idea to suggest the presence of evil elites that form conspiracies against the public domain. And precisely because of that, I want to stay clear of a purely structuralist analysis of discourse, sketching a narrative of a battle between faceless ideologies. Rather, a minimum of agency, the names and faces of the many different societal actors appearing in the news, provides a more convincing understanding of how ideological manipulation works: a complex whole of voices that feel the need to make public claims, as such actively and arguably intentionally contributing to how the media present a variety of political options.

In this thesis, the fertilizer dispute of the 1950s – 1970s is shown to become a popular theme in newspapers of the 1970s, once fertilizers became politically controversial in a more public and official science-based manner. Thus considering how much news writers like controversy, tending to ignore anything normal and generally accepted, one might easily conclude the liberal-pluralist view of the news to be more fitting or explanatory. There was ample space for a discursive clash of paradigms, showing the reader a large variety of nuance and alternative. Considering much of the above, a total of three issues problematize this view of a healthy, fair, and critical discursive clash of ideologies.

First, while alternative paradigms/frames/ideologies may be overall present in the news, various genres or *literatures*, sets of news-articles discussing a common theme like global inequality or environmental pollution, tend to create separate discussions of separate issues. Apart from bubble forming, addressing/confronting different audiences with different information and ideas, problem-reductionism also enables a discussion of alternatives without addressing an alternative logic of an alternative ideology.<sup>35</sup> For example, a technocratic article about food security may speak in favour of fertilizer-use, arguing for its necessity. Many of such articles would not even mention the existence of biological alternatives. That is a direct form of producing absence. The articles that do mention such alternative agricultural methods however, may for example argue their insufficiency, claiming that bio farming is not efficient enough to feed a growing global population and earn enough money for a profitable farming business. While such argumentation is not perhaps technically incorrect, it hides the logic of an alternative system in which bio farming is combined with alternative socio-economic models and alternative diet-culture. As such, addressing alternatives outside of their ideological context and splitting up various issues into independent problems to solve, is a more manipulative way of producing ignorance, avoiding a dialectical or ecological logic.

Second, by focussing on disputes or controversies, the media enlarge or zoom into minority views, giving an impression of a democratic process between two or more ‘sides’ of a struggle, while in actuality, this debate mostly occurs on paper. Society itself is roughly organized according to the ideas of one ‘side.’ The media thus help to reduce democratic struggle to a discursive ghost, and create an illusion of just representation of societal interests. Minority voices are seemingly heard and listened to, critical media make sure the newspaper reader’s desire for a tolerant, diverse, and perspective-rich discourse is satisfied, but the dominant paradigm remains in power. This may be especially problematic for environmentalism, defending (in part) the rights of those who are literally voiceless. The

---

<sup>35</sup> P. (Peter) Gelderloos, *The solutions are already here: Tactics for ecological revolution from below* (London: Pluto press, 2022): 23 – 24.

impression of honest discursive ideological contest produces ignorance of its actuality or reality.<sup>36</sup>

Third, against the background of an alternative system that barely exists, it is so much easier to establish authority and credibility for something that does. No journalist ever needed to explain to Dutch newspaper readers the need to eat meat, the benefits for society of producing food against a lower price, or the importance of a profitable business. Such values are and were common sense. The protection of the environment or the possibility of recycling human excrements, in contrast, needed explanation. Therefore, the rhetorical task of those who argued idealistically or anti-conformist tended to be a lot harder. Absence or ignorance of alternatives is thus often produced in those discursive places where paradigms of an existing system are compared to paradigms of a mostly utopian kind. The latter is mentioned, staged, represented, but nevertheless marginalized, marked as unreasonable. The contradictions, limits, intentions, interests, imbalances, and mistakes of an alternative are easily pointed out. But the same or even more irrationality of the dominant and ruling ideology of modern agriculture within a capitalist and ecocidal system, in turn, can be hidden behind a conservative frame of rationality, and a common interest of fighting against the external threat of poverty and famine.<sup>37</sup> As such, agnotological rhetoric produces the absence of systemic self-reflection.

With the above in mind one last historiographical issue needs addressing. Historians of environmentalism, as well as other historians, like to point out complexities, breaking down or deconstructing dichotomies, and analysing political developments historically as an organic, somewhat contingent process towards new understandings, compromises, and relationships. “Ideologies come and go but we historians must look beyond them.”<sup>38</sup> A large variety of actors, interests, and ideas play a role in this messy struggle for power, truth, and emancipation. Indeed, the internal contradictions or problems of claimed-to-be coherent paradigms or ideologies are thought to be a reason to, anachronistically, analyse ambiguities rather than broader trends and competition.<sup>39</sup> While I consider that an interesting and sometimes warranted approach to history and political discourse, for this thesis it is important to acknowledge the discursive existence of a dialectical ideological struggle, as it was perceived or experienced by newspaper readers and analysts at the time, as well as today. It is the agnotological mechanisms of their rhetorical battle I am interested in.

Ideologies as such must not be seen as reflections of coherent frames and societal logics that make its believers blind to nuance, complexity, problems, contradictions, or practical details. While ideologies might be simplifications, “visions of the world as it should be,” they tend to be recognized by those who refrain from dogmatism as mere heuristics, shortcuts to understand political disputes, conceptual tool-kits that help understand a world that is anyway much more complex than anyone could possibly grasp, and a source for motivation to strive for ideals, to formulate goals.<sup>40</sup> So, understanding a historical political dispute or controversy as a struggle between two ideologies, is not surrendering to simplification, wanting to categorize every actor, argument, and idea into one out of two boxes. Rather, it is meant to embrace the competition between fundamental ideals that were

---

<sup>36</sup> J. (Jon) Christensen, “Smoking out objectivity: Journalistic gears in the agnotology machine,” in R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008): 266 – 282.

<sup>37</sup> T. (Thijs) Lijster, “Voorwoord: Hoeveel dimensies verdraagt de mens?,” 15.

<sup>38</sup> Words of prof. W. Mijnhardt, during a speech of the Descartes center reunion, October 2022.

<sup>39</sup> M. (Maarten) Hajer, *The politics of environmental discourse: Ecological modernization and policy process* (Oxford: Clarendon press, 1995): 78.

<sup>40</sup> T. (Tomasso) Venturini, “Diving in magma: How to explore controversies with actor-network theory,” in *Public understanding of science* 19, nr. 3 (2010): 258 – 273, 267.

also understood as such at the time. Their internal (attempted) coherence, offering alternatives, while not perfect or uncritical, is what makes system-criticism reasonable.

Additionally, while not blind to nuance or detail, I would consider it simply inaccurate and itself problematic to reduce a clash between partially incommensurable cosmopolitical paradigms to only a messy (relativist) mountain (or raspberry, see 3.1) of actors, arguments, and (inter-subjective) ideas. Such reductionism, as pointed out further above, produces its own kind of ignorance about the interdependencies of societal and ecological problems. The political relevance of a more holist approach to society, I believe warrants a dialectical understanding of past political struggle. I agree with Murray Bookchin that postmodern influences on history writing have corroded the notion of coherent thinking and replaced it by a “patchwork eclecticism and ideological faddism.”<sup>41</sup> If my academic writing cannot be radical as well as critical, it is a “toothless and ordinary language philosophy,” studying rhetoric for its own sake, and analysing the complexity of language rather than the complexity of ideological argument or content.<sup>42</sup> The idea that we can have highly modernized intensive agriculture in combination with a few nature conservation areas, separating the farmer from ‘nature’, was born out of eclectic compromise and related problem reductionism, in Dutch also known as *polderen*. Today we run into the consequences of such policies, which is why many analysts of the contemporary ‘nitrogen crisis’ suggest integrating farming and (surrounding) ecosystems again.<sup>43</sup> As an historian I do not wish to reproduce an eclectic understanding of ideology, that would serve the interests of a technocratic capitalism, and would therefore be equally politically biased.<sup>44</sup>

## 1.2. Historical context and periodization

It was around the beginning of the 19<sup>th</sup> century that new chemical insights contributed to a new scientific understanding of why crop rotation and the circulation of materials (read: nutrients) in the form of dung and compost was so important for agricultural purposes, methods known since millennia.<sup>45</sup> These discoveries fulfilled some of the conditions for the development of revolutionary new ideas about soil, fertility and agricultural practices based on a material worldview and an understanding of elements as basic unchanging building blocks of organic substance. As early as 1840, the German chemist and ‘father of fertilizer science’ Justus von Liebig (1803 – 1873) made a prediction of the agricultural future based on modern insights. He wrote: “There will be a time in which fields will be fertilized with chemically manufactured fluids.”<sup>46</sup> He was right: his dream came true roughly a century later. The British farmer/landowner and chemist John Bennet Lawes founded the first (granular) fertilizer factory in the world as early as 1843 (see figure 2).

---

<sup>41</sup> M. (Murray) Bookchin, *The philosophy of social ecology: Essays on dialectical naturalism* (Edinburgh: AK press, 2022): 73. First published in 1990.

<sup>42</sup> T. Lijster, “Voorwoord: Hoeveel dimensies verdraagt de mens?,” 16.

<sup>43</sup> T. (Thomas) Oudman, *Uit de shit*. Also K. (Karel) Smouter, *Blauw Wit Rood*, 99.

<sup>44</sup> See F. (Fredric) Jameson, *Postmodernism, or the cultural logic of late capitalism* (London: Verso, 1993).

<sup>45</sup> F.H. (Franklin) King, *Vierduizend jaar kringlooplandbouw* (Delft: Eburon, 2011). Originally titled *Farming of forty centuries: Permanent agriculture in China, Korea and Japan* (1911), translated by Sietz Leeftang.

<sup>46</sup> D.R. (David) Montgomery, *Dreck: Warum unsere Zivilisation den Boden unter den Füßen verliert* (München: Oekom Verlag, 2010): 240. Originally titled *Dirt: The erosion of civilization* (2007), translated by Eva Walter.

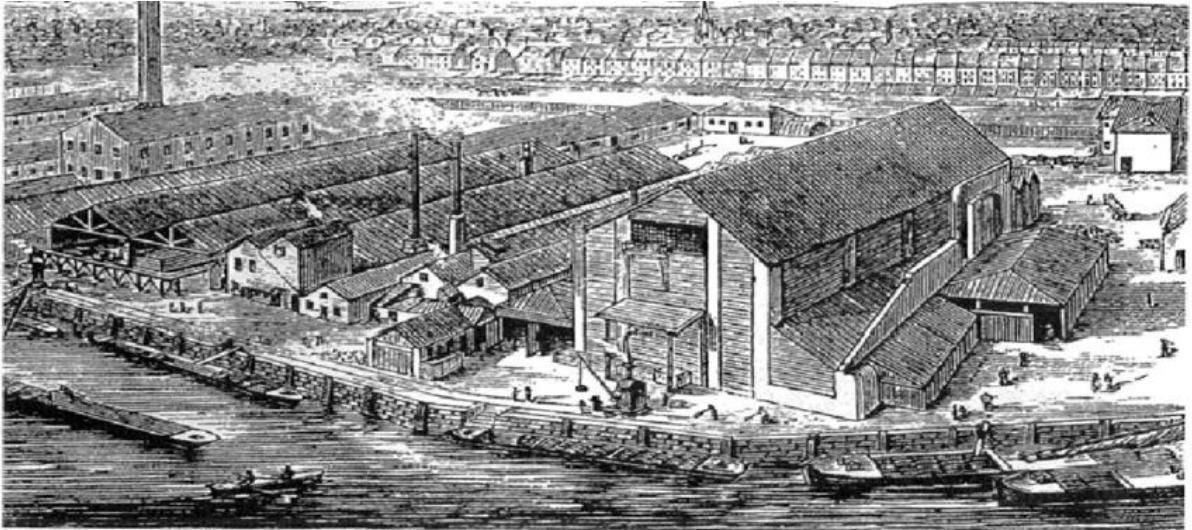


Figure 2: Superphosphate fertilizer factory at Deptford Creek, 1843.<sup>47</sup>

By the end of the 19<sup>th</sup> century, well before the introduction of the famous Haber-Bosch process (1910), about one million tons of superphosphate were produced yearly within the UK alone.<sup>48</sup> This history marks the origins of what is now known as ‘conventional agriculture.’ As such I will refer to it, an industrialized form of food-production, throughout this thesis. Though now conventional, it is historically more meaningfully a type of agriculture that has replaced millennia old traditional methods. However, the 19<sup>th</sup> century was not yet a time truly dominated by chemical industries. Imagine the economic effort necessary to ship around the excrements of birds (Guano manure from the Chincha islands) halfway over the globe, a practice that could also count on sarcastic critics, since Agro-chemistry still needed to prove itself to the Western farmer.<sup>49</sup> As soon as chemically produced (nitrogen) fertilizer became cheap, nobody would still travel the world for Guano. That began to happen in the 20<sup>th</sup> century.

Fears of ecological collapse due to erosion and soil-fertility loss as a consequence of human exploitation are not uncommon throughout the history of human civilization.<sup>50</sup> Signs of resistance to an industrial materially reductionist method can be traced back to early warnings, but developed more seriously during the first half of the 20<sup>th</sup> century. During those decades, holist and perhaps anti-modernist philosophy mixed with a variety of allies, some of them scientific, others occultist or superstitious. The science of ecology had come up around the end of the 19<sup>th</sup> century but the notion of an ecosystem was first coined in 1928 by A.R. Clapman (1904 – 1990).<sup>51</sup> The idea of a noösphere, a sort of conceptual predecessor of the anthropocene, was coined about a decade earlier.<sup>52</sup> And by the 1940s, ecological scientists had reached a level high enough to become authorities in matters of environmental conservation.<sup>53</sup> In parallel to academic developments in the study of the environment,

---

<sup>47</sup> Image taken from D.M. (David) Ivell, “Phosphate fertilizer production: From the 1830s to 2011 and beyond,” in *Procedia engineering* 46 (2012): 166 – 171, 167.

<sup>48</sup> D.R. (David) Montgomery, *Dreck*, 241.

<sup>49</sup> *Idem*, 243.

<sup>50</sup> C. (Clive) Ponting, *A green history of the world: The environment and the collapse of great civilizations* (London: Penquin books, 1993).

<sup>51</sup> P. Warde, L. Robin, and S. Sörlin, *The environment: A history of the idea* (Baltimore: Johns Hopkins university press, 2018): 67.

<sup>52</sup> V. (Vladimir) Vernadsky, “The biosphere and the noösphere,” in *American scientist* 33, nr. 1 (1945): 1 – 12.

<sup>53</sup> P. Warde, L. Robin, and S. Sörlin, *The environment*, 71.



occultist movements like anthroposophy were among the earliest pioneers of experimenting with alternative agricultural methods. The first biodynamic farm in history (*avant la lettre*) was owned by the German farmer Ernst Stegemann as early as 1922.<sup>54</sup> Indeed, contemporary bio farming has its historical roots both in ecological science and in occultist anthroposophy.<sup>55</sup> Such movements of resistance, and gathering evidence of environmental problems, however, remained marginal, and far away from public discourse.

Van Grinsven and Van Eerdt describe how manure or dung turned from an essential ingredient into a by-product of agriculture from roughly the 1930s onwards.<sup>56</sup> In 1947, the first dung-law (*meststoffenwet*) was written in the Netherlands, wanting to prevent illegal fertilizer- and pesticide-trade, historically showing a growing need for regulations in an increasingly capital-intensive economic sector. Roughly four decades later, in 1984, the first ever policies (*interimwet*) were written in the Netherlands that aimed for reducing the enormous growth of bio-industrial animal production that dumped its waste in the environment on (or next to) surface waters. Indeed, the idea of animal dung or manure becoming a waste product was a common understanding from the 1970s onwards, ending a conceptual transition of animal excrements from essential to by-product to useless.<sup>57</sup> In 1987, the first environmental protection laws were written that included concerns about and acknowledgement of the problem of fertilizers. The 1980s, as such, mark the first decade within which environmentalist worries about nitrification, acid rain, and related bio-diversity loss, cultural heritage corrosion, as well as tremendous surface-water pollution, and coastal death-zones, were no longer radical alarms but became established concerns. Similarly, the threats of – and warnings about – chemical pesticides and insecticides were not seriously dealt with by the Dutch government until the 1980s, allowing to increase its use for decades after the publication of *Silent Spring*. The 1984 memorandum on crop protection (*nota gewasbescherming*) marked the beginning of limited but acknowledging intervention.<sup>58</sup>

Jan Bieleman's periodization of agricultural history in the Netherlands uses the year 1950 as a rough starting point for farming becoming agri-business. From these years onwards "labour saving technologies" became the goal of innovation, replacing human work with capital-intensive mechanization, intensification, specialisation, and up-scaling.<sup>59</sup> Enabled by the post WWII Marshall fund investments, Dutch agriculture could increase rapidly. In the period between 1950 and 1980, the number of tractors in the Netherlands increased from 18'000 to roughly 150'000, one order of magnitude more.<sup>60</sup> The number of horses in agriculture, in the same period, declined from around 230'000 to several tens of thousands, one order of magnitude fewer. Use of chemical fertilizers increased in this period from 160 million tonnes to roughly 500 million tonnes, showing a steep increase compared to the first half of the 20<sup>th</sup> century.<sup>61</sup> Throughout the second half of the 20<sup>th</sup> century the number of people labouring in the Dutch agricultural sector, for the first time in Dutch history, declined despite

---

<sup>54</sup> H. Zander, *Anthroposophie in Deutschland: Theosophische Weltanschauung und Gesellschaftliche Praxis 1884 – 1945* (Göttingen: Vandenhoeck & Ruprecht, 2007): 1581.

<sup>55</sup> See J. Paull, "The Betteshanger summer school: Missing link between biodynamic agriculture and organic farming," in *Journal of organic systems* 6, nr. 2 (2011): 13 – 26. & J. Paull, "The pioneers of biodynamics in Great Britain: From Anthroposophic farming to organic agriculture (1924 – 1940)," in *Journal of environment protection and sustainable development* 5, nr. 4 (2019): 138 – 145.

<sup>56</sup> H. van Grinsven and M. van Eerdt, "Dertig jaar mestbeleid," in *Bodem* 6 (2020): 20 – 22, 20.

<sup>57</sup> *Ibidem*.

<sup>58</sup> J. (Jan) Bieleman, *Five centuries of farming: A short history of Dutch agriculture 1500 – 2000* (Wageningen: Wageningen academic publishers, 2010): 251.

<sup>59</sup> *Idem*, 240.

<sup>60</sup> J. (Jan) Bieleman, *Five centuries of farming*, 241.

<sup>61</sup> *Idem*, 242.

a growing population, going down from 750'000 farmers and season-workers to only 200'000 at the millennium-switch. That also meant that in 1950, roughly one fifth (19%) of the Dutch working population was a farmer. By the end of the century, that percentage became negligible (2-3%).<sup>62</sup> The socio-economic changes for families on the countryside have been enormous within barely two generations. Most farmers either changed their profession, moved to cities, or emigrated, often leaving behind empty buildings.

Considering landscape-policies and nature conservation, the period of 1950 – 1980 also marks important changes in regulation and perception. The land consolidation act of 1954, important for rural planning policies involved with the infamous scale enlargement of Dutch farms (*ruilverkaveling*), was only re-written in 1985. From that year onwards it included some policy-elements concerned with conserving nature and landscape aesthetics.<sup>63</sup> While throughout most of the 20<sup>th</sup> century governmental nature and landscape conservation could barely be counted on, the Netherlands, instead, knew the influence of conservation organizations like Natuurmonumenten (1905) and the Royal tourism association ANWB (1883). Rather elitist, rich, and sometimes aristocratic figures inhabited such organization, converting the ambition to conserve nature's beauty (*natuurschoon*).<sup>64</sup> Such traditional conservation practices were not generally political or ideologically self-aware. Large pieces of land, often former estates of noble families, were bought for the purpose of conserving their aesthetically pleasing landscape-types. The recreational use of such conservation areas was one of the main goals. After WWII, for reasons of growing ecological insight and the appearing need to also manage habitat-protection in agricultural spaces, nature conservation movements in the Netherlands started to get into conflicts with agriculture.<sup>65</sup> According to the historical analysis of Kristian Mennen, the idea of nature conservation being the natural opponent of agriculture “became entrenched and cemented in the 1950s,” marking the origin of an important myth colouring the later fertilizer dispute.<sup>66</sup> Note that this conflict between conservationists and farmers has its historical origin in a time when environmentalism did not exist, and certainly was not yet a left-wing endeavour.

Ideologically, two different reactions to environmental concern have their historical origin in the period of 1950 – 1980: environmentalism and eco-modernism. Publicly, early environmentalist work like Rachel Carson's *Silent Spring* (1962) can be credited with kick-starting the organising of environmentalist grassroots movements in many places in the world.<sup>67</sup> Yet, as Adam Rome describes for the USA, during the 1960s many civil rights leaders saw environmentalists as a privileged (bourgeois) class defending its own (recreational) interests.<sup>68</sup> Most of the grassroots activists for the environment were “white middle class metropolitan women who saw their activism as a natural extension of their concerns as housewives and mothers.”<sup>69</sup> It was only by the end of the 1960s, as part of a

---

<sup>62</sup> Idem, 251.

<sup>63</sup> Idem, 244.

<sup>64</sup> K. (Kristian) Mennen, “De ‘polder’-strategie van de natuurbeschermingsbeweging in Nederland, 1930 – 1960,” in *Tijdschrift voor geschiedenis* 134, nr. 3 (2021): 425 – 447, 427.

<sup>65</sup> Idem: 428.

<sup>66</sup> K. (Kristian) Mennen, “The history of a communication problem: Conflict between Dutch nature conservation and agriculture,” in *On History* (2021): <https://blog.history.ac.uk/2021/02/the-history-of-a-communication-problem-conflict-between-dutch-nature-conservation-and-agriculture/> (last checked on 15-06-2023).

<sup>67</sup> D.K. Hecht, “Rachel Carson and the rhetoric of revolution,” in *Environmental history* 24, nr. 3 (2019): 561 – 582.

<sup>68</sup> A. (Adam) Rome, “Give earth a chance: The environmental movement and the sixties,” in *The journal of American history* 90, nr. 2 (2003): 525 – 554, 554.

<sup>69</sup> Idem, 538.

wider counter-culture movement sweeping across the Western world and beyond, that environmentalism was incorporated into a radical and left-wing system-criticism. Thus the years around the publication by the Club of Rome (1972) mark the beginning of a public understanding of environmentalist critique as a critique of modernist technocracy.<sup>70</sup> Such radical environmentalists believed to recognize that environmental problems are related to social problems and that the dominant political and economic systems causing pollution, ecocide, poverty, and starvation, were fundamentally incapable of solving those problems.

The ideological dispute between environmentalism and technocracy described by Adam Rome and Maarten Hajer did not last long as a central and public issue of controversy. Roughly from the 1980s onwards, and arguably until today, an eco-modernist approach to environmental concern became more prominent and more determinative in public discourse about the fertilizer dispute, fundamentally changing the content and rhetoric of the related public controversies. Eco-modernism suggested that environmental problems could be solved within the frame or logic of the established “institutional arrangements.”<sup>71</sup> And indeed, from the 1980s onwards highly expensive innovations became acceptable because of, rather than despite environmental concerns. Such technologies together known as ‘precision farming’ became commonplace, decreasing ‘unnecessary’ amounts of fertilizer-use without diminishing its benefits or changing agricultural methods fundamentally, thus providing technological reductionist solutions for fertilizer pollution.<sup>72</sup>

What Hajer describes as a change in political strategy marks the end of my chosen period of history for the analysis in this thesis. In the early 1980s, the environmental movement began to argue and base its rhetoric on the terms “set by the government.”<sup>73</sup> To gain influence or a proper image, to be taken seriously, environmentalism began to speak a language that was considered “realistic, responsible, and professional,” avoiding marginalization as “romanticist dreamers.”<sup>74</sup> In a time when environmental alarm was no longer any news, when worries and criticisms of fertilizer-use were no longer radical, system-critics could no longer “control the definitions of environmental issues.”<sup>75</sup> As such, technocratic modernism had effectively dealt with its opponent. But in the newspapers of the 1960s and 1970s, the ideological fertilizer-dispute between environmentalism and technocracy, was still a spectacle of grand proportions, worthy of analysis. The possibility of change, created by a political will rather than ecological force of nature, was still in the air. And the mechanisms of manipulation and manufacturing consent were thus much more relevant than at a later stage, when a higher ideological awareness of environmentalist values had by and large left public discourse and has been hiding in the murky shadows of anarchist book fairs and academic philosophy departments ever since.

### **1.3. Research idea and setup**

All in all, I hope to have convinced you that it makes sense to look at the period of 1950 – 1980, characterizing this timeframe as a transitioning phase in which agriculture modernized, environmental concerns became part of an ideological awareness, and in which conflicts between nature conservation and agriculture find their origin. The Dutch landscape has never been the same, but also changed greatly in public perception. Especially the 1970s, as we will also see from the news, were a decade of controversy and ideological dispute that, in some

---

<sup>70</sup> M. (Maarten) Hajer, *The politics of environmental discourse*, 102.

<sup>71</sup> *Idem*, 3.

<sup>72</sup> J. (Jan) Bieleman, *Five centuries of farming*, 317.

<sup>73</sup> M. (Maarten) Hajer, *The politics of environmental discourse*, 102.

<sup>74</sup> *Ibidem*.

<sup>75</sup> *Ibidem*.

ways, ended in the 1980s when eco-modernism, as well as governmental intervention and acknowledgement, changed the nature, content, and ideological scope of the rhetorical game.

However, this clash of paradigms between a technocratic and environmentalist way of ‘dealing’ with the problem of ecocide and social injustices related to agriculture is still relevant today. By looking back to a time of more publicly transparent ideological opposition, I hope to challenge the self-evident aura of a currently dominant reductionist technocratic politics, and reveal some mechanisms of manipulation that tend to remain unchallenged in contemporary debates. To challenge the major paradigm of today, I look back at a time when both the science of fertilizers as well as its related politics were much more controversial.

With the help of digital newspaper archives available on the Delpher website (see 1.4), I have analysed the discussion around fertilizer-use in Dutch public discourse from 1950 – 1980. By looking at scientific discussions within public- rather than academic discourse, I hope to gain insight into the mechanisms of ideological manipulation, that use the controversies between scientists to reach other political goals on a wider societal level. These discursive tools, or ‘agnotological devices’ used for the hiding, marginalization, framing, and ignoring of alternative ideological systems, are the main interest of this thesis. In chapter 2 I will discuss a total of seven different agnotological tools or rhetorical strategies for the making of ignorance, providing a conceptual hypothesis for answering the question: What controversies constituted the (dialectical) polarization of – and what agnotological devices of manipulation played a role in – the public fertilizer-dispute as represented and manifested in Dutch newspaper discourse of 1950 – 1980?

Using a form of critical discourse analysis, in chapter 3 I will study ideological patterns of knowledge use and assess to what extent public debates on the matter at hand were indeed ideologically coloured/polarized. Looking into the public debate, and public image of scientists or other experts, around artificial fertilizers, agricultural modernization, and world hunger, I aim to write a history of how knowledge (authority) was used to deal with new worries, warnings or insights that may have been used to challenge existing institutions or established political narratives. This chapter will, in a way, trace the reduction of the fertilizer-dispute into five politically framed parts, studying how these highly interdependent problems or issues were strategically discussed independently. Thus here I ask: What were the main themes, ideas, arguments, and (ideological) positions, in short *presences*, that were subjected to strong controversy, problem reductionism, and related ideological polarization?

In chapter 4 I present the evidence from my sources for the use of seven agnotological tools introduced in chapter 2. Paragraph 2.1. relates to paragraph 4.1., and so on, making it easy to jump back and forth, connecting between the conceptual background, some literature, and my interpretation or deconstruction of ideological manipulation in the news. This chapter is most important for answering my research question, going one step further in the deconstruction of the source material, uncovering *absences* against the background of *presences* represented earlier, aiming to unmask the making of ignorance. Considering my short analysis of framing in the news and its political uses in paragraph 1.1. it will come as no surprise that the agnotological analysis in chapter 4 will mostly, but not only, concern the ideological manipulation by dominant technocratic (modernist) – and, in the case of the Netherlands – capitalist parties.<sup>76</sup>

Perhaps one might ask now: why newspapers? A newspaper can be a mere medium of reporting about a debate and struggle that is in actuality happening elsewhere (i.e. economic, legal and political competition between alternative agricultural practices). Or it can be the arena of conflict itself, a rhetorical tool for public manipulation. For my own research

---

<sup>76</sup> Note that technocratic ideology suits itself just as well to go hand in hand with communism. While I would be happy to write about the manipulation of communism, it happens to be irrelevant for the Dutch context.

purposes it does not matter how much historical influence, meaning the extent to which journalism helps to mobilize groups of people to act or rethink, newspapers actually had. Directly or indirectly, public discourse offers a way of looking into the debates and processes of framing that were also going on at academic conferences, political meetings, corporate meetings, farmers clubs, activist groups, and during dinner-time at quite a few ordinary Dutch family homes. It is the totality of all those (communicative) acts that create ideology. And it is in all those spaces, as well as in laws, businesses, investments, and other socio-economic or cultural activities that rhetorical mechanisms of ideological manipulation were most likely applied just as they were in the news.

Newspapers tell us something about the related activities of unexpected historical actors: minority opinions, people who start uncommon projects, incidental activity of activists or dissidents. Probably only few of those phenomena or voices can be found back in the official documentations and publications of dominant institutions. Newspapers provide an arena of textual debate in which authors or related authorities of different ideological positions may both directly and indirectly clash with each other. As Jon Christensen pointed out, Western journalism tends to attract controversies, highlights them, magnifies them, and only loses interest once the dispute has been settled without a shadow of a doubt.<sup>77</sup> Thus, as marginal as the fertilizer-dispute may have been on a socio-economic level, with more than 99% of all farmers in the Netherlands using fertilizers at the time, and with governmental support for the green revolution, newspapers managed to make it look like a serious battle between equally powerful opponents, bringing into light the smallest details of political and epistemological disagreement. While, as such, newspapers problematically produce an unrealistic image of a democratic process, as I pointed out in paragraph 1.1., it also makes them into ideal historical sources for analysing marginal movements and marginal ideas.

Uncovering ideas in the margin also has a shock-value of realizing what was already known, perhaps actively hidden, and argued for, several generations ago.<sup>78</sup> Such historical awareness is all the more relevant considering how, for example, each (student)generation of activists might be less lenient and willing to compromise if the struggles of the past were more apparent. When young people start to radicalise they rarely feel the frustration, anger, and disappointment of those, like Andreas Malm, who have suffered the games of belittling, and violent political manipulation for much longer.<sup>79</sup> The critical movements of society are not continuously institutionalised and tend to reinvent the wheel often. I would like to learn from the past how to understand and deal with troll armies, merchants of doubt, disinformation factories, lobbying groups, deep fakes, cancel culture, alternative facts, propaganda, advertisements, and commercial news. An age of information is also an age of disinformation. More historical understanding of these phenomena might be relevant in the political struggles still ahead of us.

#### **1.4. Justification and introduction of my sources**

For the selection of my sources I used the Delpher archives and Delpher search engine filters. This collection needed to be inclusive, meaning that after defining clear search criteria I tried to minimize my own political bias by including every relevant text (i.e. related to the fertilizer dispute) found by Delpher. Since including all newspaper articles in the Delpher archive that spoke of fertilizers would have resulted in many thousands of sources, I decided to reduce the scope of my selection to the topics of debate that I am particularly interested in. These are: (1) Are fertilizers necessary to feed the world? & (2) Do fertilizers pollute the environment and

---

<sup>77</sup> J. (Jon) Christensen, "Smoking out objectivity," 272.

<sup>78</sup> G. (Geert) Buelens, *Wat we toen al wisten: De vergeten groene geschiedenis van 1972* (Amsterdam: Querido facta, 2022).

<sup>79</sup> A. (Andreas) Malm, *How to blow up a pipeline* (London: Verso, 2021).

how problematic is that? Entering the words fertilizer (*kunstmest*) AND necessity (*noodzaak*) into the Delpher search engine gave 367 results for the period between 1950 and 1990. Another search, looking for fertilizer (*kunstmest*) AND environment (*milieu*) gave 554 results for the period between 1950 and 1980.

From these two sets of texts, a total of 178 were chosen for my final selection. There were several reasons for discarding the other texts. Some appeared in the Delpher search engine because both words were found somewhere on the page but not in the same article. Regularly, the word ‘fertilizer’ was just listed together with other modern technologies but the article was not about agriculture, food or environmental issues. Many articles could be found several times. For example, one advertisement by N.V.Z. (Dutch society for soap industries) could be found in exactly the same way in more than ten different newspapers.<sup>80</sup> Often, different newspapers reported on the same events in almost identical fashion. In those cases I usually kept the article I had read first into my selection. My final selection of source texts to analyse in more detail is listed in appendix C with titles, authors, referenced names, names of the publishing newspapers, and year of publication. Throughout this thesis, source texts are referenced by their number (#) in the appendix C and year of publication.

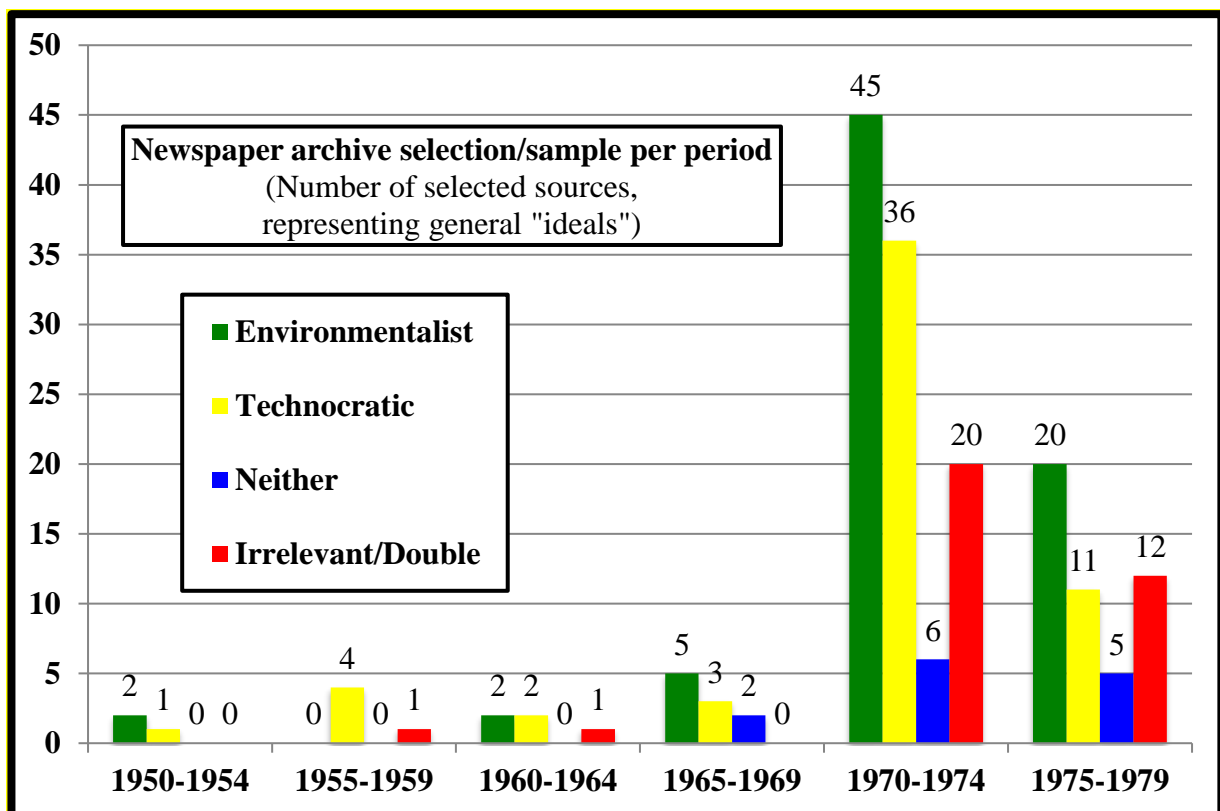


Figure 3: Number of selected sources for periods of five years, representing one or other ‘side’ of the fertilizer-related ideological opposition.

The Delpher database is a digitally accessible and searchable collection of Dutch newspapers from 1618 until 2005. At this point, 1,7 million newspaper additions have been digitalized which is 15% of all newspapers ever published in the Netherlands, according to the Delpher website. A wide range of newspapers, typically read by different social or religious classes or groups, is available in the Delpher database. Both in terms of the sample-size and in terms of the covered diversity then, I believe to get a rather accurate or complete representation of

<sup>80</sup> See #53, 1971 (appendix D).

Dutch newspaper content published between 1950 and 1980. Given that newspapers tend to repeat similar news, arguments, styles and opinions throughout time, mainly publishing the work of the same set of journalists for periods of several years, and often copying the news also published by other newspapers, it is arguably possible to get a good overview of a decade-long public debate on the basis of only a couple of hundred articles. Additionally, some longer articles tend to recall important new developments or insights from the past years or decades. In other words, my historical sources are summarizing themselves. Indeed, after analysing the content of about half of the texts, ideas and several argumentative elements started to become repetitive. That is, every additional article analysed, added only new rhetorical styles but few new ideas. Arguably, that is a good indication of my sample size to be large enough for a good representation of the public fertilizer dispute in the Netherlands at the time.

After reading the selected 178 source articles, I could roughly sort them into four different groups. A total of 34 articles turned out to be irrelevant or double (marked red in figure 3). For the most part, these articles were not related enough to the fertilizer-dispute in particular, despite perhaps discussing similar political and/or scientific issues such as pesticides, egg-searching, deforestation, fish, and other environmental matters. They ended up in my final selection by a combination of containing words like ‘fertilizer’ and ‘necessity’ and looking argumentatively promising. In 9 ‘red’ cases, after more careful digestion, I discovered that the same text had found its way more than once into my sample (i.e. category ‘double’). This is what happens when newspapers lack originality and publish precisely or almost the same reports, advertisements, or essays that were also published by their competition. Rob Wijnberg explains this phenomenon, in part, as a consequence of ‘coat rack thinking’ [haakjesdenken], producing news on the basis of predictable events such as conferences or publications.<sup>81</sup> The repetitiveness of articles in the Delpher database was so common that these few cases had escaped my notice at an earlier stage of research since it was difficult to remember all double cases on the basis of quick content-scans.

The remaining 144 relevant articles were roughly and somewhat simplistically categorized into either of two ‘sides’ of the dialectical opposition of the fertilizer related ideologies, in this thesis referred to as technocracy (yellow in figure 3) and environmentalism (green in figure 3). A total of 13 articles resisted such categorization (blue in figure 3), being totally void of any argumentative content, or eclectically mixing up ideas that would elsewhere be considered incommensurable. Most articles however, were fairly easily recognizable as rhetorical products of their respective ideological frames or related ideals.

With the histogram above, accidentally my favourite kind of gram for a history paper, I hope to show two things. First, my sources are representing a balanced amount of material from both ‘sides’ of the fertilizer dispute. While my selection depended on the archive’s selection, the archive’s filters, and my choice of search criteria, not an entirely neutral process, it was nevertheless a roughly random process, choosing 178 articles out of thousands of possibilities. Therefore, this ‘balanced’ distribution is unlikely to be a statistical accident, supporting the claims by Jon Christensen that the news is greatly attracted to controversy, representing a debate as quasi-fairly as possible.<sup>82</sup> Second, figure 3 also shows the correlation between relevant articles and time. Again considering that this result is not a statistical accident, it is rather noticeable how much more attractive the subject of fertilizers suddenly became by the end of the 1960s, when radical environmentalism as well as more science-based alarmism entered the stage.

---

<sup>81</sup> R. (Rob) Wijnberg, “Voorwoord,” in *Dit was het nieuws niet* (De correspondent, 2018): 14.

<sup>82</sup> J. (Jon) Christensen, “Smoking out objectivity,” 272.





---

## Chapter 2: Agnotological tools

---

*The ailments of the human condition have reached epidemic proportions and history has become ‘the autobiography of a lunatic’<sup>83</sup>*

The idea of ignorance might be associated with a lack of learning or information, limited cognitive abilities, or childlike naivety. Importantly though, what sets ignorance apart from innocence or unfamiliarity is a value-judgement about whether or not one *should* have known.<sup>84</sup> People *should* know about alternatives to make proper political choices, to free of dogmas, to allow for a fair discursive debate between opposing ideologies. Producing ignorance about choice, on a political level, is ideologically manipulative propaganda. It is not deceptive, lacking integrity, to hide something irrelevant. It is deceptive to produce ignorance, to hide what people *should* know in order to make a well-informed political choice, rather than collectively act like a lunatic.

Robert Proctor, one of the inventors of the agnotology concept, mentions several types of ignorance or not-knowing. Among them are the meta-unknown (not knowing that we do not know), unwanted knowledge, accidental knowledge, taboos, and geographically (or otherwise non-randomly) distributed knowledge. Notice that not all types of not-knowing are ignorant or unwanted. Some things perhaps are best not to know, or not important to know. However, the aim or point of agnotology, as Proctor proclaims, is to question the “naturalness of ignorance, its causes and its distribution.”<sup>85</sup> As agnotologists, one must question, who or what decided it would be best if people do not know, and why? In this thesis, my focus is on the how. How is ignorance produced? The goal of this chapter is to work out the argumentative and conceptual framework(s) used to identify and analyse the tools for political manipulation in my sources, interpret my results, and relate my work to existing ideas, forming an hypothesis for chapter 4. Can we gather a toolbox for the production of subtle propaganda?

Together with Londa Schiebinger, Proctor lists some mechanisms that, in part unintentionally, explain *how* ignorance is produced. These include “deliberate or inadvertent neglect, secrecy and suppression, document destruction, unquestioned tradition, and myriad forms of inherent (or avoidable) culturopolitical selectivity.”<sup>86</sup> As introduced in chapter 1, it is mostly this notion of selectivity that I want to highlight as a common denominator of all agnotological tools identified here. Something is publicly shared, as such gaining presence, while something else is not, hiding in absence. Therefore, my analysis of discourse is not fundamentally linguistic but fairly content-oriented. While I do point out concepts, *topoi* of an idealized ideology or rule-of-thumb indicators, signs to look for possible sites of manipulation, it is not through linguistic trickery, or nuances in language-use, that ideological selectivity is sensibly studied. Such linguistic trickery presupposes intention of a crafty author. But ideological selectivity is systematic, and (thus) reflective of a political logic

---

<sup>83</sup> See M. (Monica) Partridge, *Alexander Herzen (1812 – 1870): Prominent figures of Slav culture* (Paris: Presses universitaires de France, 1984): 45.

<sup>84</sup> See Mignon McLaughlin, referenced without title by R.N. (Robert) Proctor, “Agnotology: A missing term to describe the cultural production of ignorance (and its study),” in R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008): 1 – 33.

<sup>85</sup> R. (Robert) Proctor, “Agnotology: A missing term,” 3.

<sup>86</sup> In foreword by R.N. (Robert) Proctor and L. (Londa) Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008), vii.

beyond the boundaries of discourse. That is, the ideological selection of content is not only a rhetorical trick, it is also physically performed, turning ignorance into violence.

Firstly, those claiming superiority produce ignorance by selectively leaving out information about limits, impossibilities, or inabilities (see 2.1). Indeed, this is a rhetorical method of manipulation. But it also reflects a political system that is in fact trying to force its knowledge and technologies onto the world, as such producing failures and incompetence. Secondly, those claiming to act philanthropically, in the name of doing good, selectively hide other intentions and banal (structural) dependencies produced by charity, and other power relations (see 2.2). While rhetorically deceptive, sheep-like delusions of doing the right thing also motivate massively violent oppression known as evil banality. Thirdly, selectively hiding local diversity or circumstances and alternative narratives behind the logic of rationalization, standardization, and global narratives of necessity, may nicely convince a newspaper reader, but simultaneously produces oppression of diversity since such a political system does not know how to deal with difference (see 2.3). Fourthly, by selectively leaving out economic and political interests, hiding behind (academic) authority and facts, the media can manipulate anyone who is attracted to the idea of ‘rational’ innovation. But at the same time, such ignorance produces the opportunity for self-enrichment, corruption, and growing socio-economic inequality (see 2.4). Fifthly, producing ignorance by hiding urgency behind scepticism, shifting the burden of proof to those without power, can rhetorically produce doubt and uncertainty, selectively choosing what evidence counts as convincing, but also enables ongoing destruction of nature (see 2.5). Sixthly, selectively choosing what counts as true, hiding other well-established scientific insights behind fake logic, wrongful accusations or stereotypical misrepresentations, manipulatively produces polarization, but also enables violent arbitrary policies and behaviour that need not justify itself (see 2.6). And last but not least, selectively producing frames of what counts as normal, stigmatizing other perspectives, is rhetorically manipulative but also signifies a (political) culture that oppresses any desires or attempts to think outside the box or act beyond the ordinary (see 2.7).

Note, what might be confusing is my double usage of ‘tool’. Am I using these tools for a discursive deconstruction of ideological selectivity? Or are agnotological tools ‘used’ by historical actors to produce ignorance? Throughout this thesis I usually refer to the latter. However, by identifying these agnotological mechanisms, I have also tried to clarify a method or ‘tool’ for the former. The idea of a tool is that it is used or applied, indicating the possibility of intention. However, as it is with other weapons, tools can also be used unintentionally, harming the innocent, or even harming yourself, hitting your thumb instead of the nail. Swinging the hammer however, was a choice nonetheless. As a toolbox, these seven categories may seem to come out of thin air, thrown together rather randomly. And it is true that I have gathered these ideas from several different authors, looking for ways other scholars have analysed the making of ignorance. This list does not attempt to be complete, or logically ordered. Perhaps other such ‘tools’ could be added. But as it stands, this chapter provides me with a method to identify and analyse agnotological strategies (if intentional) or mechanisms, as well as an hypothesis for how ignorance is produced in the media. This theoretical preparation work might be extended and/or reviewed in later research.

### **2.1. Embracing the lunacy**

In this thesis, studying the hiding of delusions, apathy, possibilities or limits thereof behind an idea of superiority, it is mostly relevant to look at the promise of future technology and technological progress. Arguably, not all political lunacy is the result of insane ideological biases. Many things go wrong because of laziness, lacking imagination, miscommunication, missing information, unnoticed fallacious logic, and a whole range of cognitive biases. But as the historian Tom Phillips argued, one of the most dangerous biases behind many of the

ferociously incompetent human endeavours, might be confidence and optimism.<sup>87</sup> Such optimism can also be produced by an ideology holding that anything can be fixed with superior technology.

To study a widespread ignorance of – and disinterest for – what is going on in the world, a structurally lacking ability to imagine alternative rationality, and a structurally lacking ability to reflect on the basic assumptions of one’s own narrative rather than to doubt or ignore the evidence of something contrary to it, is to embrace the lunacy of the past. Rather than explaining people’s delusions through a meta-cultural/political analysis of manipulation in the interest of postcolonial or capitalist investors or beneficiaries, it might be necessary, when the sources warrant it, to accept that many decisions of knowledge authorities have often been taken without fully understanding the reasons nor the consequences. Optimism provides the justification for (just) trying massive use of fertilizers, and find out later how to deal with environmental pollution.

Humanity turns out to be consistently bad at preventing self-inflicted disasters. In *Humans: A brief history of how we fucked it all up*, Phillips argues that in hindsight it is easy to be blinded by success and convince yourself that all of it was intended, whether evil or not. However, narratives of adventurous heroism, progress, and technological promise, tended to attract entrepreneurs who “threw themselves into the imperial project” despite basically being “idiots.”<sup>88</sup> Historian Larry Stewart traces such confused opportunism back to the eighteenth century, in which “the public mind was to be mesmerized” by the promise of superior technology.<sup>89</sup> And there, we see how the violence of opportunism also becomes a rhetorical tool for ideological manipulation of a public debate. Delusions of human ingenuity hides incompetence behind success and downplays the huge difference in difficulty between for example destructive innovation of soil-exploitation and an ecology-minded approach to farming. What counts as superior technology, a huge machine full of chemicals or an holistic understanding of local farming circumstances build up over generations of experience and crop-selection, seems to be highly subjective and ideologically normative.

The green revolution can also be understood in these terms. While the green revolution was of course an imperial project justified as a narrative for spreading superior Western farming technology, it was also, as historian Saha Madhumita pointed out, “the world’s largest fertilizer demonstration program.”<sup>90</sup> In many places it took decades for agricultural modernization to actually start increasing local yields.<sup>91</sup> The experiment was arguably largely driven by the opportunism of Western innovators, corporations and investors.<sup>92</sup> Lunatics who barely understood the complexity of agriculture, who’s actions were justified in Dutch newspapers as bringers of progress to a primitive people.

## **2.2. Ignorance and the banality of evil**

Philanthropic delusions of doing the right thing while in actuality doing something terrible, can easily be setup for (rhetorical) manipulation. It reminds of Hannah Arendt’s *Eichmann in*

---

<sup>87</sup> T. (Tom) Phillips, *Humans: A brief history of how we fucked it all up* (London: Wildfire, 2018), 31.

<sup>88</sup> Idem, 180.

<sup>89</sup> L. (Larry) Stewart, *The rise of public science: Rhetoric, technology, and natural philosophy in Newtonian Britain, 1660 – 1750* (Cambridge: Cambridge university press, 1992), xviii.

<sup>90</sup> S. (Saha) Madhumita, “The State, Scientists, and Staple Crops: Agricultural ‘Modernization’ in Pre-Green Revolution India.” *Agricultural History* 87, no. 2 (2013): 201 – 223, 209.

<sup>91</sup> See V. (Vandana) Shiva, *The violence of the green revolution* (Mapusa: The other India press, 1991).

<sup>92</sup> S. (Saha) Madhumita, “The State, Scientists, and Staple Crops,” 220.

*Jerusalem*, and her concept of the banality of evil.<sup>93</sup> However, a collective as well as individual failure to prevent genocides and destruction is not a form of innocence. Arendt also did not argue in favour of acquitting Eichmann. Contemporary German culture of collective post-holocaust reflection can attest to that. *Wir haben es nicht gewusst* is somehow not a satisfying excuse for the most tremendous horrors of human history. Whether we look at climate change, environmental pollution, and ecocide, or slavery, genocide, and witch-hunts, there is always only a small percentage of people who physically commit monstrosities. The rest of society is just going along, looking at it, like a bunch of sheep, seemingly incapable of self-reflection but more likely just scared, unimaginative, brainwashed or truly clueless.

It is not my goal to understand what goes on in the mind of a murderer who gets paid by a fascist regime. Although Arendt's concept of banality can be applied to both the individual and the collective, I am more interested in the latter. On the collective level, ignorance becomes more realistic, denial becomes a credible option. It is the reason we produce newspapers. The world is an anonymous place and when a nation goes to war or a company destroys a village to dig coal, the large majority of people does not personally experience or see the destruction or violence. Our emotional response, a great source of sympathy and solidarity, is either absent or artificially created and therefore prone to censorship since both our knowledge- and experience of what is going on in the world depends on external sources of information. In this thesis I look for the way ignorance and delusion go hand in hand, in a mutually supportive relationship.

Associated with the banality concept is the acceptance of dependencies, justifying the violence of a technology or form of behaviour either by pointing fingers at others (1), saying they are also doing it, or claiming it to be the only reasonable option unless you accept a lower quality of life yourself (2). Two types of apologetic justification of violence that are fashionably described as sheep-like, despite the notoriously unviolent nature of sheep. The irony of sheep-like delusions is often quite dark-humoured. Producing ignorance of terrifying genocide is not uncommon, trying to hide any evidence, or scapegoating the victims. Perhaps in some ways the agnotological kind of philanthropy (as tool) is most evil. Enslaving, mutilating, and building regimes of terror, throughout history, have sometimes been justified as charity projects, bringing 'civilization' to poor people, selectively hiding real intentions of making huge profits and gaining access to resources or political benefits.<sup>94</sup>

### **2.3. Universality and false oppositions**

A third tool for producing ignorance about innovation is its incorporation into global narratives. This happens through the standardization of methods in combination with claiming their necessary application. For many critics of technocracy, the generalization of techniques or 'instrumental reason' is an important argument. Such universal rationalization is only possible by ignoring contextual details and local variety, reducing complexity to simplistic abstraction, then used for pretending to provide an objective measure of efficiency or something else.<sup>95</sup> To think that one technological logic, one method of doing agriculture, can be applied roughly everywhere with similar returns, produces biases of alternative technologies as primitive (i.e. of lower scientific understanding), or insufficient, relating to ideas of superiority (see 2.1). On top of that, by ideologically placing the global or universal as sovereign over the local, global narratives can also become prescriptive in fully

---

<sup>93</sup> H. (Hannah) Arendt, *Eichmann in Jerusalem: A report on the banality of evil* (New York: Viking Press, 1963).

<sup>94</sup> T. (Tom) Phillips, *Humans: A brief history*, 179.

<sup>95</sup> S. Knepper, "Gabriel Marcel: Mystery in an age of Problems," in *Critics of Enlightenment Rationalism*, edited by G. Callahan and K.B. McIntyre (Cham: Palgrave Macmillan, 2020): 125 – 137, 126. Also referencing T. Adorno and M. Horkheimer.

unwarranted situations, becoming a naïve type of rule-consequentialism. What is claimed to be necessary in general then also becomes necessary in the particular.

The rhetorical use of universal argument is often recognizable by its lacking comparison. There is no need to discuss the advantages and disadvantages of different technologies within different contexts, if standardized modernization, based on fertilizers, is the only actual option anyway. In those cases where the comparison is made, it tends to turn into straw-man-like false oppositions between the only real option on the one hand, and terrible, unimaginable disaster or impossibility on the other. Perhaps the Cold War is the most well-known example of a narrative that produced false opposition on an ideological level. Naomi Oreskes and Erik Conway note, for example, that one common idea among climate change deniers revolves around the accusation or worry of an environmentalist desire to replace capitalism by communism.<sup>96</sup> In chapter 4 I present one example of this phenomenon from Dutch newspaper discourse of the 1970s. False dilemmas automatically put critics into boxes, producing ignorance about a much more diverse field of ideological options. In addition, such polarized thinking also masks important commonalities of what are perceived as total opposites. Critics of technocracy or modernity, among them Herbert Marcuse, Ivan Illich, or Gabriel Marcel, found ways to not only criticise both communism and capitalism, but to criticism them on the same grounds.<sup>97</sup> That does not mean that dialectical struggle is itself necessarily manipulative as a way of simplifying debates to dichotomous oppositions. But it does mean that ideologies are easily used as – or reduced to – straw men or scapegoats. Political complexity can be ignored whenever the enemy has a name, turning whatever course of action is prescribed by the dominant ideology into an unnuanced unavoidable unchallengeable necessity.

To show that such agnotological tools are not only rhetorical tricks of manipulation but reflective of actual political mechanisms, the work of Saha Madhumita is again of interest. She shows evidence that the green revolution was in part motivated from the start to prevent India and other countries from becoming communist.<sup>98</sup> Besides such ideological motivation, India suffered from terrible waves of malnourishment and starvation during the 1950s, creating amazing opportunities for ‘philanthropy’ (see 2.2) and spreading superior agricultural knowledge and technology (see 2.1). But what could easily go unnoticed in global narratives of ‘necessary’ help in the war against hunger, of ‘universally superior’ scientific knowledge, and of the Western struggle against communism, was that firstly, those famines were not (only) the result of population pressure and ‘primitive’ farming. A “callous colonial administration” had left the new national government of India with a terrible inheritance.<sup>99</sup> Food security was thus not only a technical but also a political and bureaucratic question, taking a little time to re-organize. Secondly, Western industrial agriculture had not been adapted to the complexities of tropical agriculture, i.e. local circumstances.<sup>100</sup> And thirdly, a false choice between indigenous agricultural knowledge and a Western modernization paradigm, left many observers ignorant of the possibility to *scientifically* develop locally adapted agricultural methods that could increase yields as well as offer a strengthening of

---

<sup>96</sup>N. (Naomi) Oreskes and E.M. (Erik) Conway, “Challenging knowledge: How climate science became a victim of the cold war,” in R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008): 55 – 89, 77.

<sup>97</sup> See I. (Ivan) Illich and S. Samuel (ed), *Beyond economics and ecology: The radical thought of Ivan Illich* (London: Marion Boyars, 2015) & S. Knepper, “Gabriel Marcel: Mystery in an age of Problems,” 128.

<sup>98</sup> S. (Saha) Madhumita, “The State, Scientists, and Staple Crops,” 201.

<sup>99</sup> *Ibidem*.

<sup>100</sup> S. (Saha) Madhumita, “The State, Scientists, and Staple Crops,” 207.

socio-economic rural circumstances.<sup>101</sup> In summary, all over the place, an understanding of the fertilizer debate as well as political developments of the green revolution, was reduced to simplistic oppositions, producing ignorance of local circumstances, and alternative political options.

As such, it deserves mentioning, global narratives and standardization also marginalizes the knowledge of indigenous peoples, whose locally adapted agricultural wisdom is dismissed, ignored or misunderstood. That would bring us to the theme of paragraph 2.4. Moreover, notice that, upscaling, fertilizers, monoculture, standardized animal feed, and standardized crop seeds also ‘accidentally’ happen to be an important condition for efficient administration, measurements and statistical comparisons between regions, taxation, and international corporate control.<sup>102</sup> Universal narratives align themselves well with centralized authority and a technocratic desire for quantifying the products of society.

#### **2.4. Science and the normativity of facts**

While science has warned humanity for climate change and environmental pollution, others have warned humanity for science. Mary Shelley’s *Frankenstein or the modern Prometheus* (1818) is perhaps the most famous example of an early sense of uneasiness connected to modern science, in her mind “the most dangerous of all human arts.”<sup>103</sup> Historians of science Peter Bowler and Iwan Morus describe the rationalist program of modern science as “a progressive struggle to drive back the boundaries of ignorance and superstition.”<sup>104</sup> It is quite ironic to find that science can also be used to produce ignorance, its epistemological authority in matters of fact being difficult to undermine.

Arguably, much science is not a disinterested, value-free, politically neutral search for knowledge and development of technology. Scientific institutions – whether universities, corporate laboratories, consultancy firms, or research facilities of governmental organizations including the military – tend to be more goal oriented than generally admitted, serving the interests of industrial society and a technocratic need for innovation. If it would be a better political option, let’s say, to degrow, to work on social, local, and vernacular solutions for ecological problems and socio-economic injustices, then the community of natural scientists would have much less useful work to do, even without subscribing to luddism. But no institution is likely to restrict itself. As Larry Stewart noted, with science becoming entangled with industrial society, its own legitimacy had become “contingent on its utility.”<sup>105</sup> And a global narrative of progress easily hides how innovation does not necessarily benefit everyone. As such, science is not politically neutral. But its claim to be politically neutral is what makes it a manipulative tool for the (ideological) production of ignorance.

Isabelle Stengers deconstructs this superficial argument for a science that cannot be held accountable for how technology is used. She points out how innovation programmes are celebrated because of its supposed role for social progress, explicitly associating science with its societal potential. But when turning that upside down, the irresponsible use of science, like the destructive consequences of fertilizers, cannot be blamed on those inventing fertilizers or those using scientific authority to gain support for its application. That is all politics. For

---

<sup>101</sup> Idem, 211.

<sup>102</sup> See J.C. (James) Scott, *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia* (New Haven: Yale University Press, 2009).

<sup>103</sup> Referenced by B. (Benjamin) Labatut, *When we cease to understand the world* (London: Pushkin press, 2020): 18. Also see, Mary Wollstonecraft Shelley, *Frankenstein, or, the Modern Prometheus: The 1818 Text* (Oxford: Oxford University Press, 2018), edited by Nick Groom.

<sup>104</sup> P.J. (Peter) Bowler and I.R. Morus, *Making modern science: A historical survey* (Chicago: The university of Chicago press, 2020).

<sup>105</sup> L. (Larry) Stewart, *The rise of public science*, xix.

Stengers, framing anyone opposing scientific progress as primitive (see 2.1), or framing science as a way to offer rational solutions of universal application (see 2.3), acting innocent and neutral while justifying technocratic modernization as “authorized by rationality,” are all examples of what happens when science and values are considered separated.<sup>106</sup>

Ignorance is produced in those situations where science is presented as a normative authority in support of specific technological ‘solutions’ as the only (necessary) option. Alternative perspectives on how to innovate, not to be confused with alternative facts, are being marginalized, cherry-picking the facts in favour of some ideology, and downplaying or ignoring the authority of other sources of knowledge such as indigenous farmers. By separating questions of societal development from questions of agricultural technology, the green revolution failed to work with potential alternative scientific innovation. As Saha Madhumita pointed out, a focus on capital-intensive methods, designed for well-irrigated fertile land, “jeopardized the goal of social equality.”<sup>107</sup> As such, choosing what technologies are innovated further, has socio-economic and political consequences.

In the time-period relevant for this thesis, the terrors of WWII had raised questions about the notion of progress, and the fear of nuclear weapons ensured that a holy belief in the rationality of technological advancement would not easily return. But the foundation of science as a disinterested quest for knowledge, the application of which just happened to be useful, whether for good or for evil, remained a firmly established conviction.<sup>108</sup> A Marxist criticism of science had lost its appeal in a Cold War context.<sup>109</sup>

## 2.5. The merchants of doubt

In paragraph 2.3 the rhetorical method of hiding comparisons was introduced as a form of producing ignorance. Lack of comparison in the form of cherry-picking facts was also thematised in paragraph 2.4. Perhaps at first oddly then, the opposite: too much comparison, could also be considered a type of agnotological tool. The former is used to defend an ideology, protect it by making it seem unchallenged. The latter, in the form of organized scepticism, attacks an opposing ideology, cunningly shifting the burden of proof to the critics of a dominating politics (Popperian dilemma or *Ad Ignorantiam*), holding those critics to an unreasonable standard of certainty, producing doubt as a means to postpone judgement, turning society eternally agnostic.

Proctor characterizes ignorance as a “strategic ploy,” based on the ancient principle of ‘divide and conquer’ or “we rule you if we can fool you.”<sup>110</sup> In this fashion, science is used against itself. The virtue of scepticism is used to maintain a controversy, preventing intervention or regulation by calling for more research or more data, in short, more certainty. More knowledge becomes the noise needed to maintain the debate, discursive ghosts upholding a *lullepotocracy*.<sup>111</sup> What the merchants of doubt, a concept coined by Oreskes and Conway, do, is playing on the political weakness of scientific or academic institutions (see

---

<sup>106</sup> I. (Isabelle) Stengers, *Another science is possible: A manifesto for slow science* (Cambridge: Polity press, 2018), translated by Stephen Muecke, page 119 and 149.

<sup>107</sup> S. (Saha) Madhumita, “The State, Scientists, and Staple Crops,” 212.

<sup>108</sup> Somewhere in the 2011 new introduction by S. (Steven) Shapin and S. (Simon) Shaffer, *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life* (Princeton: Princeton university press, 2011), originally published in 1985.

<sup>109</sup> P.J. (Peter) Bowler and I.R. Morus, *Making modern science*.

<sup>110</sup> R. (Robert) Proctor, “Agnotology: A missing term,” 11.

<sup>111</sup> A concept invented by Robert-Jan Wille (first examiner of this thesis). A *lullepot* is a person who – or a text that – talks lots of nonsense. In authoritarian form, that would become *lullepotocratic*.

2.4).<sup>112</sup> Self-declared ‘disinterested’ climate scientists and conservation ecologists struggle against an ever-growing demand for more evidence, that keeps them at bay, sparing no effort to keep gathering data for the support of a conclusion that is barely scientifically controversial. Such ‘red-herring science’ distracts from the realization that many given questions of environmental concern, at some point in history, have likely already come across the point when the debate had to become political rather than scientific.

What evidence counts as convincing and how much evidence is enough to warrant action, is decided in a highly selective and manipulative process, including practices like green-washing. Calling for more data is a rhetorical device for ignoring serious warnings as well as alternatives, producing the asymmetric idea that, for example, agricultural methods most commonly practised (already) are based on more scientific understanding than criticism of it or alternative methods. Such (implicit) comparisons are of course manipulative, hiding how extraordinary normal it is for human beings as well as innovators and governments to act despite uncertain outcomes (see 2.1).

Isabelle Stengers argues that the political strategy of the merchants of doubt depends on forgetting that “if an incontestable certitude does arise, it will not have had a scientific origin.” Rather, reality itself will “stage the demonstration.”<sup>113</sup> Postponing a serious societal reaction to the threats of ecocide and climate change is ultimately in the interests of a technocratic ideology. Once it is too late to prevent consequences like mass migration, hunger, highly frequent epidemics, and coastal floodings, on a larger scale, it will be necessary to depend on even more technology, needed to survive or terraform. A violent gamble, leaving many victims along the road.

## 2.6. Media and alternative facts

Talking to people about this thesis, the number one first reaction is something like: “So you are writing about fake news?” (Ideological) manipulation by news media is commonly associated with the simplest form of producing ignorance: lying, faking, stereotyping, misrepresenting, or adhering to logical fallacies. Robert Proctor reminds us of a simple, and perhaps obvious truth: An age of information has a much higher potential for dis-information than an age of ignorance. In 1991, media analyst Sut Jhally discovered that “people were misinformed about the Gulf War in direct proportion to how much TV they watched on the topic.”<sup>114</sup> If you do not even try to inform yourself, you can also not make the mistake of misinforming yourself. It is one of the reasons for Rolf Dobelli to advise against the consumption of daily news.<sup>115</sup> I advise the same. Hannah Arendt warned that people who no longer have the means to separate between fact and fiction, or, even worse, come to believe that there is no distinction, are the most easily oppressed by a totalitarian regime.<sup>116</sup>

Jon Christensen noted how epistemological values central to journalism such as objectivity, fairness, balance and facts make journalism vulnerable to participation in the cultural production of ignorance.<sup>117</sup> Empty claims of objectivity have a way of de-contextualizing information and relying on external epistemological authorities, serving the

---

<sup>112</sup> N. (Naomi) Oreskes and E.M. (Erik) Conway, *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming* (London: Bloomsbury, 2011).

<sup>113</sup> I. (Isabelle) Stengers, *Another science is possible*, 20.

<sup>114</sup> R. (Robert) Proctor, “Agnotology: A missing term,” 6.

<sup>115</sup> R. (Rolf) Dobelli, *Die kunst des klugen handelns* (München: Piper Verlag, 2019): 210.

<sup>116</sup> H. (Hannah) Arendt, H, *The Origins of Totalitarianism* (New York: Harcourt Brace Jovanovich, 1973).

<sup>117</sup> J. (Jon) Christensen, “Smoking out objectivity: Journalistic gears in the agnotology machine,” in R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008): 266 – 282, 267.



perspective of a dominant ideology. Though journalism tends to be attracted to what is new and controversial, always needing to portray several sides of the debate ‘neutrally’ ensures that the merchants of doubt can publish their manipulations.<sup>118</sup> Oreskes and Conway make a similar observation for the production of daily news reports, i.e. editing a large variety of contributions in daily newspapers or other media productions like television. They state that in this process there is not enough time and expertise to separate factual information from ‘alternative facts’ (i.e. lies and misrepresentations) produced by “the network of right-wing foundations, think tanks, and the corporations that fund them.”<sup>119</sup>

The media have been criticized for their role in spreading lies since about the invention of censure and propaganda. George Orwell, referenced by Oreskes and Conway, coined some concepts to understand the mechanisms that allow for brainwashing an entire nation. Inconveniences are thrown into ‘memory holes,’ and ‘newsspeak is a politically correct language with build-in boundaries of what can be reasonably said or claimed, producing stigmas and taboos.’<sup>120</sup> That brings us to the last type of agnotological manipulation discussed in this thesis.

## **2.7. Stigmatization or framing the normal**

Nowadays, as activists, what we hear when criticising powerful institutions like universities or corporations is: oh yes, what you say is super important and we actually agree with each other. No need to worry! Everyone already cares about sustainability and bio-diversity and is working hard to realize a better future. Look at any website of international agricultural corporations and one of the first images or claims you will find is related to environmental concerns and the positive impact such pesticide and fertilizer giants are trying to make. Ideological struggle is hidden behind incommensurable language, mimicking strategies designed to stigmatize radicals and convince anyone with worries that everything is fine.

Stigmatizing critics, calling them names, and copying their language, framing environmental worries or other criticism as part of a normal, established practice, works manipulatively by producing ignorance about ideological opposition. The contrast between what is normal and what is radical or taboo, is fading away in a discursive landscape full of mirrors. The newspaper reader can see themselves in everything, agree with everything. Politically, nothing is more dissatisfying.

One important element in this type of making ignorance is time. Dutch landscapes, for example, changed greatly over the course of a few generations. What people today consider to be beautifully diverse nature, was below average in the past. Such shifts in perception are problematic for it makes it that much harder to experience and believe the slow but steady process of loss and destruction. That does not mean that values of aesthetics cannot change, but bio-diversity loss is not a subjective measure. Decline in overall abundance, activity, and variety of biological organisms in the Netherlands is measurable. But when people’s ideas of what is normal adapt to the circumstances, they can continue to destroy without experiencing loss.

---

<sup>118</sup> Idem, 270.

<sup>119</sup> N. (Naomi) Oreskes and E.M. (Erik) Conway, *Merchants of doubt*, 7.

<sup>120</sup> Idem, 236.



---

## Chapter 3: Mapping controversies

---

*An allem Unfug, der passiert, sind nicht etwa nur die schuld, die ihn tun, sondern auch die, die ihn nicht verhindern, erklärte der Professor Kreuzkamm. Diesen Satz schreibt jeder bis zur nächsten Stunde fünfmal auf.*<sup>121</sup>

In this chapter the aim is to provide historical evidence for the content, (dialectical) polarization and reductionism of the fertilizer dispute in the first post-WWII decades. Tomasso Venturini's guidelines for mapping controversies provide some conceptual tools for structuring and understanding my analysis.<sup>122</sup> In mapping fertilizer controversies I am asking what were the related themes, ideas, arguments, (ideological) positions, actors, networks, concepts, claims, and beliefs, in short: *presences* in Dutch newspapers.

Venturini argues that controversies themselves are reduction-resistant since in disputes, by definition, "old simplifications are rejected and new simplifications are still to be accepted or imposed (Venturini, 2010: 262)."<sup>123</sup> What societal issues were considered related and interdependent changes depending on the ideological perspective. However, somewhat disagreeing with Venturini, as I argued in chapter 1, the environmentalist alternative and its criticisms of technocracy, was a revolutionary attempt to uncover the need for seeing societal problems as related, like the elements of an ecological system. Replacing modern farming with bio-farming was not a way of replacing one way of simplifying with another. Rather, it was a way of replacing a simplification with an embracement of ecological complexity. To say that every ideology is ultimately a simplification seems pleonastic. But from there I am not forced to choose absolute relativism.

My mapping of the fertilizer dispute must be a reflection of the complexity of the debate, its changing content and relations, the large variety of positions, as well as an attempt to find structures and categories within that "thick mesh," represented in newspaper discourse.<sup>124</sup> For that purpose I will go through various steps of looking for potential non-random patterns, *presences*, and selections made by the historical actors themselves. While acknowledging the discursive complexity, I attempt to show how a dominant technocratic ideology reduced the fertilizer dispute into five major different controversies, as it turns out. Such reductionism is interesting for my agnotological interpretation for it allowed for ideological manipulation without fair comparisons, while environmentalist radical logic tried to bring those five overarching issues together into an ideological criticism of the dominant cosmopolitical system as a whole.

In paragraph 3.1 an overview is given of most actors that participated in the arena of my sources. These include people, materials, landscapes, organizations, concepts and other life-forms, and the overview gives a less pre-structured idea of the many connections, made or unmade by the fertilizer dispute, between various societal entities. In 3.2, using some quantitative analysis of my sources, I will argue that several families of ideas or "articulated literatures" can be induced from the large variety of themes and ideas that circulated within

---

<sup>121</sup> E. (Erich) Kästner, *Das fliegende Klassenzimmer* (Copenhagen: Easy Readers, 2015): 71. Originally published in 1933.

<sup>122</sup> T. (Tomasso) Venturini, "Diving in magma: How to explore controversies with actor-network theory," in *Public understanding of science* 19, nr. 3 (2010): 258 – 273.

<sup>123</sup> Idem, 262.

<sup>124</sup> Idem, 266. That might be an implicit reference to the method of 'thick description' pioneered by Clifford Geertz.

the discursive debate.<sup>125</sup> The notion of finding *literatures* references an attempt to find writings, articles, interviews, letters, reports, book reviews, and other texts that fit into similar thematic genres, i.e. they have subjects, styles and arguments in common. Consequently, it won't (just) be me, the historian, imposing reductionist categories after writing a complete summary of all sources. Rather, the many authors of those sources, co-produced the selectivity and categorization of the debate, by offering their own choice of content. I will clarify this method more in section 3.2 itself. Note that this is no attempt at avoiding responsibility for my own subjective mapping of the fertilizer controversies, but it is a justification for its accuracy.

In the last paragraphs of this chapter, the contents of those *literatures* is represented as three independent debates. Here the aim is to get as sharp as possible on which issues the fertilizer dispute was ideologically polarized, what was already known at the time, and what motivated its participants. These steps make for a smooth argumentative transition to chapter 4 about agnotological devices of manipulation, a way of framing or interpreting history that begs the question: manipulated to believe what? Against that background of *presences*, we can zoom in closer to what was attempted to be hidden.

In short, in this chapter I aim to sketch an image of what people would have found and potentially believed when reading Dutch newspapers about fertilizers, putting myself in their shoes (1); get an idea of the messiness, the complex, constantly changing content-matter of a public dispute that, if I wanted to fully incorporate all discursive aspects of it, would be far beyond the scope of a master thesis (2); get a good sense of what controversies were particularly oppositional (i.e. controversial) and ideologically polarized, to make sure the research question of this thesis is actually relevant (3).

### **3.1. Actor-networks: Tying and untying connections**

The raspberry map (see page 46)<sup>126</sup> is my attempt to represent the actors or *presences* from my sources in such a way as to reduce any categorization to a bare minimum. By making all the circles touch and overlap each other, I hope to represent how so many of these 163 actors were connected into one whole network that consisted of several smaller ones (see figure 5). Controversies are not evidently visible here, let alone polarization. This is how one might imagine the messy struggle of societal controversy. Every combination of opinions is possible, and every alliance. Without the debate about fertilizers, it seems questionable whether 'laundry detergent,' 'sport fishers,' and 'vitamine B12' would ever have participated in the same eco-political dispute.

To wonder what it was like to read newspapers in the 1970s and learn about all these new connections, one had never made before, is my first step of trying to understand ideological manipulation. While further historical analysis will bring more structure, clarity and understanding of how all these actors and concepts were connected, mapping fertilizer controversies in the raspberry map is a way of acknowledging, imagining and representing the complex mess of ideological struggle, that conditions the (cartographed) space within which agnotological devices can be utilised. In other words, complexity, just like simplicity, is a way of hiding or producing ignorance about important interdependencies. That is here experienced by looking at the raspberry. Whether one only sees individual trees, or only a forest as a whole, in neither case will you ever notice the *presence* of different tree-species.

---

<sup>125</sup> Ibidem.

<sup>126</sup> I have allowed myself the freedom to coin a new term based on the colourful berry-like looks of this actor-network map.



Figure 4: Global south farmers who remain anonymous in the news. On the left: “Rise-harvest on Celebos,” shown in *De Volkskrant* (#40, 1970). On the right: A farmer using ‘primitive tools,’ shown in *De Volkskrant* (#129, 1974).

At a second look, the raspberry map might provide more hints of opposing developments and power dynamics than expected: ‘Primitive’ farmers (see figure 4) remained unnamed while both alternative and conventional farmers were represented by people; User manuals marked a separation between traditional and modern tools or materials; Rhetoric of calling people ‘false’ prophets, alarmists, superstitious, or environmental mafia, was quite present; A whole battery of professors apparently had opinions about matters that various farmers also felt strongly enough about to end up in newspapers with their names. Also note how the chairman and directors of respectively an agricultural organization and companies or research facilities were present in the news with names, titles, pictures and interviews, while ‘Biorga,’ the ‘Kabouters’ or ‘Lekker Dier’ were not. Apparently environmentalist foundations or activist groups were less likely to end up represented by a personal face in a sample of 144 articles, and remained almost as anonymous as the farmers of India or Zimbabwe. All in all it seems to me that the ingredients for an interesting manipulative dispute are already quite clearly present on this map.

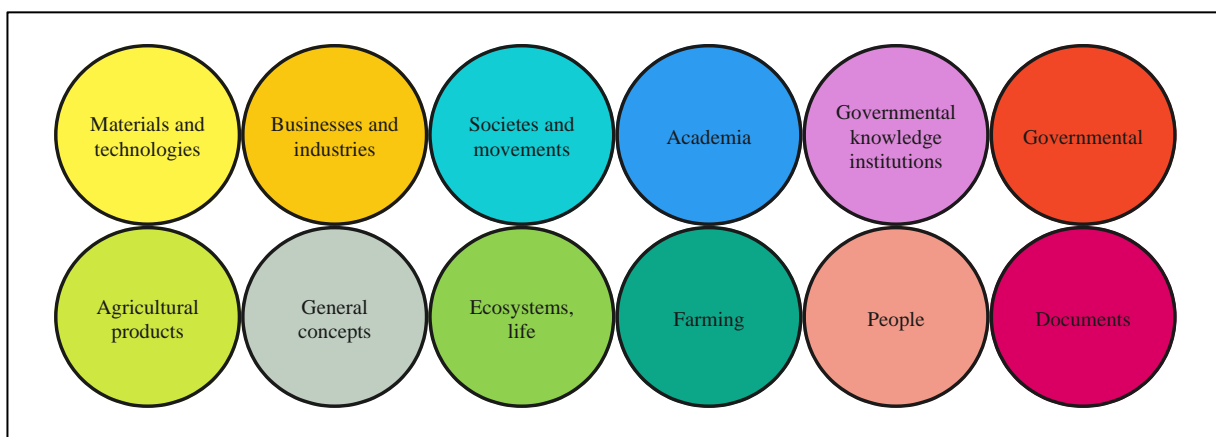
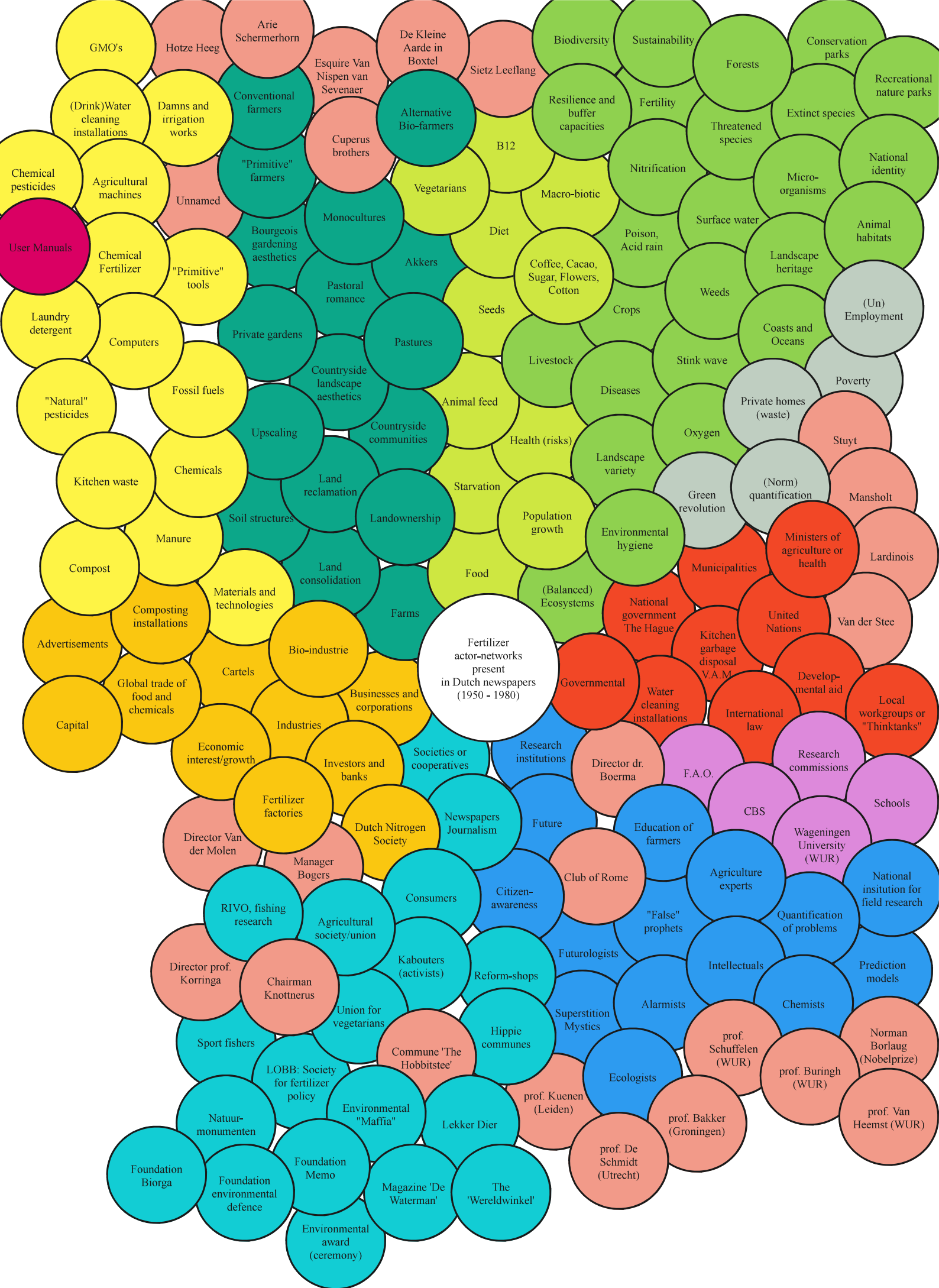


Figure 5: Legend to raspberry-map on next page. Colours represent different actor-types.



### 3.2. Literatures: Independently discussed controversies

Thomas Huckin's method, despite heavily relying on qualitative analysis, is somewhat statistical in kind by trying to show that the selection of (sub)topics that can be found in a set of texts is non-random.<sup>127</sup> Such thematic patterns, or commonalities between texts are called *literatures* by Venturini.<sup>128</sup> More specifically, these common themes or controversial issues can be broken down to smaller elements, arguments, ideas, claims, accusations, and illustrations used in Dutch news. Mapping these *presences*, allows to generally establish what was controversial but also what was known. If historical actors could not have known what they (seemingly) did not know or did not admit to know, it is hard to interpret such omissions, only understood anachronistically, as manipulative selectivity. For this reason, Huckin uses the discursive context as evidence for selectivity within one particular text. Some form of intentional selectivity is thus deduced from the discourse as a whole which functions as context for individual texts, applying a hermeneutic circle. Adding to the notion of selectivity, I also use this method to present evidence for a reductionist approach to fertilizer-related problems. Understanding and mapping that context is the goal of paragraph 3.3 until 3.5.

After reading my sources I had a pretty good idea of which controversies could be identified as related but arguably independent subjects of debate. Together these controversies made up the overall dispute. First, for five hypothesised subjects of controversy I looked for their presence in all 144 relevant source articles. The task was to find if one or more of these subjects were included into the content of these articles. Could I have taken other subjects and get a similar result? Probably yes. However, I also wanted to choose subjects that were relatively common, i.e. not limited to a handful of newspaper articles, giving me too little to work with. Besides, this method only works for subjects that you already know are there. I cannot count what I am too biased to see.

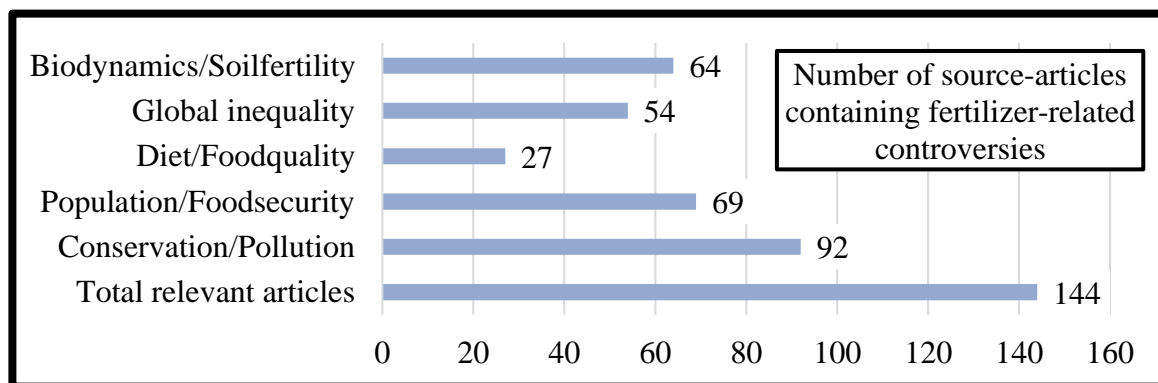


Figure 7

In figure 7, you can see the result of my work represented visually. A total of 64 articles discuss biodynamic farming<sup>129</sup> and/or soil fertility (which was sometimes discussed before biodynamic farming became a better known concept). The issue is related to fertilizers since bio-farmers prefer to use manure or compost. Chemicals, including fertilizers, had also been suspected of damaging the structure and health of the soil. Some 54 articles discussing global

<sup>127</sup> T. (Thomas) Huckin, "Textual silence and the discourse of homelessness," in *Discourse & Society* 13, nr. 3 (2002): 347 – 372.

<sup>128</sup> T. (Tomasso) Venturini, "Diving in magma," 266.

<sup>129</sup> Note that nowadays 'biological farming' and 'biodynamic farming' are both practically and conceptually more clearly separated. While the latter contains more occult practices and originates in the works of Rudolf Steiner and his followers, the former tends to be more science-based but has deep historical roots in the biodynamic movement. In this thesis I will use the two concepts as if they are one, since my sources are doing the same, and the difference tends to be irrelevant for my analysis.

inequality are related to fertilizers because the idea of spreading modern technology, among which fertilisers, was part of the postcolonial ‘green revolution’ plan and developmental aid policies. The modernization of agriculture is thus placed in a global context. The 27 articles about diet and food quality are related to fertilizers through several ways. Some people debated the food quality and potential health risks caused by chemically fertilized crops. Other articles had picked up on new diets such as vegetarianism that could be pursued either for environmental reasons, ethical reasons or reasons of food security and a global hunger crisis. Fertilizers had much to do with this hunger crisis, often discussed independently of the socio-economic inequality dimension. In about 69 articles, a question was whether fertilizers were necessary for producing enough food for a growing global population.<sup>130</sup> And last but not least, in a total of 92 articles, the effect of fertilizers on environments and the potential necessity of protecting nature, was controversially discussed. Both the nitrifying and acidifying effects of fertilizers were known and debated. For each of these five different controversies, people found arguments in favour or against fertilizer-use. I will discuss those further below.

To show that these *literatures* were indeed relatively independent sets of texts within the wider fertilizer discourse, I gathered some data on how many articles discussed any couple of these five different controversies together in one text. In figure 8, the values in orange show the amount of articles that discuss both controversies linked to that cell in the table. None of the five subjects appear to be clearly dependent on any of the others to be discussed in the news. In other words, yes, they represent different *literatures*. Many authors discussing fertilizer pollution found it unnecessary to discuss biological alternatives (58 sources); The world hunger crisis was rarely related to a discussion about healthy, “ethical” or vegetarian food (56 sources). And interestingly, about half of all articles discussing the world hunger crisis did not discuss global inequality and its relations to market-conditioned innovation or modernization (35 articles).

		Conservation		Population		Diet		Inequality		Biodynamics	
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Conservation/ Pollution	Yes	92		37	55	16	76	30	62	34	58
	No		52	32	20	11	41	24	28	30	22
Population/ Starvation	Yes			69		13	56	34	35	29	40
	No				75	14	61	20	55	35	40
Diet/ Foodquality	Yes					27		6	21	11	16
	No						117	48	69	53	64
Global inequality	Yes							54		15	39
	No								90	49	41
Biodynamics/ Soilfertility	Yes									64	
	No										80

Figure 8: Combined presence of controversial subjects in 144 source-texts (in orange). Numbers in green are visually represented in figure 8.

These results show that my categorization of the argumentative content of the fertilizer dispute is rooted in a pre-existing selectivity. But it also raises agnotological questions. Were these controversies discussed separately because they were largely considered unrelated, besides a common denominator? Does that represent a form of ideological reductionism, manipulating fair ideological comparisons? Or were the authors of my sources, intentionally

<sup>130</sup> Accidentally it is the same question that had me stumble upon the topic of this thesis.



or not, otherwise motivated to leave out related subjects? To these questions I return in paragraph 4.3.

In the rest of this chapter I will discuss the argumentative content of these literatures. For every controversy I will summarize the various arguments in favour and against fertilizer-related practices or ideas. These ideas also changed and developed over the years. While for my analysis of reductionism, all five identified subjects of controversy are relevant, here, for the sake of efficiency and understanding the connections made by environmentalist or radical critics, I have chosen to discuss the world hunger crisis controversies together with the global inequality controversies (3.4). Similarly, diets and food quality controversies are discussed here together with controversies around biodynamic/biological farming (3.5). As such I hope to find a balance between representing the fertilizer dispute in the very different ways it was perceived by two opposing ideologies, avoiding to reproduce the reduction of the debate.

Please note that all the quoted or paraphrased sentences/statements from the sources are translated from Dutch to English. These are sometimes shortened or summarized parts of larger source-texts that contain more details. It would become tiresomely repetitive to mention those details more than once if at all. I have done my best to make sure my (summarized) translations represent the meaning and attitude of the sources well. Dutch original texts of direct quotations are given in the footnotes.

### 3.3. Conservation and pollution

Perhaps a sensible place to start mapping the public fertilizer debate is a publicly expressed outrage against ecocide (*avant la lettre*). What could the average Dutch newspaper reader have discovered or learned about ecocide from the regular news, and its related controversies?

#### *Early defence of conservationism*

In 1961 *Algemeen Dagblad* reported that pastures with once ordinary flowers had become rare and that their protection in conservation parks would cost millions (#10). The rise of monocultures, homogenous landscapes, loss of natural identity, and loss of biodiversity, is what initiated a public discussion about conservation in Dutch news. Roughly a decade later, a more direct criticism was added to that worried outcry. It is *fertilizers* that have made landscapes homogenised (#19, 1967). *Land consolidation* [ruilverkaveling] destroys biodiversity (#68, 1972). *Construction work* is responsible for disappearing wood-walls [houtwallen] and trees (#114, 1974). And during the 1970s, it was much more easy to find a newspaper that offered concrete information and more clearly formulated abstractions about why ecocide was actually problematic. According to ecologist De Smidt (Utrecht University), cited in *De Waarheid* ('the truth'), bio-diversity had decreased with 95% in the 80 years prior, emphasizing the importance of bio-diverse conservation areas for preventing epidemics (#25, 1970). Other arguments included both the limits and abilities of nature. On the one hand 'balanced ecosystems' were considered to be able to heal themselves. On the other, pollution and poison might remain in nature for a very long time, pointing towards the need for caution.

This notion of balanced eco-systems changed the language of environmental worry. It was no longer only plants and birds that were threatened (see figure 9). Apart from poisoned fish and extinct species, "deforestation, erosion and desert-formation," became a growing concern.<sup>131</sup> De Smidt, now publishing in *NRC*, even noted a hierarchy in natural destruction, declaring that the (local) extinction of organisms signified the unhealthy status of the eco-system (#68, 1972). Why was that relevant? Harry Lockfeer feared that deforestation would lead to a lack of oxygen in the atmosphere, making local deforestation a global concern (#81,

---

<sup>131</sup> "Ontbossing, erosie, en woestijnvorming," in #104, 1974.

1972), a sentiment that had been expressed before in *Trouw* (#38, 1970).<sup>132</sup> However, all in all, environmental problems were rarely thought through to their ultimate consequences in Dutch newspapers. Instead, alarmism relied on two major factors: Sympathy for life (or conservation of a traditional landscape) (1) and fear of the unknown (2).<sup>133</sup>

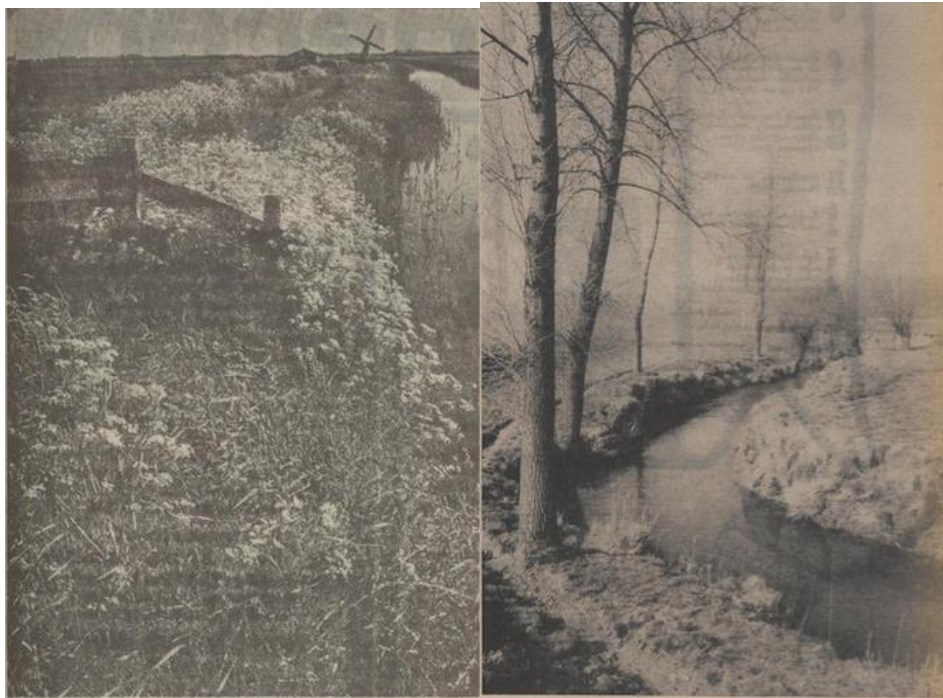


Figure 9: Impressions of recreational areas or bio-diverse nature in the news. On the left: Image in *Tubantia* (#76, 1972). On the right: Image in *Limburgsch dagblad* (#109, 1974).

First, sympathy for life or an idea of human responsibility for nature seemed to be behind much of the outrage expressed in the news. When ecologist D. Kuenen (Leiden University) wrote that “wealth is for nothing without a liveable environment,” it remained unclear what he meant with a “liveable environment.”<sup>134</sup> The reader, it seems, was expected to be shocked rather than convinced. But when he wrote that not only human beings have rights to life, Kuenen explicitly formulated a foundational criterion that showed the sense or logic behind concerns for biodiversity loss. We cannot ‘just’ destroy the habitats of other organisms. The Leiden ecologist illustrated his bewilderment of senseless human destructivity with the example of surface water pollution: “Black water in the canals that is not even clean enough for agriculture.”<sup>135</sup> Fertilizers (here also including animal excrements), according to Kuenen,

<sup>132</sup> Note that plants produce the same amount of oxygen that animals need to digest them and utilize their chemically stored energy. Thus before we run out of oxygen, we will run out of food. Lockefeer’s worry could be expressed within a paradigm of a global balanced eco-system. The forests were seen as the lungs of the earth. In terms of CO<sub>2</sub> storage that might still be considered a useful metaphor.

<sup>133</sup> Long term damage to soil-fertility, human health issues, and future starvation (3) might be seen as a third – and more concrete – idea of relevance, but tended to be more specifically related to agriculture rather than ‘nature’ as a whole. The latter is independently discussed in paragraph 3.5. On the basis of my sources, it remains difficult to figure out to what extent the typical Dutch newspaper reader would have associated concerns for birds, fish and forests with concerns for soil-fertility and quality of food.

<sup>134</sup> “Welvaart is voor niets zonder een leefbaar milieu,” in #34, 1970.

<sup>135</sup> “Zwarte water in de kanalen [...], niet goed meer voor de kandbouw,” #34, 1970.

kill everything alive in the water and even pollute the coastlines of the North Sea.<sup>136</sup> Fertilizers, agricultural chemicals in general, and farm-animal excrements, washing into canals, rivers, lakes and ultimately oceans, could be merely considered human arrogance: “Turning oceans into a waste disposal” for humanity, but the second question was: what would be its consequence?<sup>137</sup>

Second, who searches for the implicit presence of the environmentalist precautionary principle is richly rewarded in Dutch newspapers. The futurologist Herman Kahn said in an interview in the *Tijd* that humans are like bacteria, perishing as a consequence of their own waste, polluting their own living environment (#43, 1971). An unnamed journalist wondered in *Algemeen dagblad* whether we could already know “what biodiversity is good for.”<sup>138</sup> The *Volkskrant* judged human behaviour to be “reckless,” considering that people had no idea whether the effects on the environment could be reversed again if necessary.<sup>139</sup> Indeed, worries for future generations suffering from ecological poverty followed (#37, 1970). *Trouw* reported, based on new scientific information, that pesticides barely degrade naturally in ocean waters (#38, 1970). Similarly, professor Mörzner Bruyns (WUR) warned against the “unknown long-term consequences” of air-pollution (#31, 1970).

What all these statements of precautionary ‘alarmism’ had in common is that they left out, again, any scenario-based argumentation for what, concretely, might go wrong for human society. Nevertheless, the fear of the unknown, combined with a responsibility for leaving a proper heritage to future generations, can be identified as a major argument for early environmentalism in Dutch newspapers. Professor and ecologist D. Bakker (Groningen University) tried to be more precise about what was actually lost when species go extinct. He wrote that we destroy not ‘merely’ beautiful organisms but also “genetic variety” needed for resilient ecosystems (#33, 1970). While a cynic might ask so what?, the environmentalist case could hardly be ignored or remain unnoticed by the Dutch newspaper reader of the early 1970s.

#### *Criticisms of hypocrisy and the trap of the modern farm*

That cynic was named Jan van Luyn. He said he did not “give a damn about the environment,” and proposed to turn the Wadden Sea into a huge beach for recreational purposes.<sup>140</sup> Similarly, professor P. Korringa, director of RIVO, a research institution for fishing- and maritime studies, remarked that “Dutch nature is a joke.”<sup>141</sup> And consequently, there was nothing of value that needed expansive conservation. Or at least not something that could be classified as natural. Korringa expressed a sentiment of human superiority. Since humanity had created the Dutch landscape, it could also do with it whatever we wanted.<sup>142</sup> Interestingly, Hans Kok, as Van Luyn also publishing in *Nieuwsblad van het Noorden* (magazine of the north), took the same position by arguing the opposite.<sup>143</sup> He believed “the critics” (i.e. environmentalists) to be confused since the north of the Netherlands is beautiful

---

<sup>136</sup> First implicit mentioning of maritime death zones avant la lettre.

<sup>137</sup> “De zee, nu in groeiende mate gebruikt als stortplaats voor industrie-afval [...] niet zo’n onuitputtelijke vuilnisbelt,” #38, 1970.

<sup>138</sup> “Waar biodiversiteit goed voor is,” #10, 1961.

<sup>139</sup> “Roekeloze verandering,” #22, 1969.

<sup>140</sup> “Het milieu kèn me wat,” #90, 1973.

<sup>141</sup> “heeft Nederland als natuurlijk terrein al afgeschreven. Hij vindt het een lachertje...,” #48, 1971.

<sup>142</sup> Reminded me of that old French saying about God creating the world, except for the Netherlands, which was created by its people.

<sup>143</sup> As a Groninger myself, I find it somewhat amusing to see these radical voices represented in a northern newspaper. It is notoriously difficult to tell those headstrong people what to do and what to believe.

(#21, 1969). He argued that “nothing was wrong with Dutch nature.”<sup>144</sup> For some, Dutch nature did not exist. For others it was amazing as it was. Both did not feel the need to conserve anything. However, such direct opposition to environmentalism was rare. My sources offer little more than the three examples above. Usually, criticism of environmentalism was hidden behind accusations of hypocrisy (1), or the interests of farmers and ‘the economy’ (2). In the agricultural context, it is much easier to find voices in direct opposition to the claims of environmentalists, but I will discuss those further below.



Figure 10: Impressions of conventional farming in Dutch newspapers. Top left: an airplane dropping pesticides, shown in *Tubantia* (#76, 1972). Top right, large harvesting machines, shown in *Gereformeerd gezinsblad* (#141, 1976). Bottom left: “A hundred years of fertilizers,” published in *Nieuwsblad van het noorden* (#162, 1978). Bottom right: “With a fertilizer-distributer [strooier] behind the tractor, the farmer can bring larger amounts of fertilizers in one go and spread them over a considerable width,” published in *Nieuwsblad van het noorden* (#162, 1978).

So first, a more indirect ‘strategy’ of opposition regularly appearing in Dutch newspapers was to expose the messenger. R. de Jong remarked in a reader’s letter about the principles of environmental experts: “Improve the world but start with someone else.”<sup>145</sup> Van Luyn was even willing to bet on it: “Ten against one” that pollution researchers are driving cars themselves (#90, 1973). Similarly, Sante Brun asked in *Limburgsch dagblad* how much lead-pollution had been caused by the cars of biologists (#29, 1970). Two perhaps more interesting side-lines to the argument of hypocrisy concern consumers (1a) and the subjectivity of

<sup>144</sup> “Niets mit met de Nederlandse natuur,” #21, 1969.

<sup>145</sup> “Verbeter de wereld, maar begin bij een ander,” #58, 1972.

landscape heritage (1b). An author of *Het Parool* posed the question of responsibility for environmental pollution. He deconstructed the slogan ‘The polluter pays’ by remarking that “the buyer pollutes.”<sup>146</sup> Consumers of cheap food, in other words, were just as much part of a polluting system as the farmers who dump dung and animal piss into canals and lakes. While intended to be an argument against naïve or accusatory environmentalists, such criticisms of consumerism and system-dependency became part of the environmentalist programme itself quickly, nullifying its rhetorical sense. The second side-line to the hypocrisy argument was more lasting and agnotologically interesting. Sante Brun (see above) remarked that the Dutch landscape is cultural. In contrast to the ideas of professor Korringa, Brun’s position was much more nuanced. Rather than equating human influence with the absence of nature, she pointed out that scientists decide subjectively what is worthy of protection, what should be considered Dutch ecological heritage. The issue was highly prone to conflict. J. Spijkerman angrily asked in the *Leeuwarder courant* why ornithologists have a stronger political claim than traditional egg-searchers (#88, 1973).

Second, the economic interests of Dutch agriculture that had barely but surely started to modernize (see figure 10), marks the most significant indirect criticism of environmentalist concern with fertilizers. Everything we saw from the historical context provided in paragraph 1.2 can be found back in Dutch newspapers. The conflict between farmers and conservationists did not go unnoticed by the media. J. Metselaar in the *NRC*, wrote that many Dutch farmers felt offended and mistreated. Those who had been taking care of the Dutch landscape for generation were now suddenly considered its enemies (#151, 1977). The position of ‘the Dutch farmer’ in the fertilizer debate might indeed be considered an unfortunate or tragic dilemma. It is illustrated by the ideological gap between conventional and biological farms. In paragraph 3.5 the controversies around this opposition between conventional and biological farms are discussed in more detail. Here I will introduce what was relevant for the controversies around conservation in particular.

In 1972, Sietz Leeftang started project ‘De Kleine Aarde’ [the small earth] which became an experimental place for biological farming, referenced regularly in newspapers of the 1970s.<sup>147</sup> Leeftang started this project with predetermined environmentalist goals, and did not inherit a farm of many generations. In contrast, the Cuperus brothers had been using fertilizers and other chemicals on their family dairy farm. Once they noticed that fertilizers decreased the herbal diversity of their pastures, they decided to change their agricultural methods and turned ‘bio’ (somewhat anachronistically), for more pragmatic, though nevertheless radical reasons (#167, 1978). Similarly, esquire Van Nispen van Sevenaer had read the research of dr. J. Grashuis in 1955, about animal health and fertilizers, and was inspired to rethink his methods in ways partially unintended by Grashuis.<sup>148</sup> His bio-dynamic farm in Zevenaer was one of the first ones in the Netherlands (#95, 1973, #118, 1974). These farmers, represented in the news as special outliers, which they were, pioneered alternative business models. However, while representing an important alternative agricultural system, it would be an historical inaccuracy to map a mostly discursive dispute between agricultural methods onto socio-economic reality. That is, of 2.200.000 hectares of Dutch agricultural land, in 1975, only 450 hectares were identified as biological/bio-dynamic/alternative (#138, 1975). By and large, biological farming was not considered a serious alternative by ‘the establishment.’ And thus, in the dispute about conservation, farming organizations, food cooperations, agricultural industries, and even research institutions such as RIVO, must be roughly considered in opposition to the environmentalist position. The vast majority of

---

<sup>146</sup> “De betaler vervuilt,” #47, 1971.

<sup>147</sup> See #72 (1972), #92 (1973), #115 (1974), #155 (1978)

<sup>148</sup> F. (Floor) Haalboom, “De man die de Nederlandse bio-industrie van voer voorzag én daar zo zijn ecologische bedenkingen bij had,” in *Wonderkamer 5* (2022): 50 – 56.

farmers found themselves trapped in the modernization narrative (see figure 11). But, as we saw in paragraph 1.2, even more people had found themselves without a farm, which was confirmed by the *Volkskrant* (#167, 1978).



Figure 11: Cartoon of the farmers' dilemma. "The soil and the prize of freedom. Farmers distrust 'nature' of the Hague," published in *NRC* (1977, #151).

According to the ministry of agriculture in 1977, half of all farmers needed to find another job for the sake of scaling up the remaining farms. In practice, that meant that many older farmers would not be replaced after retirement (#153). The economic as well as the political pressure on farmers to modernize, to scale up, to produce more efficiently, to be able to sell at lower prices, had been enormous.<sup>149</sup> These developments did not go unnoticed by the news at the time. In 1962, the *Leeuwarder Courant* noted how more capital and investments had turned farming into agricultural business (#12). To survive in a competitive market, it was argued in several news articles that farmers were forced to produce much more food, and thus depended on chemicals and monoculture (#17, 1966, #148, 1977). The *Leeuwarder* *courant* wrote: "Small romantic farms are an illusion of the past."<sup>150</sup> What can be seen represented here was a struggle for economic survival. Those who were still running an agricultural business in the 1970s had most likely gone through a fundamental transition. Arie Schermerhorn proudly represented the new conventional modern farmer in an interview published by the *NRC*, dismissing any environmental worries about fertilizer use, but freely acknowledging that his work would be a lot easier with only half his livestock (#67, 1972). Farmers did not make investments in polluting fertilizers for the fun of having debts.

With that the "trap" [val] of agricultural modernization, in the words of ecologist De Smidt (#138), had become apparent. The tragedy of the anti-environmentalist position of the conventional farmer was that he or she could quite literally not afford otherwise. In 1974, after a global oil crisis had pushed up the prices for using machines and fertilizers, conventional farmers were hitting the wall. Figure 12 shows them protesting in the province of Groningen against European food-price policies. According to that article in *Nieuwsblad van het noorden*, "especially the younger farmers were protesting, since they made the biggest

<sup>149</sup> J. (Jan) Bieleman, *Five centuries of farming*, 240.

<sup>150</sup> "dat het rijk van de kleine boeren (erf met oude appelboom) met deze generatie ten einde loopt!," #59, 1972.

investments and had the highest debts.”<sup>151</sup> Arguably, from the perspective of these conventional farmers, conservationist policies were not very different from a government badly handling the consequences of an oil-crisis. It was ultimately just about money. But the history, described above, is not unimportant: farmers did not actively choose to make themselves dependent on investors, debt and modern efficiency. That system was imposed by a competitive market, science advisors and governmental subsidies. In other words, they were ideologically manipulated. Quite understandably then, “farmers distrusted environmentalist policy about landscape parks.”<sup>152</sup> The chairman of the council for nature protection, J. Nicolai, was nicknamed “boss of the green mafia (#151).” However, according to the journalist F. Groeneveld, farmers did not generally dislike nature conservation as long as they were paid for it (#114, 1974). Rather, agricultural organization and food industries resisted conservation policies or narratives for they desired higher economic efficiency (idem). The idea that the conservation issue could be solved by simply paying farmers to do ecological landscape management or ‘environmental hygiene’ was common (see #65, 1972, #87, 1973).



Figure 12: Farmers’ protests after global oil crisis. About 700 tractors were used to block strategic traffic points throughout the province of Groningen. German colleagues joined in too. Picture shown in *Nieuwsblad van het noorden* (#111, 1974).

### *Publicly brainstorming solutions*

In summary, several positions and main arguments in controversies about fertilizer-related environmental conservation can be identified in newspapers of the time. Environmentalist and ‘alarmist’ concerns for the environment and worries about pollution relied on precaution, sympathy or love for nature and responsibility towards future generations. In reaction, direct rejections of environmentalist claims were rare. The opposition relied more strongly on accusations of hypocrisy and economic interests. Biological alternatives to the conventional farm were more present in the news than they were in the Dutch landscape. Conservation of nature had thus found itself in opposition to the interests of farmers, food-industries and their investors. Using fertilizers was not an option according to environmentalists. It had become increasingly apparent, for some, that fertilizers are not good for soil-resilience and biodiversity (see #68, #74, 1972). Not using fertilizers, for others, was also not an option. On the

<sup>151</sup> “vooral jonge boeren lopen en rijden in de actie, omdat zij het zwaarst worden getroffen [...] Zij zitten vaak met grote investeringen end us zware lasten,” #111, 1974.

<sup>152</sup> “Boeren wantrouwen Haagse ‘natuur’,” #151, 1977.

one hand, according to *NRC*, simply buying arable land to protect it was too expensive (#65, 1972). On the other hand, since modern agricultural businesses had been trapped by their own investments, a compromise with the farmers needed to be found (#65). In that context, the fertilizer-dispute in the news developed into a public brainstorming activity for finding solutions, beyond agricultural alternatives. Simply turning towards bio-farming thus remained largely invisible in a reductionist debate.

First, a rather eco-modernist perspective *avant la lettre* was represented by professor C. de Wit (WUR), who argued that the highest possible efficiency on small pieces of land would be best for conservational purposes, since it would leave more space to conservation parks (#175, 1979, #103, 1974). A similar opinion was expressed already in 1972 by engineer S. Herwijer who believed that after more scientific innovation, humanity would need less soil for food production in the future (#65, 1972). More agricultural modernization was thus by some considered the solution for the problems it had created in the first place. As we saw from paragraph 1.2, this was the political route later chosen. But in the 1970s, it was still open for debate.



Figure 13. On the left: Professor D. Kuenen, ecologist at Leiden university, shown by *Nieuwsblad van het noorden* (#34, 1970). On the right: A dog with professor F. Polak, futurologist at Groningen university, shown by *Algemeen dagblad* (#55, 1972).

One example of such promising innovations was genetically modified crops (GMO's). Such crops would need less pesticide, which was a bonus for the environment (#24, 1970). According to professor A. Schuffelen (WUR), crops with fast growing roots could be developed for early and efficient absorption of fertilizers, increasing productivity and allowing for less 'leaking' of fertilizers into the environment (#110, 1974). For those believing in the extraordinary innovative power of science, this must have seemed a promising strategy for conservational purposes. And a call for developing 'cleaner' technologies was not at first fully rejected by environmentalists. Ecologist De Smidt believed it to be an important first step, carefully acknowledging that it could not hurt to develop 'cleaner' technologies (#25, 1970). DSM (Dutch nitrogen society) director Bogers (#108, 1974) and economics professor Brand (#69, 1972) even believed so strongly in the possibility of clean technology that they felt justified in dismissing environmental problems as "solvable against a low price," its solutions being "just a matter of time."<sup>153</sup>

<sup>153</sup> "tegen relatief geringe kosten zal worden opgelost," #108 & "een kwestie van tijd," #69, 1972.



Brand suggested to speed up innovation a little by taxing the production of polluting materials. The idea of financial incentive for environmentally friendly innovation is more generally present in my sources. Professor Kuenen (see figure 13) proposed to express environmental damage in financial terms to make the value of conservation policy politically comparable to other policies (#34, 1970). Futurologist and professor Fred Polak (University of Groningen, see figure 13) felt that the report by *The Club of Rome* (1972) was too pessimistic, not appreciating the problem solving capacity of future science (#55, 1972). Related to such notions of clean innovation, its promises and incentives, a slightly divergent idea was to deal technologically with the symptom rather than the cause. Ton Jacobs wrote in *De Volkskrant* that “a big technological effort is needed to figure out how we can master the environment.”<sup>154</sup> The CBS (centre for statistics) calculated that an investment of 10 billion *gulden* and yearly maintenance costs of 1,5 billion *gulden* was needed for water cleaning installations to fight surface water pollution (#79, 1972). All in all, the notion of innovative technology was often argued to be the best way forward, foreshadowing the precision-farming developments in the 1980s.<sup>155</sup>

For a second brainstorm, some authors had picked up upon ideas of global environmental law. The conviction that no country wants to intentionally worsen its own relative competitive position on a global market logically leads to the belief that only international conservationist restrictions can prevent a race to ecological destruction (#98, 1973). One example of such law, proposed by Harry Lockefer, would be a policy that makes permissions for developmental aid and global trade dependent on environmental criteria (#81, 1972). One could argue similarly that no farmer would stop using fertilizers as long as other farmers are using them, keeping the price of food low. Strong criticism of such excuses reflected growing polarization in the debate. The journalist Wouter van Dieren exclaimed that calling for international policy that is unlikely to happen, and even more unlikely to be enforced, is just a way for governments and corporations to change nothing (#93, 1973).

A third promising brainstorm that resonated throughout the public pollution-dispute was the need for a mentality change. Everyone could make their contribution to a cleaner environment since lots of (nitrogen) pollution was coming from private homes (#27, 1970). Professor Bakker wrote about the need to redefine our relationship with nature, introducing environmental awareness in educational programmes, making it a topic in school (#38, #99, #170). Related to this ‘solution’ was the controversy about diets and vegetarianism that I will discuss in paragraph 3.5. However, more radical environmentalist thinkers suspected here again a form of apologist rhetoric. An unknown journalist wrote in *Tubantia* that ‘just’ changing some habits, making small mentality changes, is not nearly approaching an understanding of the significance of environmental problems (#98, 1973). The strategy leaves the larger narratives unchallenged but nevertheless produces a delusion of ‘doing the right thing’. This discussion also left an open question for consumers: Was changing mentality or some individual habits meant to be part of ‘the solution’ or was it mostly meant to (be able to) rebut *ad hominem* accusations of hypocrisy?

### **3.4. Population growth, food security and global inequality**

A Christian author in *Het Gereformeerd Gezinsblad* (reformed family magazine), concluded that implementing all policy suggestions of environmentalists would threaten the societal facilities for food, resources and energy (#110, 1974). As political theory suggest (see 1.1), the external threat of hunger prevented the ideological application of a different logic. One possible and regular line of reasoning would be something along the lines of: environmental

---

<sup>154</sup> “Een technologische inspanning vergelijkbaar met die van de ruimtevaart zal nodig zijn [...] op het gebied van milieubeheersing,” #23, 1969.

<sup>155</sup> J. (Jan) Bieleman, *Five centuries of farming*, 317.

issues are important but fertilizers are necessary to feed a growing population in the world. This claim is littered all over newspapers from at least the 1950s until the 1980s and beyond. How it was discussed in Dutch public media in the early decades of the green revolution provides important insights, necessary for my later agnotological analysis. Various criticisms of the fertilizer-necessity claim offer new ways to understand the ideological opposition between environmentalism and technocracy, and its relation to social injustices beyond the developments on the Dutch countryside.

*The fertilizer-necessity claim and the threat of population growth*

The underlying assumption of the fertilizer-necessity claim is rarely explicitly acknowledged by those who make this claim: i.e. hunger crises are the result of a lack of food. From there ‘solving’ the problem of starvation is simply a form of symptom management. “We need to produce more food!,” was a call for productivity and modernization, backed-up in the news by authorities such as professor A. Schuffelen (#4, 1955) of Wageningen University (WUR) and the FAO (UN food and agriculture organization) (#9, 1960). The post-WWII decades saw large-scale Western interference with farming practices in ex-colonies in the so called ‘developing world.’<sup>156</sup> The philanthropic justification for the ‘green’ revolution, described by Vandana Shiva, can also be identified in Dutch newspapers, and is highly relevant for paragraph 4.2. In the early 1960s it was reported in *Trouw* that the FAO had embraced the amazing task of ending starvation in the world (#9).

Indeed, the responsibility of the ‘West’ to bring prosperity to the ‘developing world’ (#14, 1965) was regularly considered in terms of a heroic or philanthropic sacrifice. Professor J. Tinbergen (see figure 14) formulated this sentiment concretely by arguing that “the West needs to give up some of its wealth to create well-being for all.”<sup>157</sup> This way of thinking – or justifying agricultural modernization – is especially worthy of remembering when looking at postcolonial criticisms of the green revolution appearing in the news during the 1970s. Dr. Boerma, director of the FAO (see figure 14), even acknowledged that “developmental aid is not philanthropy but *good business*.”<sup>158</sup> The logic was simple. Less social inequality meant larger markets to sell Western products to. Among those products were also fertilizers.



Figure 14. On the left, professor J. Tinbergen, shown in *Vrije Volk* (#20, 1968). On the right, FAO director A. Boerma subtitled with “...help is *good business*,” shown in *De Volkskrant* (#41, 1970)

<sup>156</sup> V. Shiva, *The violence of the green revolution* (Mapusa: The other India press, 1991).

<sup>157</sup> “het erom gaat dat het Westen iets van eigen vooruitgang kan opgeven,” #20, 1968.

<sup>158</sup> “denkt men nog te veel dat ontwikkelingshulp liefdadigheid is [...] Hulp, dat is *good business*,” #41, 1970.

In order to battle starvation, agricultural modernization was considered key. Of 350 million farms globally, 250 million still used “primitive tools (#9, 1960).” A western research commission found that 50% of potential irrigation benefits in Bihar and West-Bengal were left unutilised (#8, 1959). The reason, according to them, was that the Indian farmers were not aware of their “responsibility” to produce more food. Naturally, ‘superior’ scientific knowledge (see #4/#14/#172) of the West was needed to help these ‘primitive people’ to help themselves (see figure 15). Modernization of agriculture in ‘the developing world’ included the expansion of arable land, and the introduction of new technologies such as seed disinfection, new more efficient crop species, mechanization, irrigation systems, pesticides and of course fertilizers.

According to professor Gunnar Myrdal, speaking at an FAO congress, there is enough (potential) fertile arable land to produce food for everyone (#14, 1965). However, what that meant, one of the central questions of the fertilizer debate, was open to interpretation. According to most articles in Dutch news on the topic, the ‘developing world’ could only feed itself by importing fertilizers from the West and building its own fertilizer factories (#8, 1959). Looking at a future with an even larger global population, the FAO had calculated that by the year 1985, global fertilizer-use had to be increased by a factor ten (#39, 1970). But during the 1970s, the rhetoric had slightly changed. Rather than arguing that fertilizers were needed to prevent starvation, it was mentioned in several articles that starvation would be the result of not using fertilizers anymore. As such, fertilizers were not just part of the ‘solution’ for hunger, its lack was framed as part of the problem (#119, 1974). This remarkable rhetoric, making fertilizers indispensable, was further ‘proven’ by global food shortages and starvation disasters following the 1973 oil-crisis, during which fertilizers were sold at much higher prices, making them too expensive for the ‘developing world’ to buy.



Figure 15: Presentation of ‘primitive’ farming in the news. On the left: “The ‘food transport’ on the countryside of Makassar,” shown in *De Volkskrant* (#40, 1970). On the right: A farmer ploughing his field with a dromedary camel, subtitled with “Fertilizers are of life-saving importance for the increase of food-production in the developing world,” shown in *NRC* (#146, 1976).

The looming threat behind this debate, and an additional issue that was discussed in Dutch newspapers, was population growth. I suppose at least since the 18<sup>th</sup> century publications by

Thomas Malthus, a discussion about starvation had to be also a discussion about population pressure. Ester Boserup, famously considered the most important modern critic of Malthus, proposed that necessity is the mother of innovation, holding a technological optimism that considered population growth unproblematic and even a motivating ‘force’ behind technological advancement.<sup>159</sup> However, not everyone was prepared to take population growth as a given that needed to be accepted and dealt with by modernizing agriculture.

As early as 1959, population control can be found mentioning in my selection of newspapers. A research commission in India was of the opinion that birth control was necessary (#8). One decade later, the *Volkskrant* remarked that better socio-economic circumstances also meant higher levels of consumption (#22). So not only did we have an increasing amount of people to feed, the amount of food per person was also increasing. What geopolitical birth control looked like in practice remained unexplored in my newspaper sources until around the publication by *The Club of Rome* (1972). Professor Brand still wondered in an 1972 *Parool* article how population control would work: “how to tell poor people, whose children form an elderly care insurance, to get less children?”<sup>160</sup> In 1973, a citizens workgroup for environmental management in Hengelo spoke out in public to answer that question. Their representative C. van der Meulen confessed his belief in a governmental 2-child policy and a ban on the construction of new family homes (#99). It goes to show that more radical voices about human fertility became *salonfähig*. Journalist Wouter van Dieren summarized some more moderate options in an article of the same year: Birth-rates can be reduced through more “awareness, education, medical care, and available anti-conception.”<sup>161</sup> However, Van Dieren also feared the consequences of “average aging [vergrijzing] (#93).”



Figure 16: Cartoon for overpopulation. “Too many people, not enough food,” published by *Het Parool* (#105, 1974).

After the oil-crisis of 1973 and its follow-up hunger crises, according to journalist Matthijs de Vreede, birth-rate reduction was discussed for the first time in history during a UN conference in 1974 (see figure 16).<sup>162</sup> It was politically recognized that population growth was best reduced in combination with reducing poverty (#105). Such official insight in the relations and interdependencies between various societal phenomena was quite a remarkable, untypical, non-reductionist feat. Concerns for resource-depletion, associated with the fresh-in-

<sup>159</sup> S. (Scott) Soby, “Thomas Malthus, Ester Boserup, and agricultural development models in the age of limits,” in *Journal of Agricultural and Environmental Ethics* 30, no. 1 (2017): 87 – 98.

<sup>160</sup> “Hoe vertel je ouders In landen, waar kinderen eeuwenlang een verzekering voor de oude dag zijn geweest, dat ze minder nageslacht moeten verwekken?,” #69, 1972.

<sup>161</sup> “Voorlichting, onderwijs, medische zorg, voorbehoedmiddelen,” #93, 1973.

<sup>162</sup> Note that this was historically incorrect. See A. (Alison) Bashford, “Population, geopolitics, and international organizations in the mid twentieth century,” in *Journal of World History* 19, no. 3 (2008): 327 – 47.

memory-oil-crisis and the *Club of Rome* report, had lowered optimism about feeding 11.000.000.000 people by the time humanity would reach the year 2050. Others, such as professor P. Nijkamp, agreed with fighting poverty to put an end to starvation, but did not need the argumentative *zwischenzug* about birth control. He wrote that the world had enough potential to feed everyone. However, using that potential to end starvation and malnourishment, food and wealth needed to be distributed more equally (#141, 1976). With these conceptual developments, hunger became a social and political question, as much as it was a technical one. Thus, in the 1970s, relating agricultural practices with global inequality and injustices, the road was opened for radical ideological criticism of the green revolution.

### *Three criticisms of the green revolution*

Firstly, the green revolution was criticised regularly in Dutch newspaper, as Nijkamp did, by pointing out that the modernization of agriculture, staged as a philanthropic project to eradicate hunger, had done ‘nothing’ or very little of the sort. The parallels to the Dutch situation are quite interesting. In the previous paragraph I had already discussed the mechanisms of economic transformation demanded by agricultural modernization. In the Netherlands, several hundreds of thousands of people working in the agricultural sector had been slowly replaced, over the course of a few decades, by machines.<sup>163</sup> Those people did not, mostly, end up starving to death, for they lived in a relatively wealthy country. But the ensuing “social disintegration of the country side” as well as unemployment issues were nevertheless criticised in the news by journalist Wouter van Dieren.<sup>164</sup> In the context of the ‘developing world,’ a related criticism of agricultural modernization was more fierce for its consequences had been much more detrimental. Nevertheless, seeing how technocratic systems had similar effects in different places of the world, was important for realizing how fundamental the problem was.

In professor De Wit’s reflection of the green revolution he concluded that all the extra food was too expensive for the now unemployed country folk and agricultural workers who had been replaced by machines (#103, 1974). Consequently, as was observed already by J. ten Houten in 1966, the introduction of fertilizers in the ‘developing world’ caused more poverty than it prevented hunger (#16, 1966). This hypothesis of a causal/systemic relationship between modern technology and poverty was absent from the analysis of other actors in Dutch newspapers. FAO director Boerma acknowledged that in early stages of the green revolution the technological focus had been dominant. But from the 1970s onwards, unemployment of poor people in the country sides of the ‘developing world’ was thought to become the next big challenge for the FAO (#41, 1970). Here Boerma saw both issues but refrained from explicitly relating them, perhaps unwilling to criticise those technological improvements, as such feeding into a reductionist ideology. Boerma wanted to do both: philanthropically modernize in a socially just way. For many critics of the green revolution, that attempt was paradoxical, uncovering its ideological naivety or unwillingness.

What basically all observers agreed upon, including Boerma, was that the green revolution, in order to succeed, needed to go hand in hand with social reform. Professor W. Wertheim (WUR) remarked, somewhat on the nose, that poor farmers cannot make expensive investments in modern methods or technologies, especially in a political context of military exploitation or corrupt bureaucracies (#40, 1970). Wout Woltz wrote in the *NRC* that small farmers, as a result, could not benefit from twenty years of developmental aid, that was meant to help them (#176, 1979). According to Woltz this was in part because many small farmers had refused to change their traditional methods. But he also acknowledged that unequal

---

<sup>163</sup> J. (Jan) Bieleman, *Five centuries of farming*, 240.

<sup>164</sup> “Sociale desintegratie van het platte land,” #163, 1978.

distribution of landownership had set up the green revolution for failure. 90% of arable land in Latin America, according to Woltz, was owned by 10% of landowners.

The idea of wealthy farmers/landowners benefitting or profiting from modernization and Western aid, while poor country-folk lost their incomes and jobs, was a recurrent theme throughout the news of the 1970s (#39/#104/#179). Agrarian workers who did not own the land they worked on did not have access to “fertilizers, seeds, machines and loans (#174, 1979).” The ensuing discussion about what kind of social reform was required and why, included some interesting nuances. Harry Lockfeer pointed out that, in terms of food production fertilizers were only economically profitable if hungry people could actually pay for food (#129, 1974). Since they could not pay for food, investments were instead profitably made to use good land for growing cotton, flowers, coffee, cacao and animal feed, for exportation to the global north. A report about Ghana in *Het Gereformeerde Gezinsblad* had noted in 1975 that the country made a lot more money selling cacao than corn (#132). While the wealthy were making their money on the global market, the poor had lost access to arable land for the production of their food. Anyone able to invest in landownership would be outcompeted by international businesses. Lockfeer concluded that more credit needed to be given to small farmers, fighting poverty, supporting the small businesses that actually grew food, and redistributing landownership to reduce poverty. Tinbergen interestingly observed that small farmers in Asia were more efficient per hectare than large businesses anyway (#165, 1978, also #154). Thus ironically, the scaling up of farms as part of the modernization programme, had not, in itself, led to higher yields (yet).



Figure 17: The presentation of poor children in the news. On the left: “Malnourished children from Honduras,” shown in *Trouw* (#9, 1960). In the centre: Poor people ‘helped’ by western man with sunglasses, shown in *De Telegraaf* (#18, 1966). On the right: “More food because of fertilizers,” shown in *De Telegraaf* (#119, 1974).

Secondly, another criticism of the green revolution concerned its intention. Wouter van Dieren questioned whether an interest to feed the world and eradicate starvation was not just a rhetorical myth (#163, 1978). Considering the Western interests in such products as coffee and cotton, the green revolution had actually succeeded splendidly. Recall that FAO director Boerma had previously acknowledged that developmental aid was not philanthropy but good business (#41, 1970). Granted, Boerma was also in favour of ending Western protectionism and wanted to help the ‘developing world’ to build its own factories and produce its own fertilizers (#39, 1970). But for critics like Moore and Collins, international scientists referenced in *Amigoe*, such strategies for helping to ‘develop’ were still victim to the mechanisms of global inequality. Fertilizers and pesticides, they had figured out, were mostly

used by those farmers who grew valuable export-crops rather than food (#154, 1978). Accidentally, that also meant that environmental damage in the global south caused by fertilizers, was not 'acceptable' as a price for solving world hunger. Not only were hundreds of millions of people still suffering from malnutrition (see figure 17), those polluting fertilizers had not even been used in an attempt to do something about it.

According to Moore and Collins investments in factories, land, businesses, and modernization served the interests of the wealthy west, due to the speculation and influence of international investors and corporations (#154). They rejected both the initial principle of the green revolution, solving hunger by producing more food, as well as the idea of equal distribution of wealth and food. What Wout Woltz and Harry Lockfeer had hinted at before (see above) it was not nourishment or employment that needed fair distribution among farmers but the "means of production" themselves (#154), the land, the factories, the knowledge. With this criticism, the idea that the green revolution was "not ideal but necessary to produce enough food," in the words of professor Brand (#69, 1972), had been thoroughly ideologically undermined.<sup>165</sup> Brand's only argument left standing was that at least some people in 'developing' countries, elites, perhaps even a majority, benefited from a global market of fertilizers and luxury products like chocolate and flowers. Their wealth was also growing with higher gross national product quota. *Het Gereformeerd Gezinsblad* reported acknowledgingly that People were still starving but the green revolution had given the developing world "a better position in the global market."<sup>166</sup>

However, also this idea of increasing global economic equality was criticised since typical colonial economic dependencies had not been challenged. Boerma's ideal of the 'developing world' producing its own fertilizers had not been brought into practice. A report from the institution for developmental studies in Tilburg was referenced in the *NRC*, observing that Western fertilizer industries had made a billion dollar profit on exports to the 'developing world' (#146, 1976). Developmental aid had been indirectly spend to pay Western companies rather than to invest in regional factories. DSM was connected by Groosman and Vingerhoets to Swiss cartel Nitrex A.G. through 'Het centraal stikstofverkoopkantoor' (nitrogen export office). Exporting through Switzerland made the trades invisible for the EG (#146). Discussing global inequality in relation to fertilizers, journalist Vic Langenhof remarked that on US golf-terrains and lawns more fertilizers were used than would be needed to feed millions of people (#103, 1974). As such, the idea that an unjust economic system was better than nothing stood in the way of proper ideological reform.

A last and third criticism of the green revolution is a mere technicality compared to the above but deserves mentioning. Boerma noted that too many pesticides were used in the 'developing world' in situations where that was not required (#135, 1975). In other words, the 'proper' implementation of modern agricultural methods was regularly misunderstood. In that context, the engineer P. Cornelius pointed out in *Vrije Volk* (free people magazine) that Western methods could not just be copied and needed to be adapted for different circumstances (#83, 1972). Environmental issues with fertilizers and pesticides needed to be re-interpreted depending on the characteristics of local eco-systems or landscapes. Polluted drinking water, lower hygiene standards, epidemic diseases and flooding catastrophes, made it so that environmental problems were much more detrimental in (many parts of) the 'developing world' (#81, 1972). Harry Lockfeer added to that discussion by pointing out that

---

<sup>165</sup> "Een aanpak met tal van haken en ogen, maar er is geen andere weg [om genoeg voedsel te produceren]," #69, 1972.

<sup>166</sup> "niet zeggen dat er geen honger geleden wordt, maar het is duidelijk dat deze directe verbetering van de landbouwproductie ook de handelsbalans van die landen verbeterde, en dus ten goede kwam aan het volk," #57, 1972.

different climates and different typical crop diseases in different regions of the world required locally adapted innovations and more region-specific research (#129, 1974).

All in all, the green revolution was mostly criticised for its universalist strategy and failure to take local circumstances into account (see 2.3 and 4.3). Whether those circumstances were social, political, cultural or ecological is of secondary interest but examples can be found for all of them in the criticisms present in Dutch newspapers.

#### *What about bio-farming and the relevance for the Netherlands?*

While criticisms of the green revolution, represented above, contained compelling arguments, the foundational point of the fertilizer-necessity claim remained untouched. Global agricultural modernization was going wrong in so many ways, but even in the eyes of many of the critics mentioned, no alternatives existed. Global use of fertilizers and other chemicals needed to increase, perhaps in combination with social reform, locally adapted technologies, and a more equal distribution of means of production, but increase nonetheless. Not everyone agreed with that.

The engineer Haisma van Bergum noted that “it is wrong to pose starvation as the only alternative to using fertilizers.”<sup>167</sup> Henk van Halm similarly argued that starvation or poison are not the only options (#74, 1972). A third option was biological or bio-dynamic farming. A. de Kool warned in a 1971 *NRC* article that bio-farming was only rejected on the basis of lacking evidence for its potential (#49). Perhaps it was worth a little more scientific attention at least. In the meantime, it was such a pity that thousands of tons of manure, now considered useless waste, were just thrown away.

While these arguments could be seen as a fourth criticism of the green revolution, the discussion had a different tone, refusing to go along with the green revolution *straw man* to begin with. It was questioned on the one hand whether the production of food *now* should be a higher priority than developing sustainable production systems for the future (#68, 1972). And on the other hand, several actors, among which the journalist Vic Langenhoff, wondered why a global strategy needed to affect a local discussion (#87, 1973). Why did global issues inform a discussion about the intensification of agriculture in the Netherlands? As if Dutch farms were somehow a vital element in the struggle against world hunger. Especially considering the social and political criticisms of the green revolution, bringing into question whether ‘producing enough food’ was the fundamental issue, the significance of Dutch farms in particular was surely even lower.

One position left standing was the value of self-sufficiency. In his farewell speech A. Schuffelen (WUR) concluded that without fertilizers (as usual here not including manure or compost) the Netherlands could only produce food for six to seven million people (#110/#124, 1974). Apparently, Schuffelen believed that to be a problem, although the need for national self-sufficiency remained barely argued for throughout my entire selection of newspapers. A combination of fresh memories of War related hunger in the Netherlands and a nationalist sentiment of ‘blood and earth’ [bloed en bodem], identifying Dutch identity with its own soil, not wanting any dependency on the soil of other cultures, may have been responsible for such sentiments of self-sufficiency. Whatever its origin, other authors such as Langenhoff did not go along with its logic.

On top of that, the scientific conclusions by Schuffelen were equally scientifically challenged only several years later. According to the doctoral research of R. Nauta (WUR) fertilizer-free agriculture could feed the Dutch population if they would collectively switch to a vegetarian diet and manage a strict recycling of minerals (compost) (#175, 1979). As such, whether in favour or against self-sufficiency, the debate about fertilizers needed to be decided

---

<sup>167</sup> “het is niet juist om de hongersnood als alternatief te stellen,” #17, 1966.



in other ways and on an ideological level. Similarly, no matter whether arguing in favour or against bio-farming, considering environmental and social criticisms of conventional agriculture in the Netherlands in particular, the fetish with ‘producing *enough* food’ by using fertilizers, could be considered a bit weird, or unexplained as best. At worst, it was a delusion based on the confused mixing up of global and local relevance and circumstances. Or perhaps it was manipulative rather than confused. That mix-up is best illustrated by the figure of C. Knottnerus.

Engineer and chairman of the Dutch agricultural society, C. Knottnerus (see figure 18) reacted in *Algemeen Dagblad* to the ‘urgentienota’ [memorandum of urgency] about environmental hygiene, published by minister Stuyt of public health (1972). He angrily noted that fertilizers were a “bitter necessity,” that nobody uses just for fun.<sup>168</sup> Without fertilizers, following the logic of the green revolution, Knottnerus agreed that much of the world would starve to death (#54). Here we see an agricultural authority using a *global* need and green revolution rhetoric as a direct argument against *local* environmental worries in the Netherlands. This way of thinking found its way into the mind of the conventional farmer. In the interview with Arie Schermerhorn (see figure 18) he somewhat nostalgically remembered that previous generations of farmers made a proper living with just a few cows. However, repeating the teachings of Knottnerus, Schermerhorn worried that more cows were needed today to make sure to feed “all those millions of people”<sup>169</sup> Such was his responsibility as a farmer.



Figure 18. On the left: Jan Bruinsma, scientist, shown by *Algemeen dagblad* (#24, 1970). In the centre: C. Knottnerus, chairman of the agricultural society, shown by *NRC* (#62, 1972). On the right: Arie Schermerhorn, farmer, shown by *NRC* (#67, 1972).

More generally, biological farming was criticised by GMO tomato cross-breeder Jan Bruinsma (see figure 18) as a non-alternative to the green revolution due to its lacking efficiency and resulting elitism. Criticising this biological alternative outside of its own logic, judged by its performance within *status quo* society, people found it easy to point out its failures. Engineer J. van Riel thought bio-food was produced inefficiently and therefore

<sup>168</sup> “Kunstmestgebruik is een bittere noodzaak,” #57, 1972.

<sup>169</sup> “Al die miljoenen mensen,” #67, 1972.

expansive (#51, 1971). According to journalist Vic Langenhoff, bio-farming was seen as a “luxurious pastime activity” in FAO circles (#103, 1974).<sup>170</sup> In the early 1970s authors who would generally take an environmentalist position were sometimes buying into the same rhetoric and fed unfortunate stereotypes of bio farming symbolizing a step backwards. J. Vis wrote in *NRC*, just weeks after car-free Sundays had been installed to deal with a global oil-crisis, that perhaps horses needed to be reintroduced in agriculture (#97, 1973). Professor Kuenen wrote similarly pessimistic that humanity can only become sustainable with 10 to 100 million people on earth (#56, 1972). All in all, many actors from different ‘sides’ of the fertilizer debate agreed that to even believe in the utopian vision of a clean environment combined with “food for all,” must be considered delusory (#172, 1979). For do we not know, as *Gereformeerde Gezinsblad* reminds us, that “after committing the original sin, there is no more Garden of Eden?”<sup>171</sup>

### 3.5. New diets and biodynamic farming

Bio-dynamic farming had existed since the 1920s.<sup>172</sup> But the green revolution as well as the rise of environmentalism had given ‘bio’ a new relevance. Considering how few and far between vegetarians and biological farms were in Dutch society of the 1970s, it is quite remarkable how much space these actors and ideas took up in the discursive fertilizer dispute in Dutch newspapers.

#### *Biological farming: soil, sustainability and environment*

In terms of material actors, one might frame the fertilizer dispute as a conflict between fertilizers and (composted) manure or chemicals and compost. Subject of debate was the health, structure and resilience of the soil (1). Criticisms concerning the environment (2) oddly ranged from pollution caused by fertilizers all the way to pollution caused by manure. In parallel to that discussion, Dutch newspapers offered a variety of answers to the question of whether or not there was enough (healthy) organic material to ‘fertilize’ all crop fields (3) and how productive and economically viable biological businesses could be (4).

Firstly, the issue of soil-quality was not technically controversial. Even professor Schuffelen, one of the most prominent public proponents of fertilizer-use throughout the first post-WWII decades, acknowledged in 1955 that fertilizers were limited in sustaining a healthy soil structure (#4). Interestingly, as early as 1952, an article from *Algemeen Handelsblad* already discussed this ‘need’ for a diversity of organic material. The city of The Hague, it claimed, produced household compost for 10.000 hectares of land around the city (#1). In *Vrije Volk* (1953) a similar argument was made, stating that for a healthy soil, also important for economic interests, recycling Dutch city-household waste would be necessary (#3, 1953). Sadly, that project never really moved past its childhood stage.

However, despite this foundation of agreement, what became a central matter of public controversy in the debate about bio-farming was the long-term effects of fertilizers on soil-sustainability. Engineer Van Bergum spoke about the vicious circle of agricultural chemicals. Lower resilience of the soil invited more plant diseases, leading to the need to use more chemicals, which lowered the resilience of the soil even further (#17, 1966). A decade later, journalist Lambiek Berends interviewed the Cuperus brothers on their dairy farm, to illustrate biological alternatives in practice. They had noticed that fertilizers took away the herbal diversity of their pastures. But what had worried them even more was that more

---

<sup>170</sup> “Een luxe hobby,” #103, 1974.

<sup>171</sup> “De mens kan geen Hof van Eden meer beginnen, na de val van de mens,” #57, 1972.

<sup>172</sup> H. Zander, *Anthroposophie in Deutschland: Theosophische Weltanschauung und Gesellschaftliche Praxis 1884 – 1945* (Göttingen: Vandenhoeck & Ruprecht, 2007): 1581.

fertilizers were needed every year to keep good result (#167, 1978). From that perspective, common sense demanded to stop such slippery slope madness.

While in the early 1960s, careful critics of fertilizer-use were often willing to compromise, merely pointing out its excessiveness and careless application (#10, 1961), in later years a more radical rejection of fertilizers was commonly seen in the news. Van Bergum wrote: “Fertilizers will be the death of humanity (#17).”<sup>173</sup> Ecologist De Smidt (UU) explained that it would be “catastrophic” [catastrofaal] if soil-life (micro-organisms) had already been destroyed beyond the point of no return (#68, 1972). The horticulturalist Jan Schrijver agreed and shared his experience in a reader’s letter, telling us that his soil-life had managed to recover “after four years of using manure instead of fertilizers.”<sup>174</sup> Due to the health of his soil, he claimed, no chemical poison was needed anymore. Marianne (last name unknown) argued in another reader’s letter that nothing is better than manure since “fertilizers are not natural.”<sup>175</sup> While this is a well-known fallacy, it also represents an intuition that was probably not uncommon among Dutch newspaper readers. What counted as ‘natural’ and why that was to be preferred, could be an interesting issue for agnotological interpretations.

Secondly, accompanying such soil-sustainability worries were environmental criticisms of fertilizer pollution. J. ten Houten (WUR) warned publicly as early as 1966 against the use of fertilizers, considering them a threat to the bio-environment (#16). Ton Jacobs wrote the first explanation of surface water nitrification to be found in my selection of newspapers, in 1969 (#23). Other environmental concerns have already been mentioned in earlier paragraphs. Adding to those debates, in the early 1970s, a public quantification battle between different scientists was about how significant agricultural contributions were to environmental pollution. While acknowledging the environmental problem of nitrogen-pollution, the scientists C. Sluijsmans and G. Kolenbrander were referenced in *Nieuwsblad van het Noorden* to argue that farms only contributed a small part of it (#32, 1970). In other words, conservationist policies should not consider agriculture its primary target. In contrast, professor Kuenen claimed that agriculture and traffic were the most significant causes of pollution with poison, lead, salt and fertilizers (#37, 1970).



Figure 19. On the left: Professor J. de Smidt, ecologist at Utrecht university, shown by *NRC* (#68, 1972). On the right: “The apocalyptic prophecy of a biologist: An experimental farm on the campus of Utrecht university,” shown by *De Volkskrant* (#138, 1975).

<sup>173</sup> “Het gebruik van kunstmest betekent de dood voor de mensheid,” #17, 1966.

<sup>174</sup> “Na vier jaar bemesting met stalmest,” #130, 1974.

<sup>175</sup> “Kunstmest is niet natuurlijk,” #170, 1979.

For those agreeing that agriculture was a significant source of environmental pollution, the ‘best solution’ nevertheless remained a fiercely battled matter of controversy. This discussion also provided one of the most obvious examples of ideological selectivity. Engineer M. Wagenaar had come to the conclusion that agricultural methods needed to be developed for limiting fertilizer pollution but failed to even mention that such a system already existed (#30, 1970). Bio-farming was often simply ignored as an opportunity for further research and innovation. It was easier to imagine highly technological methods that would be called precision farming about a decade later. But for other public actors such as De Smidt (#68, 1972, see figure 19) or Cornelius (#83, 1972), biological farming, as an agricultural method without pesticides and fertilizers, sustaining the health of the soil, embodied the most promising ‘solution.’ Cornelius and Tinbergen (#165, 1978) called for a large societal experiment, transforming 10% of all farms to a biological business for a few years and give scientists a chance to gather proper amounts of confident data.

For other scientists, such curious indecisive open mindedness was unnecessary. A. Schuffelen (WUR) spoke in his farewell-speech of the “since long disproven nonsense” that is still being told and written about fertilizers.<sup>176</sup> He felt the need to warn society against the prophets of alternative farming and claimed that, corrected for the same crop yield, fertilizers pollute the environment less than manure. The FAO had also publicly made it known that abolishing fertilizers would lead to more environmental damage since an overall decrease in agricultural efficiency meant that humanity would have needed to exploit a much larger surface of arable land (#119, 1974). In these ways, people kept talking past each other in public discourse, constantly misunderstanding and misrepresenting the logic of the bio-farm, that needed to come along with changes in diet culture, waste culture, and consumption.

#### *Biological farming: Productivity, and alternative business-models*

That brings me to a third controversial issue associated with biological farming. If fertilizers were to be replaced by compost and manure, would there have been enough of those materials to ‘fertilize’ all crop fields? De Smidt pointed out in a 1975 *Volkskrant* article that if all farms turned ‘bio’ there would not be enough manure (#138). As mentioned earlier, that meant green kitchen-waste (and human excrements) from the cities needed to be composted, recycling nutrients/minerals. While in the 1950s plans had been made to nationally organize composting installations (#1), by the end of the 1970s, C. Caljè observed that huge amounts of organic trash were lost (#165, 1978). One of the issues was that too many heavy metals, plastics, and pollutants from washing detergent and human medicine ended up in trash-bins or sewages, for its content to be used in agriculture (#134, 1975). De Smidt concluded that recycling of nutrients would require more governmental control and laws about the disposal of poisonous household substances (#138).

However, while these were important issues for an ideological dispute, in practice, worries about the availability of alternative organic material seemed somewhat ironic or utopian given that at the time, animal excrements (‘gier,’ i.e. the mix of urine and dung), was ‘produced’ in such amounts that the agricultural industry did not know what to do with it (#67, 1972). Bringing non-composted (!) manure on the land, it was broadly agreed upon, was much more environmentally problematic than chemically produced fertilizers. Therefore, as farmer Arie Schermerhorn freely admitted, ‘gier’ was dumped into the canals around the farm, causing terribly senseless forms of environmental pollution. C. de Wit, in an attempt to ‘deal with this *waste-product*’ argued that “it would be cleanest to dump all the animal excrements [from the bio-industry] somewhere into the ocean.”<sup>177</sup> That would prevent it from

---

<sup>176</sup> “Al lang achterhaalde onzinnigheden,” #110/#124, 1974.

<sup>177</sup> “Mest dumpen in zee is het schoonst,” #57, 1972.

ending up in Dutch nature. Provided this context, it was a little nuts to worry about a lack of organic material that could potentially replace fertilizers. Conventional farmers were (sometimes literally) drowning in it.

The fourth and last controversy directly concerning alternative agriculture, was its productivity and, with that, on the one hand its potential to feed enough people, and on the other hand the economic viability of a biological business (see figure 20). On these points, in the last part of paragraph 3.4, I have presented the criticisms of alternative farming to be found in Dutch newspapers of the time. Here, I present its defence. The reason for this sectional split-up is historical. In discussions about agricultural efficiency, criticisms of bio-farming-efficiency were often written in a discursive context of green revolution rhetoric and population-growth issues, while proponents of bio-farming efficiency tended to write in the context of environmental pollution or specifically Dutch socio-economic interests or visions.



Figure 20: Drawings of idealized bio-farming gardens in the news. On the left: “Attention for bio-farming is growing,” published in *De Volkskrant* (#139, 1975). Drawing on the right was shown in *Gereformeerd gezinsblad* (#155, 1978).

In the second half of the 1970s, the claim that bio-farms were almost as productive per surface area as conventional farms had become a regular *presence* in the news.<sup>178</sup> In the period before, proponents of bio-farming expressed less certainty on this point and fell back on a language of potential. De Smidt argued in 1972 that it was unfair to think of alternative farming as ‘just’ traditional, primitive, out-dated, old-school methods, that do not utilise scientific insights (#68). Learning from the sustainability principles of the past is not the same thing as copying old methods. De Smidt also pointed out that it was unfair to compare alternative farming with conventional farming since the former had not yet profited from years of technological innovation and scientific research. Machines, specifically designed to support the bio-method of farming, like weed-cutters, might level the playing field (or aker) in the future, also making alternative farms less labour-intensive.

In 1972, minister of agriculture P. Lardinois had issued a research commission to investigate the potential of bio-farming in the Netherlands. John Wessel reported on this news in *De Telegraaf* (#70). He had figured out that 25 biodynamic farms could already be counted within the country and remarked, similarly to De Smidt, that mechanized bio-farming, on larger scales might be an interesting innovation for the future. About a year later, the conclusions of this research commission were published, among others, in the *NRC*, carefully confirming the potential of bio-farming as being nearly as productive as conventional farming (#94, 1973). In addition, for this thesis the more interesting conclusion was political. The commission wrote that representatives of conventional agriculture needed to start taking

<sup>178</sup> See #68, #138, #164, #167.

alternatives more seriously as to incentivise more scientific research on its possibilities (#94). The unknown author of this newspaper article remarked that thus far the university of Wageningen (WUR) had considered bio-farming mystic, occultists, and unscientific, not worthy of too much academic attention. That changed throughout the 1970s, leading among others to the publicly presented research by R. Nauta, mentioned earlier (#175).

However, despite developing insights into the productivity potential of bio-farming, scepticism about the 'bio-farm' as a viable business was based on a wider set of worries and doubts. One of the issues was that farmers had to compete for who could produce the most food for the least amount of money, making high quality nutrition available to a general public against a low price. Even assuming that bio-farms could reach the same or a similar productivity per surface area as conventional farms, it does not follow that bio-farms also have the same productivity per hour of human labour.

J. Cleveringa explained in *De Volkskrant* that bio-farmers like the Cuperus brothers could manage a viable business by saving expenses for technologies, quality animal feed (since their own pastures are healthy enough), fertilizers and pesticides (#167, 1978). Therefore, while they had more labour-costs per hectare, their finances added up positively. Moreover, the farm of these brothers also locally made its own cheese, selling directly to consumers in the farm-shop (#167). Cutting out the costs of supermarkets, bio-farms managed to survive even within a market defined by a capitalist logic, by serving well paying customers. That bio-farming was not a joke had already been noticed by successes in the US. In 1972, *Tubantia* published that 300 million dollars in revenue had been made by bio-farmers ('organic') at the other side of the Atlantic (#78). One of the interesting insights was that due to changing demands by consumers, supermarkets were willing to make deals with bio-farmers, even if they sold their food for higher prices.

One additional common argument for bio-farming in Dutch newspapers was its chances for offering more employment on the country-side (#17, 1966). Someone who signed themselves as R.J.K. wondered in a reader's letter why the efficiency of modern farms was needed in a society with so much unemployment (#142). Farmers could emancipate themselves from exploitive capitalist relations and get paid by consumers more directly. With that, one gets an idea of what the bio-business model looked like. But this already shows its dependence on a different kind of consumer, a wealthy one, which links to another multi-dimensional issue of controversy: diet. However, again, the risk was, and is also here, to discuss the advantages and disadvantages of bio-farming within the framework of a capitalist and technocratic society. An understanding of bio-farming as a technology that needed to be embedded within an alternative economic ideology had found its way into Dutch news at the time.

#### *Visions and lifestyles for an alternative society*

Bio-food, as we saw above, could count on criticisms of elitism. With that, also the so-called reform shops (see figure 21) that sold it, were regularly criticised for being elitists in Dutch newspapers (#168, 1978). Only the rich could buy healthy food. Perhaps ironically, the same criticism did not only come from proponents of conventional agriculture. The *Kabouters*, an activist collective, also criticised reform shops for making unnecessarily large or simply unjustified profits (#45, 1971): An unusual alliance between technocrats and anarchists. However, others argued that the costs for bio-food were not that high. John Wessel remarked that young people, for whom bio-food became fashionable (#53), bought such food "instead of stuff you don't really need."<sup>179</sup> Thus, Wessel concluded, this new lifestyle was not entirely

---

<sup>179</sup> "jongeren – beschikt men vaak juist niet over veel geld. Men laat er genotmiddelen voor staan," #70, 1972.

a matter of wealth, it was also a matter of mentality. Besides, on a societal level, as ecologist De Smidt argued, the price of food was not calculated in the right way (#68, 1972). Conventional farming, he argued, was more expensive for society due to all the negative consequences of environmental pollution. As such, we come full circle and the idea of the bio-farm had been explicitly related to ideological criticism. The *Kabouters* probably agreed.

Journalist F. Groeneveld added that at an early stage of transitioning, elites paying more for bio-food simply helped to finance pioneers of a different agriculture that would be cheaper in the future (#115, 1974). In contrast, RIVO director professor Korringa, thought the macro-biotic diet was a joke: “paying more money just to eat an apple including a worm (#48, 1971).”<sup>180</sup> Apparently, he preferred his fruit without worms. Historically it is somewhat funny, I think, that worm-containing food was considered elitist: An unpredictable turn of contingent events.



Figure 21. On the left: A ‘reformshop’ selling bio-products or “full-fledged food” shown in *De Tijd* (#45, 1971). On the right: Sietz A. Leeftang, founder of the *Kleine Aarde*, shown by *Trouw* (#72, 1972).

One of the more regularly discussed diets was vegetarianism. In the sense of providing enough food for the world with a lower environmental impact, eating less meat was discovered to be a ‘solution’ to the dilemmas of less efficient bio-farming, in Dutch newspapers of the 1970s. The FAO concluded that animal feed (beans, corn, wheat), if consumed directly rather than ‘through’ livestock, could provide the protein needed to end starvation/malnutrition in the world (#134, 1975). Sietz Leeftang (see figure 21) explained this is possible since for one gram of meat, eight grams of plants needed to be grown (#72, 1972). As a result, the average US citizen used more than six times the amount of wheat compared to an average inhabitant of the ‘developing world’ (#129, 1974). Thus combining vegetarianism with bio-farming made lots of sense, starting to add more ideological interdependencies between different societal practices and phenomena. Lucas Reijnder publishing in the *Volkscrant* of 1974 added the relevant issues of animal ethics (see figure 22).

A second lifestyle and diet related discussion concerned fertilizers in agriculture and medical health, including nutritional value of food and animal resilience. The farmer Arie Schermerhorn argued that since milk produced with fertilizers tasted no different, the quality of conventional food must have been the same (#67, 1972). His intuition was backed by scientists J. Witschi and F. Stare from Harvard school of public health, referenced by Steven

<sup>180</sup> “die vele guldens meer betalen omdat ze dan een echte appel compleet met worm kunnen consumeren,” #48, 1971.

de Winter in the *NRC*. According to De Winter, health arguments against the use of fertilizers are “bullshit or quackery.”<sup>181</sup> The scientists explained that only the genetics of plants and the molecular constitution of the soil determine the nutritional value of food (#113). Engineer J. van Riel also wanted to debunk some superstitions in his reader’s letter by pointing out that fertilizers are not poisonous (#51, 1971). Actually, a decade before that, dr. J. Spaanders, director of the national institute for public health, was referenced in a report of the *Nieuwe Haarlemse Courant* to express concerns for potential health risks of fertilizers left on human food (#13, 1962). But apparently, in the 1970s, such worries had been overcome.

What makes this issue interesting is the way it showed different conclusions, again, between a reductionist and a (ideological) holist analysis. It is probably correct that any type of crop, grown under exactly the same circumstances with the only difference being that one gets manure and the other fertilizers, does not get more or less tasty or healthy. But as an unknown person in a reader’s letter pointed out, conventional agriculture, associated with fertilizers, had selected crop species mostly on the basis of their growth efficiency, which may have reduced their quality, since the latter was not high on the list of criteria (#162, 1978). Consequently, an analysis of the system around fertilizers, rather than merely some technical characteristics of fertilizers, may lead to different conclusions about whether or not fertilizers ‘reduce’ the nutritional value of crops. So when (proponents of) bio-farms made the claim that ‘their’ tomatoes “taste better and have a higher dry-weight,” that might just have been because ‘they’ were growing a more tasty species of tomato, which had nothing to do with the kind of fertilization.<sup>182</sup> Except that, through ideological logic, it had everything to do with it.



Figure 22: Slaughtered pigs shown in *De Volkskrant* (#127, 1974)

One other aspect of health-issues around fertilizers concerned livestock. Professor Seekles, a veterinarian, wrote in 1956 that a fertilizer induced higher production of grass led to less healthy feed for livestock who then became more susceptible to diseases (#7). His proposed solution to this problem, in line with the work by Grashuis, was giving animals a rationally calculated amount of quality feed in addition to their pasture diet.<sup>183</sup> Bio-farmers as the Cuperus brothers and esquire Van Nispen van Sevenear (see figure 23) found their animals,

---

<sup>181</sup> “Voesselkwakzalverij,” #113, 1974.

<sup>182</sup> “Smaken beter en hebben een hoger droge stof gehalte,” #70, 1972.

<sup>183</sup> See F. (Floor) Haalboom, “De man die de Nederlandse bio-industrie van voer voorzagt.”



walking in bio-pastures, to be perfectly healthy without additional compound feed (#167, 1978). While the former found a technical solution (compound feed) to symptoms caused by other technologies (fertilizers), the latter took away the technology that caused the problem in the first place.

Lastly, a third aspect of new diet-lifestyles concerned with ‘the environment’ was its fashionable spirituality. While this is historically a huge and complex theme, also relating biodynamic farming to occultist practices, as mentioned in chapter 1, the Dutch newspapers in my selection were relatively untouched by it. If superstition was mentioned, it was usually by its opponents/critics. An author in *De Tijd* wrote that “the Woodstock-youth had religiously become vegetarian,” being under the influence of eastern religions, meditation, Zen Buddhism and the macro-biotic diet.<sup>184</sup> Jos Klaassen argued in the *Volkskrant* that the macro-biotic diet had become relevant because of environmental pollution (#80, 1972). But he was quite suspicious of the spiritual practices of the diet’s inventor, Japanese guru George Ohsawa. Even those speaking in defence of the more occult sides of bio-farming or vegetarianism, tended to do so pragmatically. J. Mook wrote in defence of biodynamics that we should be happy that there are people who criticise chemical agriculture rather than stigmatize alchemist superstition (#107, 1974). Perhaps by formulating it this way, Mook was not entirely successful in practising what he preached. Bart Edel, also writing in defence of biodynamics, argued that although the ‘philosophical’ side of anthroposophy might not speak to everyone, at least it gave some acknowledgement to the fact that environmental friendly farming is not just a technological issue but also a question of mentality and culture. Indeed, the relationship between occultisms and ideological criticism of modernity is historically meaningful.<sup>185</sup>

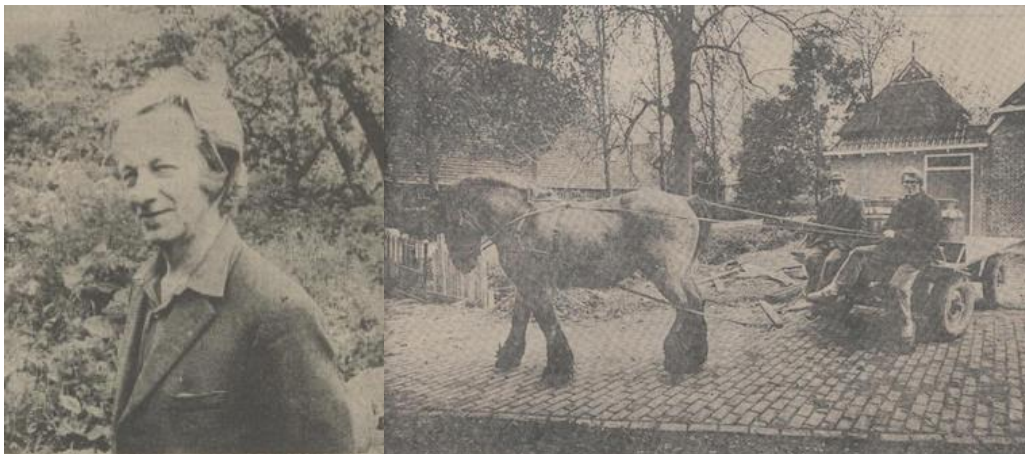


Figure 23: Bio-farmers in the news. On the left: Esquire Van Nispen van Sevenaer, shown in *NRC* (#68, 1972). On the right: Horse pulling the Cuperus brothers, shown in *De Volkskrant* (#167, 1978).

#### *Conventional farming perspectives*

Although the critical voice of proponents of conventional farming in Dutch newspapers was presented on several occasions throughout this chapter, ‘their own’ position has not been shown independently. What we have seen so far is a concern for feeding the world, requiring efficient agriculture, and an eco-modernists stance, *avant la lettre*, on environmental issues, considering high efficiency on less surface area the best way to provide ‘nature’ with more space. Criticisms of elitism and superstition, apart from direct disagreement about matters of

<sup>184</sup> “De Woodstock-jeugd? Die wordt, met een schier religieuze bezetenheid, vegetarisch,” #44, 1971.

<sup>185</sup> A. Owen, *The Place of Enchantment: British Occultism and the Culture of the Modern* (Chicago: University of Chicago Press, 2004).

fact, have also been discussed before. Here a few more interesting arguments and ideas on the ‘conventional’ side of the debate about agricultural method.

According to engineer H. van der Molen, ex-director of the office for Dutch fertilizer industries, who’s book was reviewed by Wouter van Dieren in the *NRC*, modernization must be thanked for making Dutch agriculture competitive, food affordable, and landscapes beautiful (#163, 1978). Indeed, it is interesting to note the rhetoric used by fertilizer-proponents. Fertilizers were regularly claimed to be good for almost anything. One article in *Gereformeerd Gezinsblad* mentioned that fertilizers provide higher crop yields, fewer crop diseases, less labour-intensive agriculture, less crop failure, lower prices, and a high quality of food (#57, 1972). Also, imagine how poor Dutch people would have been, had they not benefited from fertilizer-use. The *Leeuwarder Courant* claimed that 25% of Dutch export depended on it. “With those 7 billion *gulden* we can buy cars!”<sup>186</sup> Fertilizers were also considered very useful for private gardeners, helping them create beautiful lawns (see #2, 1952, or #6, 1955).

Another remarkable tendency of fertilizer-proponents was to publicly argue that conventional farmers cannot really do anything wrong. According to engineer S. Herwijer of the ministry of agriculture, conventional farmers could make an important contribution to environmental hygiene by incorporating their businesses in landscape management projects (#65, 1972). In other words, the government was going to pay farmers lots of money to make sure they would follow the advice of ecologists for the protection of animals and eco-systems, but forgetting to mention that those animals and eco-systems were endangered because of agricultural practices in the first place. Engineer C. Knottnerus, chairman of the agricultural society, acknowledged that animal excrements (*gier*) was carelessly dumped into surface waters by many farmers. He condemned such practices in the strongest terms, calling it “terrible.” But then again, the ones truly responsible for such violent malpractices were “educators and factories, writing bad user-manuals (#54, 1972).” Surely it had nothing to do with saving some unnecessary costs.

---

<sup>186</sup> “Met die 7 biljoen gulden kunnen we auto’s kopen!,” #134, 1975. Note: In 1975, the Netherlands already counted 3 million private cars, more than one-third of today. See: <https://www.cbs.nl/nl-nl/longread/statistische-trends/2019/de-groei-van-het-nederlandse-personenautopark?onepage=true#:~:text=In%201965%20werd%20de%20grens,te%20komen%20op%203%20miljoen> (last seen on 12 July 2023).

---

## Chapter 4: Agnotological analysis

---

*The greatest triumphs of propaganda have been accomplished, not by doing something, but by refraining from doing. Great is truth, but even greater still, from a practical standpoint, is silence about truth. By simply not mentioning certain subjects propagandists have influenced opinion much more effectively than they could have done by the most eloquent denunciations, the most compelling of logical rebuttals.*<sup>187</sup>

In this chapter I present the evidence from my sources to support my claim that (at least) seven different agnotological tools for ideological manipulation can be identified in the public fertilizer-dispute as represented or manifested in Dutch newspaper discourse (1950 – 1980). What I want to understand is how agnotological strategies may have contributed to – and depended on – the polarization of the fertilizer dispute and its reduction into (in)dependent controversies. In paragraph 4.8 I will show in what ways historical actors present in the news had already identified and criticised the uses of those seven agnotological tools within the debate they were themselves participating in. What my analysis will suggest is that criticising agnotological manipulation can itself be a strategy for discrediting your ideological opponents, actively trying to draw new lines between what counts as knowledge and what as ignorance.

Seven different agnotological tools were discussed in chapter 2. These are methods, in part of a discursive or linguistic nature, that have the goal to hide, to ignore, to simplify, to discredit, and ultimately to manipulate into believing that fertilizers should be used, or not, relating to the controversial oppositions mapped in the previous chapter. Paragraph 4.1 relates to paragraph 2.1, and so on until the seventh paragraph. Going back to chapter 2 might be useful at times to refresh your understanding of my reasoning here. Superiority (1), philanthropy (2), necessity (3), epistemological authority (4), certainty (5), objectivity (6), and normalization (7) are the chosen *topoi* of agnotology in this thesis, demarcating the boundaries between technocracy and environmentalism, producing ignorance about delusions/limits (1), intentions (2), alternatives (3), interests (4), urgency (5), matters of facts (6) and ‘the other’ (perspective) (7), as such manipulating the ideological dispute. The average Dutch newspaper reader of the first few post-WWII decades could encounter all of it.

As Michael Smithson pointed out, one of the issues of writing an agnotological history is that the notion of ignorance presupposes that something else is not ignorant and that that something else is known.<sup>188</sup> In this thesis, that issue is partly solved by applying Huckin’s method, looking for discursive *absences* against the background of discursive *presences*.<sup>189</sup> Therefore, throughout this chapter it is also useful to go back to chapter 3 or appendix B from time to time, to notice what was argued for, and by extension, what was left out. The sources tell us what was known by some, and as such provide the criteria for what counted as ignorant by others.

---

<sup>187</sup> A. (Aldous) Huxley, *Brave New World Revisited* (London: Chatto & Windus, 1974). In new foreword of 1946. Originally from 1932.

<sup>188</sup> M.J. (Michael) Smithson, “Social theories of ignorance,” in R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance* (Stanford: Stanford university press, 2008): 209 – 229, 210.

<sup>189</sup> T. (Thomas) Huckin, “Textual silence and the discourse of homelessness,” in *Discourse & Society* 13, nr. 3 (2002): 347 – 372.

Considering how the environmentalist position was politically and socio-economically marginal, and wanting to critically analyse those in power and the mechanisms of dominant ideology, my focus throughout this chapter will be on the ideological uses of agnotological tools by the ‘side’ of the debate that opposes (radical) environmentalist warnings and/or ‘solutions’ such as bio-farming. This choice is not entirely subjective. The use of agnotological tools depends on asymmetrical selectivity that is hidden for the reader. But in order for the reader to understand the text, they depend on basic shared assumptions. What is assumed to be correct, superior, proper, necessary, or responsible, whether the issue is gardening aesthetics, social justice or the authority of science, tends to be determined by the dominant ideology in society. Agnotological manipulation, hiding intentions, interests, alternatives, or facts, is less sensible of a strategy, arguably, for an ideology that is struggling for attention, that wants to convince to change, rather than conserve what is already there. My analysis then, both for reasons of doing critical history writing and based on what could be found in my sources, tends to counter-act the ideological asymmetry of agnotological manipulation.

#### **4.1. Superiority: Delusions, apathy and lunacy**

Lunatic opportunism as a way of hiding incompetence and limits, had its place in the fertilizer debate but not often in an evident manner and only sporadically. Throughout chapter 3 several examples could already be seen of incredible trust in the superiority of modern science as well as carelessness about nature. Dumping animal excrements into canals or directly into oceans (see 3.3), and spreading Western agricultural technologies to regions with different soil types, climates, and traditions (see 3.4), were both called out by critics as incompetent and violent. Against the background of that debate, it is interesting to see some of the rhetoric, using claims of superiority in defence of what others would call lunacy. But this paragraph will be a bit shorter considering the relatively small amount of material to work with.

P. Jongeling, a writer for *Gereformeerd gezinsblad*, a Christian newspaper, expressed sympathy for environmentalist goals. He argued that the Christian faith also contained a responsibility to take care of nature, emphasizing the human role as land-steward (#131, 1975). However, according to Jongeling, the Club of Rome and others were wrong to think they had the superior power to predict the future. The Christian duty to do as nature demands, “to be fertile and multiply yourself,” was set in stone, or rather holy scripture.<sup>190</sup> With such criticism, Jongeling spoke out against attempts at societal birth control. For him, it was not up to us to try and mould the future. God decided what was natural or not. In my mind, following the same logic, Jongeling should also have spoken out against the use of fertilizers, which are also not mentioned in the Bible. But then again, Jongeling explicitly did not fear disasters or apocalypse. The day of the Lord will come anyway, no matter what we do, and the world will end in fire. As such, the Christian position of Jongeling was oddly double edged, criticising the scientific moral entitlement of environmental alarmists, while also finding the best excuse for opportunist modernization ever invented by humanity: life after death. Decide for yourself whether or not that excuse counts as lunacy.<sup>191</sup> But I argue it was at least hypocritical, selectively hiding the urgency of environmental worries behind the trust in God, and cunningly hiding his own ideological position behind religion.

The issue of how to deal with animal excrements was a grateful theme for superiority rhetoric of agnotological nature. Researchers Van Grinsven and Van Eerdt pointed out that from the 1970s onwards, manure or ‘gier’ (mixture of dung and urine), had become a waste-

---

<sup>190</sup> “Wees vruchtbaar en vermenigvuldigt u!,” #131, 1975.

<sup>191</sup> Personally I know of one or two Christians who would probably also disagree with Jongeling on this point.

product in the minds of many agriculturalists, farmers and representatives alike.<sup>192</sup> For some, like John Wessel, a journalist for the *Telegraaf*, that new definition of manure was unacceptable (#119, 1974). Not because he argued in favour of bio-farming, on the contrary, but nevertheless because he believed that recycling all minerals, including green kitchen waste, was a good idea. And the more animals, the more manure, the more recycling, perfect! Wessel wanted the best of both worlds, completely disregarding that the growing use of fertilizers had made recycling of manure obsolete, turning it into environmentally polluting waste. Such opportunist rhetoric may have contributed to ignorance about how agricultural modernization caused environmental damage.

Optimism was more generally something to look out for. Hiding limitations and incompetence behind superior human ingenuity was not uncommon. The GMO scientist Jan Bruinsma did not think decreasing soil resilience or long term fertility loss of arable land was problematic at all (#24, 1970). In his opinion, modernization of agriculture could continue without worries since in the future, agriculture could be done without any soil, just growing crops in water cultures or gravel. In a similar fashion of futuristic wishful thinking, professor Fred Polak, in an *Algemeen dagblad* interview, expressed the thought that environmental pollution and resource depletion was not a big problem since endless nuclear power would allow humanity to filter all resources needed out of the ocean (#55, 1972). Population growth would also be unthreatening in the future since, according to Polak, humanity could colonize the bottom of the ocean, living in big waterproof tunnels. Such rhetoric made environmentalism seem so pessimistic. Nothing was a problem when your belief in science and innovation was strong enough.

Disregarding the importance or complexity (and unpredictability) of nature, was one last type of argument used to produce ignorance about human incompetence. RIVO (Dutch facility for fishing research) director professor P. Korringa argued that the sea exists to “fish, sail, swim, and to dump waste.”<sup>193</sup> According to his scientific analysis, all the waste of all humans in the world of one day, would not make a measurable difference when thrown into the north sea (#48, 1971). Not a very impressive logic. But besides the number of fallacies, even if all the waste of an entire year would not lead to measurable results, it would still be an incredibly opportunistic, delusional thing to do. Korringa’s rhetoric selectively disregarded everything about environmental pollution that other authors (see 3.3 and 3.5) had tried to bring into public attention. Disregard for nature and a superiority-complex came to a peak when Jan van Luyn wrote in *Nieuwsblad van het noorden* that it would be best to drain the Waddensea and turn it into a recreational park (#90, 1973). All in all, ideologically manipulative production of ignorance in Dutch media definitely included the first out of seven agnotological tools in its repertoire.

#### **4.2. The banality of dependence**

Sheep-like delusions justifying power relations, produce ignorance about oppression and alternative options. In paragraph 3.4, we saw that the debate around the green revolution as a charity project had been severely controversial in Dutch newspapers. Somewhat similarly, the trap of the modern farm, social disintegration of the country side and debt dependencies of conventional agricultural businesses were also discussed in paragraph 3.3. Against the background of that debate, it is interesting to further analyse some of the rhetoric that enabled this agnotological tool of sheep-like dependency. This paragraph will also be a bit shorter considering the relatively small amount of material to work with.

---

<sup>192</sup> H. van Grinsven and M. van Eerd, “Dertig jaar mestbeleid,” in *Bodem* 6 (2020): 20 – 22, 20.

<sup>193</sup> “[...] om te vissen, zeilen, zwemmen, en afval te dumpen,” #48, 1971.

The NVZ (Dutch soap industries) had come up with an advertisement campaign that was published in at least ten different newspapers in 1971 (#53). Their public relations team had found itself with the problem that a rumour had spread about the environmental damage caused by washing detergent containing phosphates. A product called soft soap had become a somewhat fashionable ‘environmentally friendly’ alternative. The advertisement started with a little transparent framing, pointing out that most mineral pollution was caused by agriculture and human toilets, not soap (see 4.7 for the framing game). But the more important argument relied on the rhetoric of dependency. Soft soap, nicely staged as the only alternative to NVZ washing detergent (see 4.3 for false oppositions), was supposedly not suitable to modern washing machines. Washing without phosphates, according to the advertisement, would mean less hygienic washing, less clean clothes, and a shorter lifespan of your washing machine. And thus, the reader was led to believe, you do not have another choice. Modern technology comes with a price. Naturally, NVZ was the most reliant source of information on alternatives (excuse my irony). Follow the leaders, they will know what is best for everyone.

This kind of rhetoric can be recognized whenever modern technology or method is not argued for, but simply stated as given or conditional, which makes it ideologically manipulative. The reader was supposed to feel confirmed in what they already believed. In the case above that was: The use of washing machines is vital no matter the consequences. Such logical conditions uncover ideological dependencies.

A similar case occurred in the *Leeuwarder courant* of 1975 (#134). An unknown author expressed his or her frustration with environmentalist critique putting arguments on their head. According to the article, unemployment of farmers was not caused by upscaling and land consolidation. On the contrary, such modernization had been necessary to prevent all farmers from losing their jobs in a highly competitive market. In addition, land consolidation [ruilverkaveling] and landscape reforming was not done to increase efficiency (neither of human labour costs nor of crop yield per surface area). Rather, without land consolidation, farmers would be forced to destroy their expansive heavy vehicles on small and bad roads of the past. Clearly, what the author of this article had missed was that a highly competitive agricultural market was itself part of the modernization development. The same, of course, goes for the newly financed heavy machinery that needed better, straighter and larger roads. By grounding their rhetorical logic in the assumption that these elements were conditional no matter what, they managed to discredit environmentalist logic, and produce ignorance about the subject of ideological dispute. Modernity was assumed to be self-explanatory, and thus ironically, this author was the one who put arguments on their head. *Tu quoque*.

One last example of the dependency tool for producing ignorance, concerns diet and global impact narratives. A 1974 speech by minister of agriculture A. van der Stee to a general assembly of the Christian farmers society in Tilburg, was referenced by an article in *Limburgsch dagblad* (#110). The minister reassured the farmers that no policies would be made to reduce meat consumption in the Netherlands. According to Van der Stee, reducing consumption and production of meat in the Netherlands would have barely any positive impact on a global scale or in the ‘developing world’ specifically. Without international cooperation in the matter, it would be senseless and unnecessary. In other words, since the rest of the world (or EEG) was eating and producing lots of meat, ‘we’ could do it also. Probably there is no better example of explicit sheep arguments in all of my sources.

What makes this case even more interesting is its asymmetric relation to the necessity arguments of modernizing agriculture in the Netherlands (see 3.4 and 4.3). When environmentalists argued that Dutch agriculture would not make a significant difference in ‘solving’ world hunger, and that extremely intensive fertilizer-use in the Netherlands was thus not justifiable on the basis of its supposed global necessity, they were ignored. Despite its similarity to global necessity claims about fertilizer use, a global ‘need’ to reduce meat

consumption, remained unrecognized. But perhaps global ‘needs’ only count when some other, hidden interests play a role? Arguably, the dependency argument was used hypocritically biased by Van der Stee, in favour of a dominant ideology. As such, ignorance was produced about its banality.

#### **4.3. The missing comparison: Absences and the claim of necessity**

Necessity is a powerful agnotological framework, especially when combined with global standardization (narratives). The way various issues of controversy, societal problems, and technologies are considered interdependent or not, i.e. the reduction of the dispute, is itself an ideological structure that creates necessities and missing comparisons. Absences, especially absent logical relations, created by a reductionist ideology dominating the thematization of news production, create a meta-level type of ignorance and manipulation, as was discussed in chapter 1. Both the idea that everything is related, that solving one problem must necessarily go together with solving another, as well as the idea that various problems are not related and can be solved independently, can be used to produce ignorance by failing to compare.

By the end of paragraph 3.2, I asked whether the selectivity of independently discussed literatures could be agnotologically understood as ideologically manipulative. Throughout chapter 3, a number of controversial issues have come up in support of this hypothesis. Many of those arguing in favour of biological farming, social reform (fairly distributing the autonomous means of production), and environmental protection or conservation, had found themselves a common opponent: technocracy. For those arguing in favour of agricultural modernization, it was not rhetorically advantageous to accept such ideologically holistic relations.

The reduction of the debate into five different concerns was thus itself a means of producing ignorance about their ideological interdependencies. That is an important conclusion of this thesis, providing the evidence for ideological polarization, but not a very original insight. Historically, it is much more interesting to show how that debate was performed in the media, rather than why. What rhetorical devices of producing ignorance about diversity and interdependences were applied in the news (see 2.3)? How could a reductionist ideology sustain its vision of independent problems as dominant, despite so much criticism of it? To answer that last question speculatively, providing some evidence of agnotological rhetoric, notions of necessity, false oppositions, global standards, and missing comparisons, (discursive) tools for producing ignorance, play a central role in my analytical approach.

Literally missing comparisons have quantitatively been shown in figure 8 on page 48. A few more examples deserve a mention. The FAO yearbook for 1975, a randomly chosen edition, does not mention bio-farming.<sup>194</sup> Many pages of global data on agriculture, trade in its products, and an analysis of distributions and developments, by the mid-1970s, did not include even a little information on the growing popularity and growing socio-economic relevance of bio-dynamic farming. Similarly, the lustrum history book of NSM (Dutch nitrogen society), celebrating fifty years of fertilizer industries in the Netherlands, also does not mention bio-farming. The book is a 170 pages of success story. Even the chapter about the future, written in 1979, does not mention possible changes. It is speculated that by the year 2029, at 100 years NSM, fertilizer production rates will become even orders of magnitude higher.<sup>195</sup> Total silence about the growing popularity of an agricultural method that

---

<sup>194</sup> FAO agriculture series, *The state of food and agriculture 1975: A mid-term review and appraisal* (Printed in Italy, 1976).

<sup>195</sup> Pol Puype, Guido Beauchez and Menno Jongsma, *Van Kiem tot Korrel* (Beauchez, 1979): 168. Published on the occasion of 50 years Dutch nitrogen society (NSM) N.V. 1929 – 1979.

does not want to use (chemical) fertilizers, whether intentional or not, by the end of the 1970s, was a clear sign of ideological bubble-forming at best, manipulation at worst.

In the news, the omission of the bio-alternative was at times noticed and explicitly justified. Content-wise, the argumentation against bio-farming was discussed in paragraphs 3.4 and 3.5. Here, my focus is on the (rhetorical) way missing comparisons were used to discredit and produce ignorance. Sometimes, it was more simple. For example, F. Groeneveld wrote in *NRC* (#112, 1974) that reducing the economic output of Dutch agriculture would force the country to invest in (other) industries, which would also be environmentally polluting. So no matter what you do, pollution will happen and we might just as well keep doing intensive agriculture. This reasoning is fairly unimpressive. Given that ideas for sustainable industries were already part of the debate during the 1970s (see 3.3 and 4.5), it was probably quite possible for newspaper readers to understand that both conventional agriculture and conventional industries could be replaced, on the long run, by cleaner alternatives. A more complex form of producing ignorance concerns the necessity-claim.

Norman E. Borlaug, agricultural scientist and winner of the noble piece prize of 1970, was referenced regularly in Dutch newspapers. His way of arguing was highly comparative, and precisely because of that, it was so manipulatively hiding the actually relevant comparison. In a 1974 article in *NRC* (#113), as well as in a 1972 article in *Vrije volk* (#83), Borlaug argued that the ideas of “hysterical alarmists,” wanting to significantly reduce the use of fertilizers, were highly dangerous. If brought into practice, not poison but starvation would be the faith of humanity. And asking a rhetorical question, Borlaug wondered who would make sure the poor would get something to eat, “elitist environmental activists?”<sup>196</sup> What Borlaug did, as many other authors in Dutch news, is first create a false opposition. Then he reduces the environmentalist position to elitist practices (see 4.7 for the framing game). And overall, he gives the impression of a comparison but remains so strictly within the logic of his own technocratic frame, that no alternative ideology even stands a chance. And this is how the missing comparison works within a reductionist framework, producing ignorance about an alternative logic that would not only change fertilizer use but also change socio-economic models, diet-culture, build recycling structures, prevent waste, reduce consumption of the wealthy, and develop alternative technologies. Borlaug does not mention any of it.

#### **4.4. *Ad verecundiam*: The normativity of facts**

Superiority claims (4.1) as well as necessity claims (4.3) are examples of normativity. The use of science in the production of normativity should not be confused with the rather related Kuhnian ideas of the value-ladenness of science. What values are used as criteria for good science (rationality) is a normative and perhaps political ‘choice,’ although arguably not therefore entirely subjective or random. But anyway, the established position of science as an authority for rationality and well-founded knowledge, also makes the academic institution normative in a prescriptive sense, providing arguments and evidence for evaluating political ideas. Technological innovations are not politically neutral since there are always some societal groups who will benefit or profit more from such innovations than others. The question is: innovation for whom? Offering up science as a neutral universally valid source of technological solutions, hides and ignores the economic and political interests behind technological ‘progress’ and innovation. In that way, such rhetoric becomes an agnotological tool. In an ideological dispute, “when science becomes the object of public discourse because of its implications for public policy, rhetors attempt to persuade public audiences that they are

---

<sup>196</sup> “Bevoorrechte milieu-aktievoerders,” #113, 1974.



real scientists, or that their opponents are doing bad science.”<sup>197</sup> The hiding or ignoring of societal interests behind innovation as well as the struggle for epistemological authority is topic of this section. Examples from my sources are legion.

To underscore the academic authority of the people quoted and referenced in – or writing – articles, newspapers rarely forgot to mention titles as prof., dr., drs. (i.e. a masters degree, not to be confused with a double PhD), or engineer. Although title-formalities may generally have been more prominent in the past than they are today, even respectfully mentioning titles when speaking of someone’s untitled wife (e.g. mrs. prof. Jansen), such etiquette arguably only enhanced – and signified – the well-established authority of science. Critically questioning the claims of a professor was perhaps too much to ask from the average Dutch newspaper reader.

Prof. dr. L. Seekles, a veterinarian chemist, wrote a piece in *Algemeen Dagblad* (1956) about the effect of fertilizer-use on animal health. Cows only eating homogenous fast-growing grass were not getting the right composition of nutrients they needed to produce ‘enough’ milk. Producing industrial compound feed, thanks to a better understanding of the biochemistry of animal nourishment and digestion, solved these disorders in a “rational” way, preventing the diseases rather than curing them (#7). So, the technical innovation of compound feed was here introduced as the rational solution to the problems caused by fertilizer-use. To many farmers, that may have made sense, possibly not even noticing or being ignorant of the ideological assumptions behind the logic applied by Seekles. ‘Preventing’ the diseases of industrially fed cows, to others meant to stop using fertilizers, taking away the root-cause, rather than depending on more technology. The bio-farmer Van Nispen van Sevenaer became a bio-farmer in 1955. When reading about the research of veterinarian chemists like L. Seekles or J. Grashuis, he agreed with their observations, but came to another conclusion, and stopped using fertilizers on his farm (#118, 1974). Rationality here, became a subjective matter, and not all farmers were manipulated into following the normativity of mainstream science.

The ideological struggle for determining what counted as a rational way of ‘solving’ the problems of fertilizer-use, was hidden behind claims of authority and objectivity (see 4.6). An NVZ (Dutch soap industries) advertisement appearing in several newspapers expressed the thought of solving the controversial debates about environmental pollution: “We want to list the facts to find out how to deal with our worries.”<sup>198</sup> Apparently, the people controversially debating fertilizers and pollution did not know those ‘facts,’ otherwise they would no longer disagree. But of course a washing deterrent company was the right kind of authority to end the discussion. Similarly, the chairman of the agricultural society, engineer (!) C. Knottnerus, was quoted in an 1972 article in *NRC*, saying that “we should not lose sight of reality” by acting as if agriculture can be part of a perfect natural state that is not possible in practice.<sup>199</sup> Naturally, the agricultural society knew best about the ‘reality’ of agriculture. Framing the bio-farm as a perfect natural state was also a strategic form of discrediting ‘the other’ (see 4.7), marking their vision of an alternative ‘reality’ as delusional, idealistic, or utopian.

One of the more persistent figures of scientific authority in the fertilizer dispute of the time was professor doctor A. Schuffelen of Wageningen university. He used his status to publicly make necessity claims relating to world hunger and fertilizer-use (see 4.3), arguing

---

<sup>197</sup> C.O. (Craig) Stewart, “A rhetorical approach to news discourse: Media representations of a controversial study on ‘reparative therapy’,” in *Western journal of communication* 69, nr. 2 (2005): 147 – 166, 151.

<sup>198</sup> “We willen eens alle feiten op een rijtje zetten [...] om eens te zien hoe we uit de zorgen kunnen komen,” #53, 1971.

<sup>199</sup> “We mogen de realiteit niet uit het oog verliezen,” #62, 1972.

that not using fertilizers would mean no food for a global 200 million people (#4, 1955). In the same article in *Eindhovens dagblad* Schuffelen showed some data to back up his claim. The decrease in crop yield caused by a lack of fertilizers [in 1943, WWII] had been estimated to vary between 3 and 50 percent (#4). And thus, Schuffelen remarked “the facts already speak for themselves” about the blessing that fertilizers had been.<sup>200</sup> While close to a fake news type of reasoning (see 4.6) – using a wide, vague and unexplained range in data to prove a point – this example also showed how an idea of objectivity was used to justify or establish the authority of, in this case, the agricultural chemist. A good twenty years later the same professor Schuffelen expressed his disbelief or bafflement about the persistent controversies of the fertilizer dispute that were so unnecessary since his science had already been evident in the 1950s. In an article in *Vrije Volk* (1975) he nostalgically complained that it was no longer experts who had most influence in public debates. According to him good research and education had long made any worries about fertilizers obsolete. “The science is not controversial (#140).”<sup>201</sup> With that, the normativity of the academic institution was barely hidden and used to hide alternative possibilities, arguing in the interests of, among other, industries and a technocratic ideology.

In a more aggressive style of discrediting bio-farming as non-scientific, the journalist F. Groeneveld reported in the *NRC* (1973) that ecologist J. de Smidt had wrongfully accused fertilizer industries of financing a campaign against bio-farming. According to Groeneveld it was not industrial interests but rather the expertise of soil-scientists that had showed the senselessness of bio-farming (#92). Groeneveld’s sources, engineer (!) W. Locher and engineer (!) H. van der Molen, respectively argued that higher efficiency does not lead to lower quality of food. “These are the superstitions of bio-farming,” and “biological farming is no science. It is a religion.”<sup>202</sup> They questioned whether bio-farmers would even be convinced by the results of science (#92). What made this report especially interesting was the way any accusations of serving the interests of a capitalist industry were not hidden or unspoken of. Rather, in a circular fashion, the authority of science was used here to ‘prove’ that the same science was not normative. Interestingly, a year later, Groeneveld published another article in the *NRC* (1974) in a significantly different tone, observing that for alternative farming projects like *De Kleine Aarde* it was difficult to defend against the criticisms of an establishment backed by the university of Wageningen and fertilizer industries (#115). As a consequence of that imbalance or asymmetry in epistemological power the little research done for bio-dynamic farming was often considered not scientific enough (#115). The agnotological tool of scientific authority was here recognized as a method for ideological manipulation.

Indeed, the active attempt to foster and use scientific authority for ideological manipulation was recognized to the point where it became an advertisement strategy (see 4.7). W. Boshuis wondered in an article in the *Nieuwe Winterswijkse courant* (1973) whether those advertisements were working, needed for “a fight about truth and recognition.”<sup>203</sup> According to Boshuis, the agricultural community in the Netherlands spends a collective millions on such advertisements in order to convince the public of its scientific methods. However, as it turned out, other communities like the Teleac workshops about environmental awareness, were actively building structures for environmentalist education and spreading of alternative farming ideas. Teleac, in other words, embodied an alternative epistemological authority. Trying to discredit ‘them,’ silencing their voice, Boshuis claimed that “it is a fiction

---

<sup>200</sup> “De feiten spreken voor zich,” #4, 1955.

<sup>201</sup> “De wetenschap is niet controversieel,” #140, 1975.

<sup>202</sup> “Dit is het bijgeloof van biologische landbouw. [...] Deze is geen wetenschap maar een religie,” #92, 1973.

<sup>203</sup> “de strijd om de waarheid en om erkenning,” #89, 1973.

that farmers use too much fertilizers. Most farmers use exactly the amount advised on the basis of soil-research.”<sup>204</sup> Here again, like in the case of Groeneveld, Boshuis knew no other way of dealing with criticisms than to simply rely on the authority of science. Making the fertilizer controversy into a proper scientific debate would not be a form of agnotological manipulation. However, here, in Dutch newspapers, that debate was reduced to fallacies, simplifications and calling each other names, trying to establish some sort of credibility. In that form, scientific authority does become manipulative. Boshuis wrote that fertilizers do not impoverish the soil which he considered evident from the many birds and micro-organisms that could now flourish in regions that were previously sandy and poor. This was the deplorable level of argumentation used in the public struggle for gaining scientific authority. Trying to reduce whatever the ‘other’ had to say to dumb ignorance and irrational logic was both a discrediting strategy as well as a way of hiding that one’s own position was not neutral or disinterested.



Figure 24: Image of ‘evidence’ for anthroposophical agricultural methods, subtitled with: “Does the moon influence the growth of crops? The radishes on the left were sown on an ‘unfavourable day’. But that does not prove anything (yet).”<sup>205</sup> Published in *Trouw*.

One of the most popular ways of discrediting or ridiculing environmentalist ideas was to frame them as superstitious, perhaps the most ancient of agnotological tools available, ironically used by the church before it was used by science. F. Groeneveld wrote in a third article in *NRC* (1974) that biological pesticides were interesting ideas, but doubted whether it was sensible to spend time and energy on topics like macro-biotic life-radiation or the influence of cosmic powers. Why should scientists set up experiments to find evidence for such things (#112)? Dr. P. de Boer similarly wrote in the *Leeuwarder courant* (1974) that superstition about agriculture is on the rise: “Witches, earth-radiation, bio-dynamic methods, UFO’s, and horoscopes, it is all the same type of thing (#106).”<sup>206</sup> Here again, it was not calling out nonsense *per se* that marks these articles as manipulative. The idea of superstition was used to discredit an entire movement, and a large variety of ideas, not all superstitious, that quite clearly deserved more open minded respect to enable a proper epistemological

<sup>204</sup> “Op dat [bodemkundig] onderzoek is het bemestingsadvies gegrond en daaraan houdt praktisch iedere boer zich. Bijgevolg is het overdreven gebruik van kunstmest een fictie,” #89, 1973.

<sup>205</sup> “Heeft de stand van de maan invloed op de groei van gewassen? De radijsjes links werden op een ‘ongunstige dag’ gezaaid. Maar daarmee is (nog) niets bewezen,” #72, 1972.

<sup>206</sup> “Heksenverbrandingen, aardstralen, biologisch-dynamische landbouw, UFO’s; het ligt allemaal in dezelfde lijn,” #106, 1974.

discussion about agriculture. The ecologist De Smidt analysed that manipulative struggle. He argued in the *Volkskrant* (1975) that it was more unscientific than bio-dynamic farming to not even research the possibilities of alternative agricultural methods (#138). Indeed, the combination of narrowmindedness with a naivety about the capitalist interests that helped produce certain technological innovations (and not others) is what exemplifies this fourth agnotological tool.

#### **4.5. Knowledge as noise: The call for more data**

Expertise and the ‘need for more science,’ data or information, has somewhat of a paradoxical position as an agnotological tool. In principle, it is weird to argue that more expertise and more understanding could lead to more ignorance. That intuition, which is perhaps rather culture-bound, probably explains the popularity and broad acceptance of the classic ‘more-data-needed’ bureaucrats-excuse. The need for more knowledge, in order to make a proper choice, makes sense. But this, it seems to me, is where the tempting thinking error occurs. In society at large, similar to a visit to the doctor, we do not first gather all the evidence exhaustively before we act to save our lives or the lives of others. While some researched environmental damage and more efficient technologies, fertilizers and pesticides were produced in ever growing amounts, spread over the surface of the earth. And thus, arguably, there was not enough time to gather ‘all’ the evidence. The demand for certainty thus hides the urgency to act. It was also unclear why the societal groups in favour of fertilizer-use were not hold to the same standards of certainty. Why should ‘they’ not be the ones to proof with certainty that their products are not dangerous (Popperian dilemma)?

However, this argument could be extended over a slippery slope to claim that no expertise is needed and we should act on any hint that some chemical might be problematic for someone. Such extreme precaution is not a desirable position. We would be afraid of every ghost. Rather, the call for more data can be agnotologically critiqued, when it is presented as a strategy to deal with a problem that is already known or accepted by the rhetor themselves. Such calling for more data is then either naïve or desperate (1), potentially ignorant of alternative explanations for why governments or other societal institutions are not acting urgently concerned; or opportunistic (2), consciously applying the strategy that Oreskes and Conway coined ‘the merchants of doubt,’ constructing – rather than suffering from – ignorance, dragging on the debate forever. Isabelle Stengers predicted that this agnotological strategy could only end when “reality itself stages the proof,” at which point we will depend on the technologies of the same opportunist to save what can still be saved.<sup>207</sup>

First, on the environmentalist side of the debate *Algemeen Dagblad* published as early as 1961 (#10) that more research was needed to prevent unintended habitat destruction for many species of animal. The unknown author seemed unhappy about the dilemma at hand and wrote that protecting nature required an awful categorization of it, but that was a necessary ‘evil’ to make sure to not end up with a boring “homogenous row of plants.”<sup>208</sup> Interestingly, this unknown author did not claim that more data or information was needed to understand – or provide evidence for – ecocide and pollution. Rather, more data was here considered needed to give governments the means of knowing what to protect. Knowledge of nature, in particular the kind of knowledge that can be easily simplified into categories and numbers and quantified predictions, was seen as politically required for environmental(ist) goals. In the *Volkskrant* (#22, 1969) this belief in science as the natural ally of the environmentalist cause was expressed explicitly. As soon as scientific reports would be based on more evidence,

---

<sup>207</sup> I. (Isabelle) Stengers, *Another science is possible: A manifesto for slow science* (Cambridge: Polity press, 2018): 20. Translated by Stephen Muecke.

<sup>208</sup> “dreigt ons land te veranderen in een cultuursteppe, [...] gelijkvormige weilanden, korenvelden en akkers,” #10, 1961.

“politicians will know the consequences of their decisions.”<sup>209</sup> And thus, clearly, more research was requisite.

Again, various historical actors calling for more data, research and ecological science, generally did not do so out of uncertainty or doubt about their concerns for nature and/or the environment. Pollution, loss of bio-diversity, and the agricultural causes (among others) thereof, were not, qualitatively, considered matters of scientific controversy. And yet, as professor Bakker argued, “responsible” landscape management depends on a detailed understanding of nature (#33, 1970. To convince governments, to raise public awareness (#22, 1969) or to determine more precisely the extent of the environmental pollution (#25, 1970), more ecological research was “absolutely necessary.” That ecological sciences were, for their financial needs, competing with other societal interests, seemed to be part of that struggle for getting the knowledge of conservation biologist on the political agenda. More ecological knowledge meant to have a louder voice. Professor Kul warned in the *Nieuwe Haarlemse courant* about the strong lobby of the “economic sector” (#13, 1962). Professor *Lanjouw* also pointed out the strong competition for what counted as important knowledge, paying billions for a successful moon landing, but lacking money to research what was necessary knowledge to prevent humanity from “going to the moon” (#29, 1970).<sup>210</sup> It is tempting to see a struggle appear here for epistemological dominance. Not more certainty or proof was at stake, but which scientific department got more subsidies, and which scientific reports would be read by policy makers. Science, in this way, became a tool for making noise. But the historical actors who called for more data often seemed to quite honestly believe that more knowledge would ultimately convince the world to act rationally. Probably unintentionally, as such, they were arguably helping to avoid a political discussion in society, trying to circumvent an ideological struggle by relying on an assumption of universal values of rationality.

Second, on the other side of the debate we can identify a similar strategy. While environmentalists, driven by a precautionary principle (see 3.3), argued to act on uncertainty, their opponents used the rhetoric of scepticism for the opposite purpose: postponing political change. In *Nieuwsblad van het Noorden* (#32, 1970) the scientists dr. C. Sluijsmans and dr. G. Kolenbrander (research institution for soil fertility in Groningen) were referenced (correctly or not), to argue that it was difficult to “determine with certainty [zekerheid]” whether the high surface water concentrations of chlorine and nitrate were caused by agricultural fertilization or a higher demand for – or use of – fresh tap water. Any alternative hypothesis (in increasing order of ludicrousness) that might also explain the observed phenomena of nitrification was here welcome to spread doubt about the necessity of changing fertilizer practices. Research teams spending time and money to falsify any such alternative explanations in the proper scientific way, rather than on the basis of common sense, were doing what Robert Proctor calls ‘red-herring science’ (see 2.5).

Keeping critics busy was accomplished by a highly provocative red-herring rhetoric. One exemplary person who provoked in this way was Hans Kok (see figure 25), writing in *Nieuwsblad van het Noorden* (#21, 1969). According to Kok, industries only leave “a little dirt in the wind,” and just because “people once found a penguin with some DDT in its body vet, [...] false prophets” can prevent proper economic development that would increase general well-being. By trifling scientific insight, alternative political views seemed baseless and ignorant. Somewhat paradoxically, precisely by stating that more studies, more research, and more public discussion, was not needed and would only lead to confusion and irritation, Hans Kok defied ecologists and conservationists to do just that: perform more studies, collect

---

<sup>209</sup> “Parlementen zullen dan beter weten wat de draagwijdte van hun beslissingen is,” #22, 1969.

<sup>210</sup> [Naar de maan gaan], a Dutch expression for getting destroyed or defeated. ‘Going downhill’

more data, find more examples to be ridiculed. Kok suggested to ignore “intellectuals and know-it-all’s,” making it easy for the newspaper reader to miss, that his own ideological position, arguing in favour of industrial innovation no matter what, was built upon at least as many uncertainties and elitist ‘know-it-all’ institutions, some of them academic. Kok managed to spread doubt about his ideological opponents by making his own position look like common sense.<sup>211</sup>

More delicately, rather than directly spreading doubt about environmentalists claims of pollution, several critics relied on problematizing environmentalist solutions. Theo Koopman wrote in *Nieuwsbald van het noorden* (#150, 1977) that alternative agriculture was becoming an interesting possibility but nothing more yet. For bio-farming to become a more serious option, much more research was still required (#150). While this was perhaps quite a sensible judgment, what marks it as an agnotological tool is again the double standard of scepticism (see 4.3). Keep in mind that barely any farming land in the Netherlands at the time was used biologically. While bio-farming could not be claimed as an agricultural method without any unsolved problems, pointing out the need for more certainty was blatantly ignoring the many unsolved problems of conventional agriculture. In this way, it is not the call for more data *per se* that can be regarded a tool for ideological manipulation, but rather, its application in a highly asymmetrical way, criticising new ideas way more sceptically than what was already a dominant method performed almost everywhere in the world.

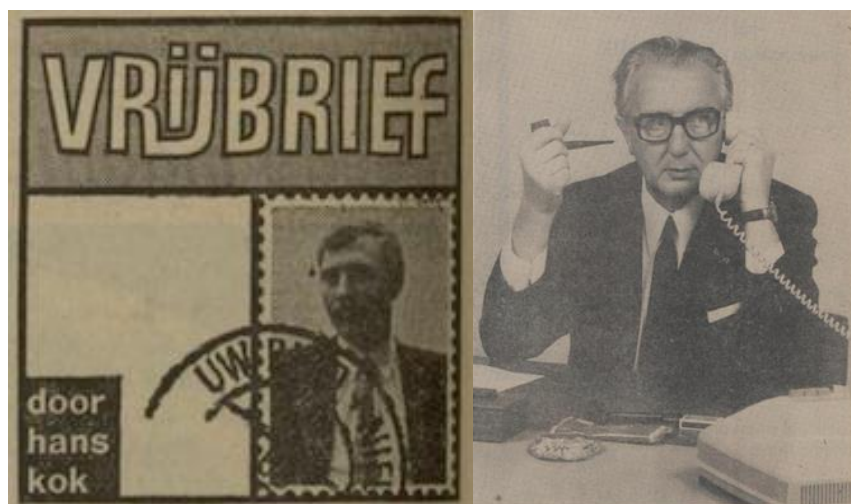


Figure 25. On the left: “Free letter by Hans Kok,” published by *Nieuwsblad van het noorden* (#21, 1969). On the right: Drs. W. Bogers, director of the Dutch nitrogen society (DSM), shown by *Limburgsch dagblad* (#108, 1974).

It is easy to see this asymmetry in the reasoning of the merchants of doubt, when we compare their analysis of existing dominant technologies to their criticism of environmental ‘solutions.’ John Wessel, working from the assumption that fertilizers were needed in large quantities anyway, argued in the *Telegraaf* that continuous research and education of farmers “could/should reduce the risks of pollution to a minimum.”<sup>212</sup> In other words, while conventional farming was not perfect, we could continue to invest in it because there was still room for improvement. Whether or not the minimum amount of pollution produced by conventional farming was actually small enough to prevent natural disasters, remained to be

<sup>211</sup> “enig vuil in de wind verstrooien, [...] wel eens een pinguin vond met DDT in zijn vet, [...] verblind door valse profeten, [...], oeverloze adviezen van intellectuelen en betweters,” #21, 1969.

<sup>212</sup> “Deze gevaren zullen door voortduerend onderzoek en voorlichting tot een minimum teruggebracht moeten worden,” #119, 1974.

discovered, but apparently it seemed worth the risk and such uncertainties were to be accepted for some unnamed reasons. In a similar fashion, an NVZ (Dutch soap industries) advertisement (1971), appearing in several different newspapers, felt that a continuous use of their environmentally polluting washing products was acceptable because they had made “environmental hygiene their priority number one!” All the NVZ laboratories in the world, the advertisement claimed, were looking for alternatives for phosphate in washing detergent (#53). Until such alternatives were found, no need to worry, the environment will be fine. Uncertainties are part of life right? For another example, W. Bogers, the DSM (Dutch Nitrogen Society) director, was interviewed by *Limburgsch Dagblad* (1974). He argued in favour of long term solutions for environmental problems. Since such solutions did not exist yet, lots of technological research was necessary (#108). Bogers (see figure 25) considered it better to wait until completely clean factories were invented, before expansive investments were made to improve immediately. And here again, the call for more research was used to postpone taking environmental responsibility. Existing technologies, challenged and criticised by environmentalists, could remain to be used despite uncertainties, while proposed alternatives were sceptically scrutinized to the bone, and as such remained economically marginal.

#### **4.6. Fake news: Empty claims of objectivity**

While related to claims of expertise or accusations of the lack thereof (4.4), fake news is not based on ignorance about the interests or values of alternative ideologies or explanations. Rather, this agnotological tool relies on a more transparent, on the nose denial or manipulative representation of what seems quite evidently (not) the case. It contains a rhetorical style of leaving strong claims unexplained, lying about – or hiding – important nuances, providing evidence to prove claims that are logically unrelated to the evidence, or exploiting individual nut-cases or exceptions to make general claims. It is probably the most commonly understood meaning of the word ‘ignorance’ that this form of ideological manipulation needs in order to succeed. Craig Stewart also mentioned that conventions for establishing objectivity include “quoting numbers and official sources.”<sup>213</sup> As such, fake news takes its rhetorical power from its ‘looks’ rather than its content.

Indeed, one common type of empty objectivity was ‘number-magic,’ letting the numbers speak for themselves, giving the impression of well-researched and undeniable fact. To know that these numbers cannot be ‘true’ one only has to compare different newspaper sources and point out their mutual exclusivity. W. Woltz claimed in a 1972 *NRC* article that global food production increased with 34% between 1951 and 1966 (#66). In the same year (1972) *Gereformeerde Gezinsblad* claimed an agricultural productivity increase of 85 to 767% between 1952 and 1968 for the general area of Africa, Asia and Latin America (#57). While these numbers are not fully comparable, it definitely seems quite impossible that they are compatible. Since the former article, taking an environmentalist position, wanted to downplay the value of fertilizers, it chose a lower percentage, while the latter article, taking an eco-modernist perspective, chose higher percentages, perhaps deliberately leaving the reader with a vague explanation for the large range in productivity increase (from 85 to 767%), to illustrate the importance of agricultural modernization.

Indeed, this is not where either articles ended their ‘number magic.’ Woltz pointed out that for a 34% global productivity increase, it seemed dubious and perhaps suspicious that in the same period (1951 – 1966) fertilizer-use increased with 134% and pesticide-use with 300% (#66, 1972). Simultaneously, 280 species of mammal, 350 species of bird, and 20000 species of plant were threatened to go extinct (#66). With these numbers, Woltz probably

---

<sup>213</sup> C.O. (Craig) Stewart, “A rhetorical approach to news discourse,” 149.

wanted to imply that fertilizers and pesticides were more effectively used for committing ecocide than for increasing agricultural yields. On the other side of the dispute, attempts to use correlations as evidence for causation or lack thereof, could also be found. For example, in more empty attempts to defend fertilizer-use, *Gereformeerd Gezinsblad* (1972) pointed out that bird populations had already grown smaller before pesticides and fertilizers were used and thus not just agriculture could be blamed for it (#57). Although, as far as I can tell from my sources, nobody blamed conventional agriculture as the sole cause for bio-diversity loss, perhaps framing environmentalist critics this way helped to discredit them.

Trying to downplay the urgency or severity of environmentalist worries about bio-diversity loss, *Gereformeerd Gezinsblad* (1972) provided some statistics of hunting successes in the Netherlands (see figure 26), awkwardly arguing that if so many mammals could be killed, their populations must be well alive, despite agricultural chemicals (#57). Apparently, ecologists who warned against fertilizer-use and pesticides had overlooked some relevant figures, provided by “independent researchers of the FAO.”<sup>214</sup> While tempting to interpret such journalism as intentional ideological manipulation, sadly, it might be the case that some people indeed imagined Dutch nature to consist of just trees, ducks, boars, rabbits and deer. The meaning of the term ‘bio-diversity’ must have been experienced in vastly different ways. The farmer Arie Schermerhorn, for example, was also sceptical about environmentalist outcries. He said in an *NRC* interview with P. Kat (1972) that “no species have disappeared.”<sup>215</sup> The presence of 50 different kinds of bird and typical weeds that would “return immediately” without pesticides, had convinced Schermerhorn that bio-diversity loss was a hoax (#67). Kat, perhaps for reasons of ‘journalistic neutrality,’ failed to point out that bio-diversity is not only about the number of species (but also about abundance and activity). Additionally, the Netherlands counted hundreds of different bird-species, not 50. And, perhaps most relevantly, bio-diversity is not limited to mammals, weeds and birds, but it often seemed that way in Dutch newspapers.

diersoort	1938-'39	1969-'70	versch.
Rode herten	2.046	2.526	+ 23%
Gele herten	82	876	+ 986%
Ree-herten	36.735	55.691	+ 52%
Wilde zwijnen	937	3.536	+ 227%
Hazen	221.000	229.400	+ 4%
Konijnen	480.000	292.740	- 39%
Fazanten en patrijzen	346.000	408.955	+ 18%
Wilde eenden	15.400	57.264	+ 272%
Vossen en dassen	17.500	17.827	+ 2%

Figure 26: Number of animals shot by hunters in the Netherlands (per species) in two different years, published in *Gereformeerd gezinsblad* (#57, 1972). Here listed are three types of deer, wild boars, rabbits, pheasants, partridges, ducks, foxes and badgers.

The interview with Arie Schermerhorn provided in more ways but one a good example of a newspaper article in which lacking expertise and fake news about the mechanisms of nature was published without any journalistic remarks or corrections. Schermerhorn claimed to have

<sup>214</sup> “Onafhankelijke onderzoekers van de FAO,” #57, 1972.

<sup>215</sup> “Er zijn geen soorten verdwenen,” #67, 1972.



known nothing about environmental hygiene and pollution until some years before 1972. According to him the water was not polluted, explicitly expressing the belief that samples taken by scientists were giving wrong results (#67). Besides, Schermerhorn was convinced that agriculture did not cause significant environmental pollution anyway. He blamed more than 96% of all pollution on washing detergent, industries and traffic. Throwing all his leftover animal excrements (gier) into the canals was no problem because “nature can heal itself.”<sup>216</sup> None of these claims were critically commented by the interviewer. Indeed, the idea that agriculture must somehow be exempt from environmentalist criticism because it ‘only contributed a small part to the overall pollution rates’ was more common in Dutch newspapers. In *Nieuwsblad van het Noorden* (1970) it was claimed that only 10% of phosphate pollution comes from agricultural fertilization. Even more amazingly, of the 150kg/ha of nitrogen fertilizer given to the land, only 9 kg were washed away into nature (#32). Apparently, the reader was to believe that this amount was unproblematic since in relative terms it was quite little. Playing around with relative improvements and relative contributions, was an easy way to downplay problems. Again, journalists often failed to point this out.

In the context of studying fake news, the discussion in Dutch news about the advantages and disadvantages of fertilizers versus manure, was fairly interesting. Those arguing in defence of conventional farming liked to claim that fertilizers were less environmentally polluting than manure (see 3.5). According to *Nieuwsblad van het Noorden* (#162, 1978) as well as professor Schuffelen in *Tubantia* (#124, 1974), fertilizers had the advantage that you could carefully give the right dosage, meaning that unnecessary pollution was easily prevented in theory. In reaction to Schuffelen, J. Breggeman wrote in a reader’s letter that the professor had compared fertilizers with uncomposted manure, the latter indeed being more polluting (#130, 1974). According to Breggeman, as such, Schuffelen had created a false opposition, leaving unmentioned that manure needs to be composted. Whether technically ‘correct’ or not, the point Breggeman was making remains important. That is, the nuances to the technical sides of fertilizer-practices were relevant in comparative debates. And yet, those nuances were often missing. One additional point being that, even if fertilizers were more environmentally friendly than (composted) manure, which was evidently a matter of controversy, conventional farmers like Arie Schermerhorn were throwing massive amounts of animal excrements into canals without even using its fertilizing potential. Thus, concerning the comparison of alternative agricultural systems as they actually worked, the claims made by Schuffelen seemed fake and empty. The discrepancy between theory (tested in ‘laboratory’ circumstances or controlled field studies) and practice created the context and justification for false claims.

Nonsense arguments used to defend conventional farming or discredit bio-farming were rather commonly present in Dutch news. In the *Leeuwarder courant* it was claimed that ever since *Silent Spring* by Rachel Carson the mentality had changed: “We are now only using new chemicals if we know that they are unproblematic (#106, 1974).”<sup>217</sup> Although this related to pesticides, not fertilizers, it illustrated nicely how transparent or obvious media strategies could sometimes be. One had to be quite extraordinarily naïve to believe that agricultural chemistry industries were suddenly going to apply a watertight precautionary principle in the production and innovation of poison. This kind of ideological manipulation, it seems to me, fully relied on the scientific authority of, in this case, dr. P. de Boer. I believe Carson, ironically, referred to such public rhetoric as “tranquilizing pills of half-truth.”<sup>218</sup>

---

<sup>216</sup> “De natuur herstelt zichzelf,” #67, 1972.

<sup>217</sup> “Middelen worden pas toegelaten als ze bewezen hebben, dat ze geen schadelijke nevenwerking hebben,” #106, 1974.

<sup>218</sup> R. (Rachel) Carson, *Silent Spring* (London: Penguin Books, 2000): 23.

Trying to marginalize or discredit the views and ideas of bio-farming, newspapers sometimes allowed for the fake news strategy. After minister Lardinois of agriculture had issued a commission in 1972 to write a report on the possibilities and potential of alternative farming methods, an *NRC* article written by F. Groeneveld quoted several scientists like engineer H. van der Molen (see 4.4) who thought it would be a waste of time to do scientific research on bio-farming (#92). Judging the results of the research commission before it had published, might count as a biased discrediting strategy already. However, what makes this argumentation especially interesting for agnotology is how agricultural chemists consistently spread the claim that the environmental problem was basically a chemical one (#48, 1971). Here, some scientists simply refused to learn anything from what bio-farming and ecological science had to say (see 3.5).

After the Lardinois research commission had published its promising results, concluding that alternative farming methods had much potential, F. Groeneveld published another article in *NRC*, referencing the agricultural society, claiming that fertilizers were also commonly used in bio-farming. Trying to discredit bio-farms, Groeneveld wrote that organic 'plant-based' pesticides or insecticides, used in bio-farming, might contain undegradable chemicals that pollute nature long term (#112, 1974). There was, in other words, no reason to be more suspicious of artificially produced poison. In further discrediting attempts, *Gereformeerde gezinsblad* wrote in 1972 that rests of pesticides had been found on biological tomatoes, claiming that due to lacking control mechanisms, consumers were misled (#57). While individual cases may have been found where this was true, to use such accusations for a general rejection and rhetorical marginalization of an opposing ideology was plain and transparent use of the fake news strategy.

One last type of empty objectivity claim relates to technocratic optimism, feeding into delusions of philanthropy, that is analysed more in section 4.1. In 1971, RIVO director professor Korringa claimed in the *Nieuwe Limburger* that environmental problems were not so serious and just needed cleaning technologies that would soon be invented (#48). Trying to convince people that fundamental societal changes were not necessary, since a simple technological solution would find itself, was not the same as a well understood eco-modernist position. While some may have considered it a respectable and sensible idea that technology was central to solving environmental problems it was something else to think that such technology was ultimately simple and within reach.

Other but related fake-news kind of simplifications concern starvation calculations. The LOBB (Society for agricultural fertilizing policy) argued in the *Telegraaf* (1974) that for every kilogram of fertilizer, ten kilogram of wheat could be produced (#119). And thus, according to John Wessel, following an easy calculation, in 1971 a billion people would have starved to death without the use of fertilizers. That conclusion was clearly fallacious. What it did not take into account, while trying to make a comparison, was the productivity of alternative agricultural systems, diet-cultures and socio-economic structures (see 3.5). For its reliance on the absence of knowledge about such alternatives, this type of fake news can be categorized as ideological manipulation.

#### **4.7. The Framing game: Rhetoric and other fallacies**

In paragraph 2.7 it was argued how the activity of framing might be considered central to an agnotological analysis of discourse, since it presupposes a form of selectivity, highlighting or normalizing some aspects, authorities, ideas, or evaluations, while hiding others, producing ignorance in the process. One explicit way of doing so is stigmatization, what Pan and Kosicki described as "marginalizing certain points of view by attributing them to a social

deviant.”<sup>219</sup> In that process, incommensurable language is often used to mimic, trying to get political and social credits for precisely those ideas and principles another ideology is popular for.

Examples of such ‘social deviants’ ranged from environmentalist mafia to extremist activists or simply “sweet singing bird-watchers of the Club of Rome.”<sup>220</sup> According to the *Leeuwarder courant* the politician Mansholt, who once led Dutch agriculture towards good business, had now been influenced by weird hippies. For some reason, ‘bird-watchers’ were not to be taken too seriously. Ironically, the same article felt that it was manipulative of environmentalists to use the argument of food-quality against conventional agriculture (#106), reminding of something with pots and kettles. An earlier article by the *Leeuwarder courant* wrote about “environmental hysteria” and felt that such terms as “bio-industry or *animal factory*” were just environmental rhetoric.<sup>221</sup> And I agree, the framing game was played well at both sides of the fertilizer dispute. However, again considering how the environmentalist position was politically and socio-economically marginal, and wanting to critically analyse those in power and the mechanisms of dominant ideology, my focus here is on the ways environmental ideas were discredited or framed unworthy.

An article in *Vrije Volk* (also published in the *NRC*), referencing professor Buringh and professor Van Heemst (WUR), framed alternative agriculture as western agriculture as it was in the early nineteenth century: no machines, no fertilizers, no pesticides and depending on more people working (#169, 1978). J. Zwikker van der Heijde reacted offended in a reader’s letter arguing that the research by Buringh and Van Heemst was of little consequence for modern alternative agriculture since the bio-dynamic method was not an ancient non-scientific primitive farming style (#164, 1978). Indeed, the scientific and perhaps empirical nature of bio-farming knowledge, as we saw before throughout this thesis, had been hotly debated on several occasions and has been the topic of much historical research on, for example, occultist origins of alternative farming knowledge.<sup>222</sup> Despite such origins, biological farming perhaps evidently was also studied within the established walls of academic science. Rachel Carson, among others, helped popularize fairly modern ideas of using natural predators of plague-insects, for example, as a form of biological plague-control. Framing modern bio-farming as backward, primitive or old-fashioned, was rather bold and indeed ignorant. Whether Buringh and Van Heemst actually meant it that way, is of little consequence for my analysis here. What counts is how their research was represented in the news.

Other examples of attempts to discredit environmentalism include a claim made by John Wessel in the *Telegraaf*, stating that more use of fertilizers in the developing world was advised by the FAO and thus, considering its authority, environmentalists were meaning well but they were badly informed (#119, 1974). While this could also be used as an example of normative facts and a fallacy of authority, the idea of framing the other as ‘badly informed’ struck me as an interesting strategy, avoiding any accusations of irrationality, but simply implying that if everyone had the same information, they would also come to the same conclusion. Additionally, this strategy seemed to characterise the environmentalist as somehow less educated, less thoroughly prepared, or less capable of proper research, marking ‘them’ as less worthy of political attention. That general idea reminds of the framing done by P. Jongeling in *Gereformeerd gezinsblad* writing that environmentalist activism was sympathetic but too extreme in their demands and methods (#131, 1975). So, yes,

---

<sup>219</sup> Referenced by C.O. (Craig) Stewart, “A rhetorical approach to news discourse,” 149.

<sup>220</sup> “de zoet fluitende vogelaars uit de Club van Rome,” #106, 1974.

<sup>221</sup> “Milieu-hysteria [...] bio-industrie [...] *animal factory*,” #59, 1972.

<sup>222</sup> J. Paull, “The Betteshanger summer school: Missing link between biodynamic agriculture and organic farming,” in *Journal of organic systems* 6, nr. 2 (2011): 13 – 26.

environmentalists had some nice and understandable worries and ideas, but ultimately their alternative visions of society should not be regarded too seriously. Somehow similarly, the farmer Hotze Heeg criticised environmentalist politicians in a reader's letter in the *Leeuwarder courant*, by declaring that a bureaucrat with an environmental agenda completely disrespects the farmer as a businessman (#156, 1978). And so again, the environmentalist is discredited as naïve, misunderstanding, and incapable. 'Their' opinion must be taken with a grain of salt. The normal was here rhetorically equated with the rational. A 1974 article in *De Tijd* by Vic Langenhoff simply spoke of the "correct agricultural methods," meaning conventional agriculture.<sup>223</sup> Amazing framing.

A second framing tool that depends on the rather long term suspension of disbelief is typical for organizations that want to get a good public image, running proper public relation campaigns. One interesting related case of a public legal battle concerned the land of the bio-farmer H. van Nispen van Sevenaer. For 25 years, plans had been discussed within the municipality to allow a cigarettes company to build a factory there. A 1973 article in the *NRC* had already announced that the farm of Van Nispen needed to disappear (#95). But in 1974, bad news turned into good news. The growing interest of the government for biological alternatives had changed his chances (#118). Given this context, and considering the many years this legal issue had been threatening the business of Van Nispen, it was quite remarkable to read that the cigarette company itself also thought it would have been a pity to build a factory on that soil (#118). Of course, after the decision to conserve the bio-farm was already made, such public statements of goodwill were not expansive.



Figure 27: ICI advertisement in the *Volkskrant* (#126, 1974). "Are resources well used... now that ICI can improve the food situation with it?"

In a wave of ICI advertisements (Imperial Chemical Industries), a British company that produced all kinds of chemicals among which also pesticides and fertilizers, published in almost every Dutch newspaper within the Delpher archive. The company showed goodwill towards the environmentalist cause, which even seemed a central theme of the PR campaign (see figure 27). According to the advertisement, their new product *Gold-N* fertilizer diluted so slowly in water that almost none of it would pollute the environment and *Primor* [insecticide] only killed lice but not the useful bees and ladybugs (#126, 1974). And not unimportantly, all chemicals from ICI were made with resources coming from nature (#116, 1974). Is not that a relieve? I have no idea where else their resources could have been coming from but it sounds

<sup>223</sup> "De juiste manier," #103, 1974.

good. At least we know these artificial, i.e. chemically produced, substances were not made from resources conjured up by dark magic.

In order to understand these advertisements agnotologically, it might be useful to ask for the intended audience. Who was going to be convinced by these transparent ‘tranquilizing pills of half-truth?’ Who was letting ICI get away with this advertisement framing? Was anyone thinking that resources could not come from nature? Apparently, the chemical industry felt the need to ‘deal with environmental worries,’ but had to find a way to reach out to the worried community, speaking ‘their’ language and somehow relying upon ‘their’ typical thinking errors or ignorance. What the advertisement was playing on to a large extent, apart from trivializing the damage caused by their products, was the claim that their chemicals were ‘natural’ (normal) and must therefore be unproblematic. Indeed, in similar advertisements by NVZ (Dutch soap industries), trying to sell washing detergent, it was stated that phosphates are natural products, not essentially dangerous and even necessary elements for nature to grow (#53, 1971). The news itself provides some evidence that this method of ideological manipulation might have worked. In a reader’s letter sent to the *Leeuwarder courant* in 1979, Marianne (family name unknown) wrote that manure was to be preferred over fertilizers since manure is more natural (#170). The naturalistic fallacy seems to have (had) some attraction to many members of the environmentalist community.

In stark contrast to the above advertisements from the 1970s, for selling fertilizers during the 1950s, entirely different frames were exploited. Asef, a company selling fertilizers for private use in gardens, published an advertisement in *Nieuwsblad van het Zuiden* in 1952. Sold together with a ‘free’ manual, their product promised to make your private garden into Eden on earth (#2). Fertilizers, still somewhat unknown or unfamiliar gardening products, were praised into the sky, avoiding any mention of possible critiques. A 1955 article in the *Volkskrant*, providing gardening advice for the new season, praised fertilizers to do every lawn a favour, coming in “handy bags” of scientific ingenuity. In contrast, the same article considered unfiltered compost to be potentially dangerous, containing sharp trash that could cut the skin or destroy lawn mowers. Additionally we were advised to carefully clear the compost from any weeds such as dandelion, plantain and daisies (#6). No such nuisances, smelly manure, and the unwanted arrival of uncontrolled bio-diversity, were to be expected from fertilizers. By comparison, during the 1970s, PR campaigns had started to mimic environmentalist language, something that had been unnecessary or unthought of before. It is a good way of showing how an established ideology could integrate new worries or concerns, as well as ‘deal’ with criticisms, by making it seem like environmentalist ideas and values were already normal.

That the environmentalist perspective, language and frames had become more ‘influential’ or commonly known in the 1970s, was also visible from the defensive reactions. An article in *Het Parool* from 1971 remarked: “soon they will blame the dead for polluting the soil,” ridiculing the radical tone of alarmists and activists.<sup>224</sup> The engineer M. Wagenaar Hummelinck, chair of the foundation for Dutch autonomous trade and industries (Z.H.I.), was quoted in the *Nieuwe Limburger*. In defence of agriculture, and especially typical Dutch landscape, he rhetorically asked what 650000 hobby fishers and 90000 recreational boats would do without canals between pastures. For Hummelinck, apart from its oxygen producing quality, agriculture had great recreational purposes (#30, 1970). What was happening here, as well as in other newspapers, was a re-framing of the newly fashionable idea of ‘environment’ as ‘natural landscape’. In defence of agriculture, Wagenaar Hummelinck pointed out the landscape management tasks of farmers, and as such criticised the frame of the farmer as opposing the environment by polluting and endangering it. The

---

<sup>224</sup> “Straks gaan ze stervende mensen nog verwijten dat ze de grond verontreinigen,” #47, 1971.

farmer, therefore, needed to be considered part of the solution for ‘managing’ nature in the Netherlands. Technically, on that point, there was no disagreement. Bio-farming was also considered a way of producing food without harming or even fostering bio-diversity. However, what the position of Wagenaar Hummelinck indicated and hid, was how differently people were thinking about what is nature, and what aspects of nature were valuable for human society.

In this context, considering misunderstandings of ‘the other’ and what ‘they’ think of as normal, it was interesting to see the Cuperus brothers, two bio-farmers, protesting against the frame of ‘alternative farming.’ Lambiek Berends, the journalist who had interviewed them, wrote in the *Volkskrant* (1978) that these brothers did not like to be called alternative farmers. Businesses that depend on large scale, big machines and fertilizers should be seen as the real alternatives (#167). More generally, the development of a new language for different types of farming, related food-labels, and agricultural philosophies, was itself an active process of framing or demarcation that could become confusing, and was therefore prone to be exploited. John Wessel wrote in the *Telegraaf* (1972) that the large variety of new terms: biodynamic, biological, macrobiotic, organic, and others, had led to products being sold under the biodynamic label while containing pesticides that were not allowed in biodynamic farming (#70). Reducing ideological disputes to semantics, it turned out, made all sides to the debate vulnerable to agnotological tools of manipulation.

#### **4.8. Agnotology *avant la lettre***

What becomes visible for the historian within a discourse of controversy, perhaps not entirely unexpectedly, also became visible for the debating participants themselves. Agnotological tools of ideological manipulation had already been noticed and criticised in the news at the time. Such meta-criticisms, pointing out the naked emperor, arguably, were even part of the ideological discursive strategies for discrediting the ‘other,’ or developing new values and insights.

J. Vis wrote in a 1973 *NRC* article that even though Dutch society was facing a challenge it had never faced before, political parties in favour of sobering up were losing votes. Alarmism was not popular. Vis offered only two other options: broad support for conservative politics or sharp polarization (#97). With that, Vis not only showed awareness of the dominance of capitalist, technocratic and/or eco-modernist ideologies, but also pointed out the political mechanism that led to the hiding and ignoring of discursive complexities, splitting up the fertilizer dispute into two ‘poles.’ Vis observed that most politicians who did worry about environmental pollution, would not have said it out loud (#97). The demarcation of political ideologies was thus recognized not only as a given dialectic, but an opposition that was shaped through political mechanisms, rhetorical tools and social pressure. The need for simplification arose from the need for an easy to understand public image, that people would vote for in a parliamentary democracy.

The biologist D. Kuenen from Leiden university made interesting observations about the ignorance of possibilities and limits thereof, relating to the discussion in paragraph 4.1 about delusions of superiority. In a 1969 article in the *Volkskrant* he remarked that people were rarely aware of the significant effect they had on nature, of what was destroyed. Perhaps many were often not even aware that something was destroyed. The extinction of all kinds of species probably remained unnoticed (#22). This humble attitude stood in stark contrast to the technophilic trust in innovation we saw from people like Bruinsma or Polak. By pointing at an important type of ignorance in the fertilizer debate, Kuenen also strategically argued in favour of an environmentalist precautionary principle. Scapegoating dangerous technological optimism as ignorant, seems oddly meta-agnotological. In *Nieuwsblad van het noorden* (1970) Kuenen went a step further, making his ideological demand more explicit by arguing

that experience had taught that humanity was not smart enough, could not oversee all the consequences, to actively try and manage nature. Management therefore, should be left to biology itself (#34). As such, the bio-farm was here framed as a way of dealing with inevitable ignorance, and preventing human delusions from endangering the future.

Also the banality of ‘evil’ or collectively unintended results of system conformity (see 4.2) was reflected upon by some authors in Dutch newspapers. A 1973 *Tubantia* article had stumbled upon the NIMBY-effect *avant la lettre* (not-in-my-back-yard). Mostly other people should take initiative to do ‘something’ for the environment. Reducing consumption, according to *Tubantia*, was realizable, but only if everyone had to do it (#98). Urgency and responsibility were hidden behind societal norms. The individual citizen could not be criticised for acting like sheep. In contrast, with regard to global philanthropic intentions, the FAO and related green revolution, was more fiercely, or less apologetically, criticised for its narrowmindedness, exclusivity and ignorance of fairly significant parts of the fertilizer dispute. Dick de Zeeuw, Vera Kappers and Wouter Sims wrote in the *NRC* that the FAO focussed on agriculture, not the broader socio-political picture. As such, “the real” problems were not discussed, controversies were avoided, and the perspective of (small) farmers was ignored (#174, 1979). De Zeeuw and Co found it embarrassing that no farmers from developing countries were invited to the international food-security conference. With that, the economic and political intentions behind postcolonial relations for agricultural modernization were actively questioned and challenged, unmasking the agnotological tool of philanthropy as a form of ideological manipulation. Again, doing so was itself an ideological strategy, drawing attention to the increasingly relevant socio-political factors of poverty and starvation that needed political rather than technological ‘solutions.’ With a similar strategy, the engineer J. Ybema turned the argument upside down, arguing in the *Leeuwarder courant* (1975) that creating conservation parks and acting as if its purpose was to save humanity from a catastrophe would allow for the socialist state to become reality in the Netherlands (#133). The irony, I think, was that no socialist, but rather a capitalist state had in fact succeeded in using precisely this agnotological strategy of philanthropy to claim dominance in Dutch agriculture. But Ybema’s attempt to discredit the environmentalist position was nevertheless rhetorically similar to what De Zeeuw and Co had done to discredit a technocratic system.

The *absence* or ignoring of socio-political factors also translates into the agnotological tool of the ‘missing comparison’ (see 4.3), and forms of ignoring relevant details or local circumstances. F. Groeneveld noted in *NRC* that especially pesticide and fertilizer industries resisted support for biological farms that would fit inside conservation areas. He pointed out the rhetorical use of global necessity claims despite nobody suggesting to turn all Dutch farms ‘bio’ within a year (#114, 1974). Here, not only did Groeneveld point out the weird mixing up of global necessity with locally specific policies that was discussed in paragraph 3.4, but also criticised the absolute or extreme rejection of alternative farming options, allowing for no serious competition of alternative methods. The ‘other option’ was thus ignored, hidden, and removed from the discussion, as it was denied access to practical realization.

Adding to this understanding of how proper comparisons could be avoided, Wouter van Dieren criticised scientific prediction models and system researchers in an *NRC* article from 1973, arguing that such models rarely included alternative social organization. In other words, scientific innovation worked within the logic of the existing ideological order. On top of that, Van Dieren criticised the objectivity of quantification for its internal bias in favour of anything that was easily quantified, such as money-flow, amounts of fertilizers, and crop yield of monocultures. By analysing global developments on the basis of such parameters, it became inevitable that solutions for global food security would also be produced in those terms. More complex alternatives would be ignored. Van Dieren was on point (#93, 1973). The universalization, simplification, quantification, and standardization, of agricultural

modernization was here seen or ‘discovered’ as an agnotological tool (*avant la lettre*). And again, also here, that criticism was itself a way of developing new concepts, relating environmentalist ideas to political philosophies of perhaps (eco-) anarchist or otherwise related visions of a society that embraced complexity, chaos, organic developments, and diversity. It opened up to new insights or alternative ideas for how to deal with environmental pollution and the world food crisis.

It is a small step to go from criticisms of scientists working within and serving – or conforming to – dominant ideologies, to criticisms of scientific normativity, blindness or ignorance of economic and political interests behind the production of knowledge (see 4.4). In a furious reader’s letter, reacting to an article in *Nieuwsblad van het noorden* that celebrated hundred years of fertilizers in the Netherlands (#162, 1978), Henk van Rijn accused journalism of becoming an advertisement for multinational corporate interests (#161, 1978). Van Rijn sharply pointed out the asymmetry of normativity, a rhetorical phenomenon of turning alternative agricultural methods into myths while also unquestionably copying the values of modernization. The status quo, or even dreams of superior future technology, was not held to the same standards of judgement, and accepted as rational. Ignorance arising from the lack of questioning the authority or expertise of academia was produced in this way. Perhaps not unimportantly, this criticism was worked out in a reader’s letter rather than a thorough journalistic piece.

In an attempt to explain the normativity of science, Hans Friedeman wrote in the *Volkskrant* (1972) that the specialization of scientists had caused them to lose connection to reality (#82). Regarding what Isabelle Stengers writes in *Another science is possible*, it is interesting to note such comparatively early rethinking of the structures of the scientific institution. Engineer S. Rozendaal, referencing dr. A. King from the Club of Rome, came even closer to making some of the same points as Stengers. He wrote in *NRC* that engineers, or innovators, should get another type of education. To prevent biased system-conforming innovation, engineers should learn to think interdisciplinary, including politics and social science (#152, 1977). What Rozendaal accomplished was not only to observe agnotological tools (*avant la lettre*) but to use that criticism to argue for an alternative.

In this context, a sort of meta-agnotological struggle for ideological dominance occurred, where accusing each other of ignorance or misunderstanding what was possible, what was the role of science, or how the ‘world really works,’ became a strategy in itself. An unnamed journalist writing for the *Volkskrant* (1970) observed that younger people coming to the world food congress in The Hague protested against the idea of political neutrality, arguing that by staying ‘neutral’ the FAO tacitly supported ruling systems, including authoritarian regimes in the ‘developing world’ (#41). FAO director A. Boerma dealt with that criticism by arguing that the FAO was only advisory, and could not begin to facilitate revolutions. Boerma explicitly denied that political debates had a place in a scientific conference about food security (#41, 1970). With that, Boerma circumvented the criticisms of scientific normativity and the banality of system-conformity, two types of agnotological tool, by choosing to accept or embrace the rationality of those tools. That is, he justified his position by claiming ‘the other side’ to be ignorant of what was politically feasible, as such ironically demonstrating exactly what it meant to be system-conforming. What was ignorant for his critics, was sensible for Boerma.

Highlighting the remark by Boerma about the FAO being ‘only advisory,’ we might turn our attention to a fifth agnotological device of manipulation: the merchants of doubt (see 4.5). Scientists may advise all they want, but who decides what to do? Or more concretely, what scientific advice is accepted and what advice is ignored and how? A societal Cassandra complex, finding rational ways of ignoring worries and warnings about (future) catastrophes, is interesting in that context. The call for more data or Popperian dilemma of ‘which side



carries the burden of proof' was explicitly noticed by several authors of Dutch news. Dr. D. Kuenen remarked in *Nieuwsblad van het noorden* (1970) that there is rarely and hard proof of environmental damage or ecocide (#34), nicely relating to what Stengers said about waiting until "reality itself stages the proof."<sup>225</sup> Similarly identifying this agnotological tool of ideological manipulation were S. de Roos (1973) in *Vrije Volk* and H. de Klerk (1974) in *Tubantia*. De Roos wrote that despite much research there was too little political reaction (#101). De Klerk added that environmental damage of consequences were often difficult to establish, prove or quantify (#121). Thus indeed, and again, the asymmetry in ideological scepticism of growing scientific insight did not remain unnoticed.

That the epistemological criteria of science itself could be used against it, demanding ever more certainty and quantification, was explicitly noticed by Ton Jacobs in the *Volkskrant* (1972). He recognized that the thresholds for ecological collapse were unknown and that therefore it was difficult, if not simply subjective, to determine ecological (quantifiable) norms for policy-making (#79). The bureaucratic need for those norms, essential for the type of policy making that a technocratic government prefers, was arguably what enabled, in part, the production of ignorance by calling for more data. Ton Jacobs challenged that political mechanism, warning the reader that 'doing calculations' might simply be used "to keep us sweet."<sup>226</sup> He suggested that once you agree that environmental pollution is a problem, it need not be so difficult to change habits on the basis of common sense rather than complex calculations and mountains of research. That driving a car was (and is) more polluting than driving a bicycle, for example, seemed obvious enough. Jacobs went so far as to wonder why not to simply abolish the production of useless products (#79). As such, Jacobs actively tried to present a strategy to listen to what was essential, in between the lines of that loud noise, otherwise known as knowledge.

The way merchants of doubt managed to postpone 'necessary' political action, like the examples above, was criticised by Wouter van Dieren in two *NRC* articles from 1972 and 1973, as such identifying an agnotological tool of ideological manipulation (*avant la lettre*). He argued that changing society was a political matter. But when politics point to the need for more science to come to 'rational' policy advise, the production of doubt threatens an endless circular argument of science justifying itself as politically neutral and politics justifying itself as scientifically grounded (#93). Van Dieren had observed that environmentalist groups had become increasingly competent and well-grounded in their argumentation, whether in court or in public. However, paradoxically, growing insight and growing competence was not, it seemed, correlated to growing political influence. Van Dieren explained this phenomenon by arguing that a higher quality of activist reports had become normal or unimpressive. The growing amount of environmentalist reports, despite their increasing scientific quality, mostly contributed to a growing pile of paper (#64). I think that nicely illustrated how environmentalists were bureaucratically 'dealt with,' walking into the trap of the call for more data.

The idea of expertise related to fake news and empty claims of objectivity (see 4.6). To accuse others of producing fake news, again meta-agnotologically, was a common strategy to discredit ideological opponents. A. de Kool reported in *NRC* (1971) that Nobel prize laureate Norman Borlaug spoke of "hysterical environmentalists." In turn, the European minister of agriculture, dr. Mansholt, spoke of "Borlaug's hysterical defence of DDT (#49)." The agricultural debate, De Kool observed, had become a childish back-and-forth of 'yes and no.' In addition, an article in *Vrije Volk* (1973) noted that untruths and suspicions about agriculture could be heard everywhere (i.e. books, brochures, TV, journals) (#89). In a text by

---

<sup>225</sup> I. (Isabelle) Stengers, *Another science is possible*, 20.

<sup>226</sup> "Ons zoet te houden," #79, 1972.

engineer J. Ybema, a reader's letter in the *Leeuwarder courant* (1975), accusation of fake news became explicitly ideological. He wrote that environmentalist lies about declining bird populations, pollution, fertilizers, and modern farms, were just fabricated for the purpose of strengthening socialist political influence (#133). All in all, examples enough to show that fake news as an agnotological tool of ideological manipulation (*avant la lettre*) had been recognized.

Related to framing 'the other' as hysterical (see 4.7 for the framing game), was what Sante Brun (#29, 1970) had remarked about increasing indifference. An article in *Trouw* (1970) expressed the concern that the growing use of fashionable terms, new frames and concepts, like environmental pollution, alternative farming, and participation democracy, might have led to general carelessness by inducing reactions of apathy and aversion (#38). Dutch newspaper readers were, according to this analysis, tired of hearing about all those 'problems' and ideas for change. Another way of interpreting this phenomena might be to see it as the normalization of alarmism. The agnotological tool of the framing game, ignoring 'the other,' growing deaf to 'their' voices, was here somewhat implicitly recognized.

The role of normalization in the fertilizer-dispute had also been pointed out in the news in other ways. An article in the *Volkskrant* (1969) observed that disgusting surface water had become normal for sport fishers (#22). As such, the historical reasons for that pollution could be ignored, reminding of generation-shifts relating to bio-diversity experiences (see 2.7). What counted as beautiful nature shifted over time, making it harder to realise what had been lost. Similarly, the use of fertilizers by Dutch farmers had not always been so generally accepted and trusted by the farming community (see 1.2). B. van Krimpen, a 96 years old countryside schoolteacher, remembered in an article in *Trouw* (1961) that the first farmers using fertilizers did it during the night, not wanting to be seen by colleagues (#11). Considering how much time it took to convince farmers of modern technologies, might make it more understandable why it was so difficult to criticise those technologies a generation later. Here, the production of ignorance was understood to be well-grounded in long-term normalization processes.

---

## Chapter 5: Conclusion

---

*All through history, the best measure for bad times was the percentage of food eaten that had to be purchased.*<sup>227</sup>

It would be nice to start actively facilitating alternative societies. But before that, people need to get a chance to reflect on their possibilities. In a democracy, but even more in academia, one would expect a fair exchange of ideas: a free marketplace of ideology. But public discourse is fundamentally oppressive of alternatives. The modern expert presents their ideas or innovations as superior, philanthropic, necessary, certain, objective, and normal, better for everyone. Surely, the critical journalist, as well as the critical social scientist may challenge these claims. The news may present evidence of hidden interests, self-enrichment, hidden agendas, violence, destruction, failures, delusions, limitations, hidden intentions, new scientific insight, urgency, incompetence, corruption, and atrocities. That is a nice start, trying to uncover what is hidden by the modern expert, whether a scientist, corporate advertisement, or society chairperson. The production of ignorance, as such is noticed, challenged, and even itself rhetorically used to expose the political strategies of ideological manipulation. However, overall, the presence of criticism is not the same as providing ideological alternatives. Modern media do a terrible job at providing in alternative narratives and generally fall into the trap of following the reductionist categories defined by dominant eco-modernist or technocratic ideology.

### 5.1. Summary

Political manipulation in the media as well as fertilizer-controversies are both relevant themes in the contemporary Netherlands. In some ways the war on hunger, starting with the green revolution and a dialectical dispute between environmentalism and technocracy, is continuing until today. However, compared to today, the 1970s offer a less eclectic ideological landscape in which eco-modernist technological solutions for environmental problems were only part of the debate as a futurologist prediction. The establishment or ruling institutions had not yet generally acknowledged environmental alarmism. Radical opposition therefore had a chance to go public, define the major problems of the time, and become mainstream.

Within such public discourse of, in hindsight, obvious and partially incommensurable opposition, analysing techniques of mass persuasion and manufacturing consent turns out to be an interesting approach to an agnotological study. The aim has been to uncover the making of ideological ignorance, i.e. the marginalization of alternatively coherent cosmopolitan frames or logics. The central question to what I called the fertilizer-dispute was simple: Do we need fertilizers? The answers to that question varied a lot. But that did not ensure a healthy and fair marketplace of ideas, allowing for a well-informed democratic process.

The period of 1950 – 1980 can generally be characterized as the time in which Dutch agriculture modernized significantly, completely changing the landscape, the business models, and the agrarian demographic. The idea that nature conservation and agriculture are natural opponents was carved deep into Dutch collective perceptions. Fertilizers were considered an amazing innovation, a necessity for feeding the global population, and a chance for farmers to compete on the European market, making the Netherlands self-sufficient. This

---

<sup>227</sup> I. (Ivan) Illich and S. Samuel (ed), *Beyond economics and ecology: The radical thought of Ivan Illich* (London: Marion Boyars, 2015): 17.

dominant technocratic vision of ending world hunger was challenged on many different levels in the news.

I have analysed or deconstructed 144 articles from Dutch newspapers of the 1950s until the 1970s that discuss the fertilizer question. In that work my guiding question was: What controversies constituted the (dialectical) polarization of – and what agnotological devices of manipulation played a role in – the public fertilizer-dispute as represented and manifested in Dutch newspaper discourse of 1950 – 1980? Five major issues of controversy, largely discussed in a reductionist fashion, were identified (in chapter 3). Seven agnotological devices, rhetorically used to produce ignorance, have been identified conceptually (in chapter 2) as well as in my historical sources (in chapter 4).

Selectivity of controversial themes can be seen as a reductionist strategy of hiding an alternative logic. For example, bio farming only makes sense in combination with a different socio-economic model and different diet culture. What themes, ideas, arguments, and actors, were present or absent in the news, and often independently discussed, was important to understand as context for further agnotological analysis. The five different fertilizer-related controversies or *literatures* identified were: Bio-farming, diet culture, pollution and nature conservation, global inequality, and food security (see appendix B for a detailed summary). Making the debate into a set of independent controversial issues and problems was one way of avoiding and hiding ideological competition, always representing the ‘other’ as unreasonable outside of the context of its own logic.

In addition, I have presented abundant evidence for the uses of seven different agnotological tools in Dutch newspapers of the relevant period. Delusions, apathy, possibilities or limits thereof were hidden behind ideas of superiority and cruel optimism. Intentions, dependencies, and the lack of control, were hidden behind claims of philanthropic innovation. Alternative ‘solutions,’ other perspectives, local variety, and local circumstances, were hidden behind global narratives, necessity-claims and standardization. Economic and political interests were hidden behind objectivity and academic authority, failing to reveal all values behind innovation, failing to ask who will benefit the most, and who will pay for it. In turn, urgency and risks were hidden behind uncertainty or scepticism, using knowledge as noise like the merchants of doubt, and depending on the Popperian dilemma of the burden of proof. Similarly, well-established and broadly accepted (scientific) explanations and/or observations were hidden behind fake logic, number-magic, wrongful accusations or generalizations, or stereotypical misrepresentations of ‘the other’. Also, other perspectives and the incommensurability of terms was hidden behind stigmas and arbitrary ideas of what counted as ‘normal.’ As such the manipulation of a highly reductionist ideological dispute did not allow for holistic alternative visions of how to organize society and the production of food, to become accessible to a mainstream audience.

In addition, what becomes visible for the historian within a discourse of controversy, perhaps not entirely unexpectedly, also became visible for some debating participants themselves. Agnotological tools of ideological manipulation had already been noticed and criticised in the news at the time. Such meta-criticisms, pointing out the naked emperor, arguably, were even part of the ideological discursive strategies for discrediting the ‘other,’ or developing new values and insights. Moreover, the relatively common awareness of how ignorance was made also indicates the possibility for intentional manipulation.

## **5.2. Main findings**

Looking back I would like to bring together a few more detailed insights from the last two chapters. From the statistical analysis of selectivity (3.2), it became apparent that many authors discussing fertilizer pollution found it unnecessary to discuss biological alternatives. The world hunger crisis was rarely related to a discussion about healthy, “ethical” or

vegetarian food. And interestingly, about half of all articles discussing the world hunger crisis did not discuss global inequality and its relations to market-conditioned innovation or modernization.

Several positions and main arguments in controversies about fertilizer-related environmental conservation could be identified. Environmentalist and ‘alarmist’ concerns for the environment and worries about pollution relied on precaution, sympathy or love for nature and responsibility towards future generations. In reaction, direct rejections of environmentalist claims were rare. The opposition relied more strongly on accusations of hypocrisy and economic interests. Since modern agricultural businesses had been trapped by their own investments, a compromise with the farmers needed to be found. In that context, the fertilizer-dispute in the news developed into a public brainstorming activity for finding solutions beyond agricultural alternatives. Simply turning towards bio-farming thus remained largely invisible in a reductionist attempt to find independent solutions for pollution.

In discussions about agricultural efficiency, criticisms of bio-farming-efficiency were often written in a discursive context of green revolution rhetoric and population-growth issues, while proponents of bio-farming efficiency tended to write in the context of environmental pollution or specifically Dutch socio-economic interests or visions. World hunger became a social and political question, as much as it was a technical one, from the 1970s onwards. From that moment, agricultural practises were publicly related to global inequality and injustices. As such, the road was opened for radical ideological criticism of the green revolution. Given those developments, total silence about the growing popularity of an alternative agricultural method in many newspaper articles as well as a corporate lustrum book of 1979, was a clear sign of ideological bubble-forming at best, manipulation at worst.

Such missing comparisons worked within a reductionist framework, producing ignorance about an alternative logic that would not only change fertilizer use but also change socio-economic models, diet-culture, build recycling structures, prevent waste, reduce consumption of the wealthy, and develop alternative technologies. Reducing the environmentalist position to elitist practises and creating a false opposition on the basis of that straw man, was a common way of thinking in the news. In Kuhnian terms, one paradigm was judged based on the rationality of another logic.

As a consequence of imbalance or asymmetry in epistemological power the little research done for bio-dynamic farming was often considered not scientific enough. Besides, in many cases, what was at stake was not more certainty or proof, but which scientific department got more subsidies, and which scientific reports would be read by policy makers. Science, in this way, became a tool for making noise. Keep in mind that barely any farming land in the Netherlands at the time was used biologically. While bio-farming could not be claimed as an agricultural method without any unsolved problems, pointing out the need for more certainty was blatantly ignoring the many unsolved problems of conventional agriculture. In this way, it is not the call for more data *per se* that could be regarded a tool for ideological manipulation, but rather, its application in a highly asymmetrical way, criticising new ideas way more sceptically than what was already a dominant method performed almost everywhere in the world. In that struggle for comparison, the discrepancy between theory (clean fertilizers) and practise (farmers dumping dung into surface waters) sometimes allowed for the justification of false claims.

During the 1970s, PR campaigns had started to mimic environmentalist language, something that had been unnecessary or unthought of before. Advertisement strategies show how new worries or concerns were integrated in politically correct language, making it seem like environmentalist ideas and values were already normal. More generally, the development of a new language for different types of farming, related food-labels, and agricultural

philosophies, was itself an active process of framing or demarcation that could become confusing, and was therefore prone to be exploited.

Overall, several authors explicitly recognized the demarcation of political ideologies not only as a given dialectic, but an opposition that was shaped through political mechanisms, rhetorical tools and social pressure. The need for the simplification of the debate arose from the need for an easy to understand public image, that people would vote for in a parliamentary democracy.

Considering much of the above, I suggest it is reasonable to suspect that newspaper media played a role in helping the eco-modernist argument, only one perspective during the 1970s, to become dominant throughout the 1980s. A reductionist approach to farming, global food security, and environmental ‘crisis’, helped to integrate the latter in established political narratives, and ignore fundamental political alternatives. However, ignorance, surely, was not the only ‘thing’ standing in the way of organizing society sustainably. Critical thinking and public debate was not solving all problems. Courage, vision, and integrity, I would argue, was epidemically lacking in a country that offered comfort, anonymity and luxury.

### **5.3. Some reflection**

Ending with a personal note, I would like to provocatively claim that polarized dogmatism (1) is caused by a lack of ideology, a lack of fundamental as well as practical discussion about what society needs to do to prevent ecocide and its detrimental consequences. The same, oddly, goes for eclecticism (2), or just utter political indifference (3). The fertilizer dispute currently keeping the Netherlands in shackles, embedded in a wider context of political controversy about the environment, suffers from all three. The postmodern political arena has become void of coherent ideological understanding, turning the philosophical and historical analysis of politics into an abstract deconstruction of discourse, analyzing rhetoric and language rather than its content or actuality, leaving practical questions to the natural sciences. And as such, while academic elites and many others, perhaps even a majority in society, have come to accept the threats of climate change, ecocide, and poisonous pollution, the economic, as well as the political system we actually live in does almost nothing to act against such destruction, and violence. Problems are shifted but not solved.

Apart from fighting for a fair public discourse, trying to change how the media reproduces the logic of our political system, those of us who are convinced that environmental concern, climate change, and global injustices, warrant a revolution, should start by exchanging a false life for a true one. A leader of the de-growth movement is just not convincing when reading their speech from a brand new MacBook pro. Green elitism is not radical! Proper ideological understanding of prefiguration demands to make not only more responsible choices within the framework of current society, following a vegan diet, traveling by train and banking at Triodos, but to build coherent and practical alternatives.

My advice after writing about the role of the media in ideological manipulation? Combine ideas with practice. Do it! Stop talking. Prefigure. Self-organize. Show newspaper readers what they can do. How to share. How to live in smaller spaces. How to quit bullshit jobs. How to use orders of magnitude less energy without losing quality of life. How to build a larger vernacular economy invisible to those measuring growth. Dare to imagine the practicalities of a radical stance and use the spaces of university and the media to construct rather than to deconstruct.<sup>228</sup> The natural sciences should find themselves learning what it could mean when the humanity scholars of the metaphorical ‘neighboring building’ start to interfere in their notion of innovation. Reclaim politics!

---

<sup>228</sup> Perhaps one might wonder why I wrote a master thesis deconstructing newspaper discourse if I myself find so little use in such overly critical writing. Well, the paradox is tragic. But surely my school writings do not define my political activity?

---

## Word of thanks

---

My master thesis is the final artefact, as usual, of my journey through ‘higher’ education, a time I look back to mostly appreciative. I am grateful for meeting with intellectuals, the time to read and think, the opportunity to learn how to write and argue critically, the feedback of teachers and colleagues and the handful of truly inspiring lectures/seminars that are necessarily rare but worth it. A special thanks of course goes to my supervisors, dr. Robert-Jan Wille (HPS) and dr. Daan Wegener (HPS). Their guidance, patience, open mindedness, feedback, ideas and encouragement have helped me succeed in writing the thesis I wanted to write. They were also among the teachers of the courses I took for the HPS programme that I will remember most fondly. For her support, listening ears, warm hugs, and cartoon drawing skills, I also thank my partner Marie Jacobs. For opening my eyes, but more impressively, for opening my stubborn mind, to the beauty, diversity, and complexity of nature, I thank my parents dr. Kees Rappoldt and dr. Ingrid Weißenhorn, my brother Peter, and their many ecology-minded friends. For a proper thesis-writing preparation I thank my bachelor theses supervisors Melissa Piontek (Physics), who wanted me to write more neutrally, and dr. Joop Koopmans (History), who taught me that neutral writing is impossible. And for inspirational discussions about the relations between science, politics, media, and agriculture, I thank many good friends from activist circles or alternative farms, who will mostly want to remain anonymous, but include Max, Nele, Jana, Vlad, Judicael, Kata, Flo, Tofu, Tania, Dirk, and Robin Barefoot.





---

## Bibliography

---

1. Arendt, H. *Eichmann in Jerusalem: A report on the banality of evil*. New York: Viking Press, 1963.
2. Arendt, H. *The Origins of Totalitarianism*. New York: Harcourt Brace Jovanovich, 1973.
3. Bashford, A. "Population, geopolitics, and international organizations in the mid twentieth century." In *Journal of World History* 19, no. 3 (2008): 327 – 47.
4. Bieleman, J. *Five centuries of farming: A short history of Dutch agriculture 1500 - 2000*. Wageningen: Wageningen academic publishers, 2010.
5. Bonneuil, C. and J. Fressoz, *The shock of the anthropocene: The earth, history and us*. London: Verso, 2017. Translated by D. Fernbach.
6. Bookchin, M. *The philosophy of social ecology: Essays on dialectical naturalism*. Edinburgh: AK press, 2022. First published in 1990.
7. Bowler, P.J. and I.R. Morus, *Making modern science: A historical survey*. Chicago: The university of Chicago press, 2020.
8. Buelens, G. *Wat we toen al wisten: De vergeten groene geschiedenis van 1972*. Amsterdam: Querido facta, 2022.
9. Carson, Rachel. *Silent Spring*. London: Penguin Books, 2000.
10. Christensen, J. "Smoking out objectivity: Journalistic gears in the agnotology machine." In R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance*. Stanford: Stanford university press, 2008: 266 – 282.
11. Cramer, Pieter. *Boer Anar en het grote koeienvlaaiengevecht*. Drawings by Huug Schipper. Den Haag: Uitgeverij Horus, 1997.
12. Dobelli, R. *Die kunst des klugen handelns*. München: Piper Verlag, 2019.
13. Donati, P. "Political discourse analysis." In M. Diani and R. Eyerman (eds), *Studying collective action*. London: Sage publishers, 1992: 136 – 167.
14. Gelderloos, P. *The solutions are already here: Tactics for ecological revolution from below*. London: Pluto press, 2022.
15. Gurevitch, M. et al. (eds). *Culture, society and the media*. London: Methuen, 1982.
16. Haalboom, F. "De man die de Nederlandse bio-industrie van voer voorzag én daar zo zijn ecologische bedenkingen bij had." In *Wonderkamer* 5 (2022): 50 – 56.
17. Hajer, M.A. *The Politics of Environmental Discourse: Ecological Modernization and the Policy Process*. Oxford: Clarendon Press, 1995.
18. Hecht, D.K. "Rachel Carson and the rhetoric of revolution." In *Environmental history* 24, nr. 3 (2019): 561 – 582.
19. Huckin, T. "Textual silence and the discourse of homelessness." In *Discourse & Society* 13, nr. 3 (2002): 347 – 372.
20. Huxley, A. *Brave New World Revisited*. London: Chatto & Windus, 1974. Originally from 1932.
21. Illich, I. and S. Samuel (ed). *Beyond economics and ecology: The radical thought of Ivan Illich*. London: Marion Boyars, 2015.
22. Ivell, D.M. "Phosphate fertilizer production: From the 1830s to 2011 and beyond." In *Procedia engineering* 46 (2012): 166 – 171.
23. Jameson, F. *Postmodernism, or the cultural logic of late capitalism*. London: Verso, 1993.
24. Jaspers, A. *Stikstoffuik: Politici in de ban van de ecolobby*. Amsterdam: Blauwburgerwal, 2023.

25. Johns, A. "Print and public science." In R. Porter (ed.), *The Cambridge history of science Volume 4: Eighteenth-century science*. Cambridge: Cambridge university press, 2003: 536 – 560.
26. Kästner, E. *Das fliegende Klassenzimmer*. Copenhagen: Easy Readers, 2015. Originally published in 1933.
27. King, F.H. *Vierduizend jaar kringlooplandbouw*. Delft: Eburon, 2011. Originally titled *Farming of forty centuries: Permanent agriculture in China, Korea and Japan* (1911), translated by Sietz Leeftang.
28. Klein, N. *This changes everything: Capitalism Vs. the climate*. New York: Simon & Schuster, 2014.
29. Knepper, S. "Gabriel Marcel: Mystery in an age of Problems." In *Critics of Enlightenment Rationalism*, edited by G. Callahan and K.B. McIntyre. Cham: Palgrave Macmillan, 2020: 125 – 137.
30. Kuhn, T.S. "The nature and necessity of scientific revolutions." In *Philosophy of science: The central issues*. Edited by M. Curd, J.A. Cover and C. Pincock. Ney York: W.W. Norton & Company, 2013: 79 – 93. Originally published in T.S. Kuhn, *The structure of scientific revolution*. Chicago: University of Chicago Press, 1996.
31. Labatut, B. *When we cease to understand the world*. London: Pushkin press, 2020. Translated from the Spanish by A.N. West.
32. Lijster, T. "Voorwoord: Hoeveel dimensies verdraagt de mens?" In *De eendimensionale mens*. Amsterdam: Polak & Van Genneep, 2023.
33. Madhumita, S. "The State, Scientists, and Staple Crops: Agricultural 'Modernization' in Pre-Green Revolution India." In *Agricultural History* 87, no. 2 (2013): 201 – 223.
34. Malm, A. *How to blow up a pipeline*. London: Verso, 2021.
35. Marcuse, H. *De eendimensionale mens: Studie over de ideologie van de geavanceerde industriële samenleving*. Amsterdam: Polak & Van Genneep, 2023. Originally titled, *One-dimensional man: Studies in the ideology of advanced industrial society* (1964).
36. Mennen, K. "De 'polder'-strategie van de natuurbeschermingsbeweging in Nederland, 1930 – 1960." In *Tijdschrift voor geschiedenis* 134, nr. 3 (2021): 425 – 447.
37. Mennen, K. "The history of a communication problem: Conflict between Dutch nature conservation and agriculture." In *On History* (2021): <https://blog.history.ac.uk/2021/02/the-history-of-a-communication-problem-conflict-between-dutch-nature-conservation-and-agriculture/> (last checked on 15-06-2023).
38. Milton, K. *Environmentalism and cultural theory: Exploring the role of anthropology in environmental discourse*. London: Routledge, 1996.
39. Monbiot, G. *Regenesis: Feeding the world without devouring the planet*. Ney York: Penguin books, 2022.
40. Montgomery, D.R. *Dreck: Warum unsere Zivilisation den Boden unter den Füßen verliert*. München: Oekom Verlag, 2010. Originally titled *Dirt: The erosion of civilization* (2007), translated by Eva Walter.
41. Mullen, A. and J. Klaehn, "The Herman-Chomsky propaganda model: A critical approach to analyzing mass media behavior." In *Sociology Compass* 4, nr. 4 (2010): 215 – 229.
42. Oreskes, N. and E.M. Conway. "Challenging knowledge: How climate science became a victim of the cold war." In R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance*. Stanford: Stanford university press, 2008: 55 – 89.
43. Oreskes, N. and E.M. Conway. *Merchants of doubt: How a handful of scientists obscured the truth on issues from tobacco smoke to global warming*. London: Bloomsbury, 2011.

44. Oudman, T. *Uit de shit: Pleidooi voor meer boeren en minder vee*. De correspondent: 2023.
45. Owen, A. *The Place of Enchantment: British Occultism and the Culture of the Modern*. Chicago: University of Chicago Press, 2004.
46. Partridge, M. *Alexander Herzen (1812 – 1870): Prominent figures of Slav culture*. Paris: Presses universitaires de France, 1984.
47. Paull, J. “The Betteshanger summer school: Missing link between biodynamic agriculture and organic farming.” In *Journal of organic systems* 6, nr. 2 (2011): 13 – 26.
48. Paull, J. “The pioneers of biodynamics in Great Britain: From Anthroposophic farming to organic agriculture (1924 – 1940).” In *Journal of environment protection and sustainable development* 5, nr. 4 (2019): 138 – 145.
49. Perelman, C. and L. Olbrechts-Tyteca, *The new rhetoric: A treatise on argumentation*. Notre Dam: University of Notre Dam press, 1969. Translated from the French (1958).
50. Phillips, T. *Humans: A brief history of how we fucked it all up*. London: Wildfire, 2018.
51. Ponting, C. *A green history of the world: The environment and the collapse of great civilizations*. London: Penguin books, 1993.
52. Proctor, R.N. “Agnotology: A missing term to describe the cultural production of ignorance (and its study).” In R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance*. Stanford: Stanford university press, 2008: 1 – 33.
53. Proctor, R.N. and L. Schiebinger (eds). *Agnotology: The making & unmaking of ignorance*. Stanford: Stanford university press, 2008.
54. Rome, A. “‘Give Earth a Chance’: The Environmental Movement and the Sixties.” In *Journal of American History* 90, no. 2 (2003): 525 – 54.
55. Sacks, O. *De man die zijn vrouw voor een hoed hield*. Amsterdam: Bezige bij, 2018. Originally titled *The man who mistook his wife for a hat* (1985).
56. Saha, Madhumita. “The State, Scientists, and Staple Crops: Agricultural ‘Modernization’ in Pre-Green Revolution India.” In *Agricultural History* 87, no. 2 (2013): 201 – 23.
57. Scott, J.C. *The Art of Not Being Governed: An Anarchist History of Upland Southeast Asia*. New Haven: Yale University Press, 2009.
58. Shapin, S. and S. Shaffer. *Leviathan and the air-pump: Hobbes, Boyle, and the experimental life*. Princeton: Princeton university press, 2011. Originally published in 1985.
59. Shiva, V. *The violence of the green revolution*. Mapusa: The other India press, 1991.
60. Shiva, V. *Who really feeds the world?* London: Bloomsbury, 2023. Originally published as *Chi nutrirà il mondo?* Milan: Giangiacomo Feltrinelli, 2015.
61. Smil, V. *Enriching the earth: Fritz Haber, Carl Bosch, and the transformation of the world food production*. London: MIT press, 2001.
62. Smithson, M.J. “Social theories of ignorance.” In R.N. Proctor and L. Schiebinger (eds), *Agnotology: The making & unmaking of ignorance*. Stanford: Stanford university press, 2008: 209 – 229.
63. Smouter, K. *Blauw Wit Rood: De boerenopstand als Spiegel voor Nederland*. Amsterdam: Bezige bij, 2022.
64. Soby, S. “Thomas Malthus, Ester Boserup, and agricultural development models in the age of limits.” In *Journal of Agricultural and Environmental Ethics* 30, no. 1 (2017): 87 – 98.
65. Stengers, I. *Another science is possible: A manifesto for slow science*. Cambridge: Polity press, 2018. Translated by Stephen Muecke.

66. Stengers, I. *Cosmopolitics I: The science wars, the invention of mechanics, thermodynamics*. Minneapolis: University of Minnesota press, 2010.
67. Stewart, C.O. “A rhetorical approach to news discourse: Media representations of a controversial study on ‘reparative therapy’.” In *Western journal of communication* 69, nr. 2 (2005): 147 – 166.
68. Stewart, L. *The rise of public science: Rhetoric, technology, and natural philosophy in Newtonian Britain, 1660 – 1750*. Cambridge: Cambridge university press, 1992.
69. Stonemason, E. “Everyone is at liberty to be a fool: Schopenhauer’s philosophical critique of the art of persuasion.” In *Epoché* 24, no. 1 (2019): 133 – 154.
70. Van Grinsven, H. and M. van Eerdt. “Dertig jaar mestbeleid.” In *Bodem* 6 (2020): 20 – 22.
71. Venturini, T. “Diving in magma: How to explore controversies with actor-network theory.” In *Public understanding of science* 19, nr. 3 (2010): 258 – 273.
72. Vernadsky, V. “The biosphere and the noösphere.” In *American scientist* 33, nr. 1 (1945): 1 – 12.
73. Warde, P., L. Robin, and S. Sörlin. *The environment: A history of the idea*. Baltimore: Johns Hopkins university press, 2018.
74. Whyte, D. *Ecocide: Kill the corporation before it kills us*. Manchester: Manchester university press, 2020.
75. Wijnberg, R. “Voorwoord.” In *Dit was het nieuws niet*. De correspondent, 2018.
76. Zander, H. *Anthroposophie in Deutschland: Theosophische Weltanschauung und Gesellschaftliche Praxis 1884 – 1945*. Göttingen: Vandenhoeck & Ruprecht, 2007.

**Primary source text referenced besides newspapers**

- ✓ FAO agriculture series. *The state of food and agriculture 1975: A mid-term review and appraisal*. Printed in Italy, 1976.
- ✓ Meadows, D.L. *The limits to growth: A report for the Club of Rome project on the predicament of mankind*. New York: Universe books, 1972.
- ✓ Nicolas de Caritat, J.A. and Marquis de Condorcet, *Sketch for a historical picture of the progress of the human mind* (New York: Noonday press, 1955), translated by J. Barraclough, edited by S. Hampshire, originally published in 1795.
- ✓ Pol Puype, Guido Beauchez and Menno Jongtsma. *Van Kiem tot Korrel*. Beauchez, 1979. Published on the occasion of 50 years Dutch nitrogen society (NSM) N.V. 1929 – 1979.
- ✓ Shelley, M.W. *Frankenstein, or, the Modern Prometheus: The 1818 Text*. Edited by Nick Groom. Oxford: Oxford University Press, 2018.

---

## Appendix A: Timeline of main events

---

This is not nearly an attempt to give a complete list of ‘important’ events relating to the history of the nitrogen dispute in the Netherland. Most of these dates simply happened to come on my path during the reading of my sources. I include it here for the sake of representing the events that sparked journalistic interest at the time, leading to the production of news.

- 1905: Founding of Natuurmonumenten (Dutch conservation organization)
- 1929: Founding of Dutch Nitrogen Society (NSM)
- 1954: Founding of agricultural board (landbouwschap)
- 1957: Formation of national institution for biological field-research
- 1970: European year for nature protection N-70
- 1970: FAO World food congress in The Hague
- 1971: Founding of Milieudefensie
- 1972: *Urgentienota* by minister Stuyt of public health
- 1972: UN world food congress in Stockholm
- 1972: Year of alarmism, publication by Club of Rome
- 1973: Oil crisis, 400% price increase
- 1974: Publication of report on alternative agriculture by research commission issued by minister Lardinois of agriculture.
- 1974: Conference in Bucharest by UN
- 1974: FAO conference in Rome
- 1974: World population year
- 1977: Publication of report on alternative agriculture by research commission (initiative of J. Plantinga)
- 1979: Oil crisis, 100% price increase
- 1979: Conference in Rome UN, action plan needed against poverty and starvation
- 2013: *Our Nutrient World* publication
- 2015: Alarm raised publicly by Erisman
- 2022: New environmental law (*omgevingswet*)

## Appendix B: Overview of the fertilizer dispute

Controversy	Environmentalists, idealist, system- reformist position	Criticisms (in black go in both directions)	Technocratic, pragmatic, system- conformist position
Conservation, pollution (3.2.1.)	<p>Decreasing bio-diversity Sympathy for nature Precautionary principle Care for future generations</p> <p>Destruction of ecosystems</p> <p>Countryside has been degraded socio-economically. There is not enough jobs in modern agriculture</p> <p>Changes in mentality and culture needed. Responsible consumption and waste-recycling are key.</p>	<p>Accusations of hypocrisy</p> <ul style="list-style-type: none"> <li>- Consumers</li> <li>- Researchers</li> <li>- Who determines what needs conservation?</li> </ul> <p>Denying loss of Dutch nature</p> <p>Arguing that there is no Dutch nature left to protect</p> <p>Alternative business models exist (bio-farm)</p> <p>If capitalism is used as an excuse, then capitalism is the problem</p> <p>Call for international policy is what allows local governments to change nothing</p>	<p>Business interests of Dutch farm, dealing with European law (about milk-price) and market competition</p> <p>Large debt and investments in new technologies Not easy to change Romantic farm is illusion of the past</p> <p>Farmers should be paid for environmental hygiene or landscape management</p> <p>High efficiency on smaller surface is best for conservational purposes (eco-modernist) + Water cleaning installations</p>
<b>Controversy</b>	<b>Environmentalists, idealist, system- reformist position</b>	<b>Criticisms (in black go in both directions)</b>	<b>Technocratic, pragmatic, system- conformist position</b>
World food crisis, population growth (3.2.2.)	<p>Starvation is not only alternative to fertilizers</p> <p>There are biological alternatives. Small farmers are more efficient per surface area</p> <p>Producing sustainably is more important than to produce enough food now. Postponing</p>	<p>Birth control needed but only possible by reducing poverty</p> <p>Not more food, but better distribution of food and means of production needed</p> <p>Modern technology and business investments increased inequality in 'developing world',</p>	<p>Fertilizers are necessary to feed the world, especially with growing population -&gt; green revolution</p> <p>Philanthropy Post-colonial responsibility Spreading Western superior agricultural knowledge and methods</p>

	<p>starvation is no solution.</p> <p>Arguments of global problems should not prevent us, in the Netherlands, from producing food sustainably. Our local circumstances should be discussed separately from green revolution rhetoric.</p>	<p>reaching opposite goal</p> <p>Green revolutions real intention and result was creating agricultural production for the West, based on global inequality and hidden colonial relationships</p> <p>Universalist agricultural technologies are badly adapted for soil- and climate circumstances in global south.</p> <p>Bio-farming is not efficient enough to feed the world</p>	<p>Green revolution, if anything, has at least increased economic strength of ‘developing world’</p> <p>Important that the Netherlands can feed itself (self-sufficiency)</p>
<b>Controversy</b>	<b>Environmentalists, idealist, system-reformist position</b>	<b>Criticisms (in black go in both directions)</b>	<b>Technocratic, pragmatic, system-conformist position</b>
Bio-farming versus Conventional farming (3.2.3.)	<p>By destroying natural resilience of the soil, we invite plant diseases, making more chemicals needed in the future (vicious circle)</p> <p>Fertilizers are a threat to soil and bio-environment</p> <p>Composting city waste and using all animal manure, we would not need to produce fertilizers</p> <p>Bio-farming is almost as productive per surface area as conventional farming</p> <p>New technological innovation for bio-farms can level the playing field</p>	<p>Agriculture is not the biggest polluter of nitrogen. Change the target of your criticism</p> <p>Can we not do a bio-experiment, changing 10% of all farms, to get more data?</p> <p>City waste is poisoned with medicine, heavy metals and washing detergent</p> <p>Bio-farming is not efficient enough to run a viable business</p> <p>Scientists need to take bio-farming seriously to gather more data</p> <p>Bio-farms can offer more employment on the country-side</p>	<p>Fertilizers cause less environmental pollution per unit of crop-yield than manure/dung</p> <p>It would be cleanest to dump all animal excrements in the ocean</p> <p>Bio-farming is not nearly as productive as conventional farming in terms of hours of human labour/unit of yield</p> <p>Lower surface-efficiency in agriculture would demand a larger land-surface for human production, leaving less space to nature</p> <p>Better education of farmers would reduce unnecessary careless use of fertilizers</p>

Controversy	Environmentalists, idealist, system- reformist position	Criticisms (in black go in both directions)	Technocratic, pragmatic, system- conformist position
Diet-culture, consumers, food quality (3.2.3.)	<p>Paying more for food is largely a matter of mentality (in Dutch context)</p> <p>What is too expensive is determined by what you include in the price</p> <p>Eating less animal products is solution to lower efficiency of bio-farming</p>	<p>Reform-shops and bio-food is elitist</p> <p>Conventional agriculture has selected less tasty and less nutritious crop-species for efficiency purposes</p> <p>Better superstitious alchemists than environmental pollution</p>	<p>Food produced with fertilizers is equally healthy and nutritious</p> <p>Livestock can be fed compound quality feed to balance their bad diets from fertilized grass-lands</p>
Ideology	<p>Thinks of technocracy as symptom-management that is destructive, exploitive and/or not sustainable on the long run</p> <p>Values of resilience, sustainability, diversity and inclusion. Looks for social and cultural solutions, in combination with locally adapted technologies.</p>	<p>Criticism of problem-reductionism (sectionalism?)</p> <p>Criticism of elitism</p> <p>Doubting feasibility</p> <p>Challenging claims of necessity</p> <p>Doubting real intentions. Criticism of capitalist opportunism</p>	<p>Thinks of environmentalism as utopian, a way of life that is only available to elites</p> <p>Values of efficiency and economic growth. Looks for universal technological solutions. Eco-modernist.</p>



---

## Appendix C: Table of newspaper sources

---

This appendix gives an overview of the newspaper sources used in this thesis. During my research this table functioned as a way of keeping track of my archive and sorting (by date) all the various titles, rough political/cultural/social positions, types of text and important authoritative figures in references (ref). The numbers (#) are used throughout this thesis as an easy way of referencing the position of the source-text in this table.

### Types of text

- Advertisement
- Reader's letter
- News: Information about recent events or developments
- Opinion: An argumentative piece
- Report: Clearly containing references to research, conferences, political meetings. Reporting what others have said.
- Book review
- Interview
- Story, personal experience: More of a poetic, highly subjective kind of text that tries to touch emotionally more than to be informative.
- Household or gardening advice: Guidebook-like text for do-it-yourself (DIY) projects.
- Speech: Textual form of what had previously been a publicly spoken word.

Table starts on next page with a landscaped page-orientation.

For the meaning of the coloured position labels see paragraph 1.4. and figure 3.

**Bio**: Positioning in favour of alternative agriculture or related ideology

**Con**: Positioning in favour of conventional agriculture or related ideology

**Dou**: Article appearing twice (in highly similar way) within sample

**Irr**: Not or barely used for this thesis due to less relevant content

**Neu**: Unclearly positioned

Date	Newspaper	Title article	Author/Reference	Pos.	Type of text	#
1952	Algemeen handelsblad	Compost onmisbaar voor land- en tuinbouw	Unknown	Bio	Report, opinion	1
1952	Nieuwsblad vh zuiden	Asef Kunstmest maakt van 'n doodgewoon tuintje een ware luthof	B.J. van Eijsden	Con	Advertisement	2
1953	Vrije Volk	Huisvuil kan bodem weer vruchtbaar maken	Unknown	Bio	Report, opinion	3
1955	Eindhovens dagblad	“Is er een keerzijde aan de kunstmestmedaille?": Kunstmestgebruik vraagt kennis	Prof. dr. A. Schuffelen (ref)	Con	Report, opinion	4
1955	Nieuwe Tilburgse courant	De plant heeft èn organische èn kunstvoedingstoffen nodig: Gebruik van kunstmest levert 200 miljoen mensen voedsel	Prof. dr. A. Schuffelen (ref)	Dou	Report, opinion	5
1955	Volkscrant	Achterstallig tuinwerk moet worden ingehaald	Unknown	Con	Gardening advice	6
1956	Algemeen handelsblad	Biochemische grondslagen en problemen	Prof. dr. L. Seekles	Con	Report	7
1959	Algemeen handelsblad	Voedselnood in India	Unknown	Con	Report	8
1960	Trouw	Nog miljoenen ondervoede mensen	FAO (ref)	Con	Report	9
1961	Algemeen dagblad	Reservaten voor paardenbloemen?: Nederland gaat nu onkruid beschermen	Unknown	Bio	News, opinion	10
1961	Trouw	Gezichtskring van jongere generatie veel wijder	B. van Krimpen (96 years old)	Con	Personal experience	11
1962	Leeuwarder courant	Public relations voor landbouw van start	Prof. dr. A. Kraal (ref), prof. dr. H.W.J. Bosman (ref)	Irr	News	12
1962	Nieuwe Haarlemse courant	Goed en kwaad in de voeding van morgen: Intensieve research hard nodig	Prof. Kul (ref), e.a.	Bio	Report, opinion	13
1965	Algemeen dagblad	Overdaad en schamelheid	FAO (ref), Prof. Gunnar Myrdal (ref)	Con	Opinion, report	14
1965	Trouw	Luchtverontreiniging nationaal probleem: Bestrijding ten koste van belangrijke investeringen	Unknown	Con	Report	15
1966	De Tijd	Naast vreugde ongerustheid over de gestegen welvaart: Kortzichtigheid en individualisme	Dr. J.G. ten Houten (ref)	Bio	Report, opinion	16

1966	Leeuwarder courant	Geen hongersnood zonder gif of kunstmest?	Ir. J.P. Haisma van Bergum (ref)	Bio	News, opinion	17
1966	Telegraaf	Hulp aan India was bittere noodzaak	Wim van Geffen	Neu	Report, opinion	18
1967	Nieuwe Winterswijkse courant	Vakantieganger zoekt in Winterswijk rust en stilte	Unknown	Bio	Opinion, Personal experience	19
1968	Vrije Volk	Armoede ontwikkelingslanden het grote vraagstuk: Iets van eigen vooruitgang opgeven	Prof. J. Tinbergen	Neu	Opinion	20
1969	Nieuwsblad vh noorden	Mijnheer de voorzitter, dames en heren!	Hans Kok	Con	Opinion	21
1969	Volkskrant	Milieu-biologen verontrust over de vervuiling in de natuur	Unknown	Bio	Opinion, report	22
1969	Volkskrant	Strijd om kwaliteit van ons milieu grote uitdaging	Ton Jacobs	Bio	Report, opinion	23
1970	Algemeen dagblad	Experiment met ziektevrrije veldvruchten: Tovenaar met tomaat	Dave Heins, Jan Bruinsma (ref)	Con	Report, news	24
1970	De Waarheid	Vervuiling leefmilieu valt te stuiten	Biologist Drs. De Smidt (ref)	Bio	Opinion	25
1970	Leeuwarder courant	Zet cultuurgrond weer om in natuurgebied	Drs. J.T. de Smidt (ref)	Dou	Opinion	26
1970	Limburgsch dagblad	De Limburger wordt mentaal bedreigd	Henk Thonen	Bio	Opinion, Report	27
1970	Limburgsch dagblad	Expansie van natuurgebied is een dwingende noodzaak	Drs. J. de Smidt (ref)	Dou	Opinion	28
1970	Limburgsch dagblad	<i>Het verstoorde evenwicht</i> , boek dat verontrust	Sante Brun	Con	Book review	29
1970	Nieuwe Limburger	Landbouw onmisbaar voor milieuhygiëne	Ir. M.G. Wagenaar Hummellink (ref)	Con	Opinion	30
1970	Nieuwsblad vh noorden	“Vieze Lucht” wordt komende 10-20 jaar zeker 2 maal zo erg	Prof. dr. M.F. Mörzer Bruyns (Natuurbeheer Wageningen) (ref)	Bio	Opinion, report	31
1970	Nieuwsblad vh noorden	Kunstmest geen bedreiging voor het milieu	C.M.J. Sluijsmans (ref), G.J. Kolenbrander (ref)	Con	Report, opinion	32

1970	Nieuwsblad vh noorden	Waarom natuurbehoud	Prof. dr. D. Bakker	Neu	Opinion	33
1970	Nieuwsblad vh noorden	Welvaart voor niets zonder leefbaar milieu	Dr. D.J. Kuenen	Neu	Interview	34
1970	Nieuwsblad vh noorden	Zuiveren	Ir. H. Meijer (ref)	Bio	Opinion	35
1970	NRC	In de natuur valt weinig meer te zien	F.G. de Rutter	Bio	Opinion, personal experience	36
1970	Telegraaf	Verontreiniging groot gevaar voor nageslacht	Prof. dr. D.J. Kuenen (ref), prof. dr. A.G.M. van Melsen (ref)	Bio	Report, opinion	37
1970	Trouw	Milieuverontreiniging is geen loze kreet	IUBS (ref), IBP (ref), TNO (ref)	Bio	Report, opinion	38
1970	Volkskrant	Beperk in rijke landen "koloniale" industrie	FAO directeur Dr A. Boerma (ref)	Con	Opinion	39
1970	Volkskrant	Indonesië in het moeras: Aziatische boeren wachten op "groene revolutie"	Unknown	Con	Report	40
1970	Volkskrant	Wereld voedsel congres bespreekt strategie voor komende 15 jaar	FAO (ref)	Con	Report, news	41
1971	De Tijd	Chemie is zaak van leven en dood	Unknown	Irr	Opinion	42
1971	De Tijd	Herman Kahn denkt na over het ondenkbare: Kloof tussen rijke en arme landen zal nooit worden gedempt	Bernard Levin, Herman Kahn (ref)	Neu	Interview	43
1971	De Tijd	Nieuw vegetarisme	Jeugdwerk Nu	Bio	Opinion, news	44
1971	De Tijd	Optreden kabouters enorme stimulans, Reformwinkels in trek: Biologisch-dynamische voeding wint veld	Marijke Rawiet	Bio	News	45
1971	De Waarheid	Sowjet Unie: Het Vijfjarenplan 1971 - 1975	Unknown	Irr	Report	46
1971	Het Parool	Vuilspuiters	Unknown	Con	Opinion	47
1971	Nieuwe Limburger	Milieuprobleem is niet onoplosbaar	Prof. dr. P. Korringa van RIVO (ref)	Con	Interview	48

1971	NRC	Landbouwvergiften in welles-nietes sfeer	A. de Kool, dr. S.L. Mansholt (ref), dr. N. Borlaug (ref)	Bio	Report, news	49
1971	NRC	Leren vooruitzien in een geïndustrialiseerde wereld	Dr. ir. W.J. Beek van Unilever research	Irr	Opinion	50
1971	NRC	Reformwinkels	Ir. J.A. van Riel	Con	Reader's letter	51
1971	NRC	Reformwinkels vinden erkenning	Unknown	Bio	Report, news	52
1971	Tubantia etc. (!)	Wat gaan we doen met onze wasmiddelen	N.V.Z.	Con	Advertisement	53
1972	Algemeen dagblad	'Geen kunstmest, geen voedsel': Boeren moeten juist worden voorgelicht	Ir. C.S. Knottnerus (ref)	Con	News, opinion	54
1972	Algemeen dagblad	Prof. Polak ziet mogelijkheden voor straks, maar: "We moeten wel opschieten"	Gé Simons, prof. dr. Fred L. Polak (ref)	Con	Interview	55
1972	De Tijd	Wij naderen de grens	Vic Langenhoff, prof. dr. D.J. Kuenen (ref)	Bio	Interview	56
1972	Gereformeerd gezinsblad	We gebruiken niet voor ons plezier "kunst"-middelen	German farmer Alwin Seifert (ref), ir. Knottnerus (ref)	Con	Report, opinion	57
1972	Leeuwarder courant	Hersenschimmen	R. de Jong	Con	Reader's letter	58
1972	Leeuwarder courant	Te lage steun is ook duur	Mansholt (ref)	Con	Report, opinion	59
1972	NRC	De kleine aarde	Wouter van Dieren	Bio	Opinion	60
1972	NRC	Eén jaar Club van Rome: het vergeten is begonnen	Wouter van Dieren, dr. J. Terlouw (ref)	Bio	Opinion, report	61
1972	NRC	Geen landbouw zonder chemie	Ir. C.S. Knottnerus (ref)	Con	Report, opinion	62
1972	NRC	Geen landbouw zonder chemie	Ir. C.S. Knottnerus (ref)	Dou	News, opinion	63
1972	NRC	In naam van de vooruitgang! Van wie, zei u?	Wouter van Dieren	Bio	Opinion	64
1972	NRC	Landschapsparken kunnen niet zonder landbouwbedrijven	Ir. S. Herwijer (ref)	Con	Report, opinion	65
1972	NRC	Plan om in leven te blijven	W. Woltz	Bio	Opinion	66

1972	NRC	Sommige mensen ruiken stank voor ze kunnen ruiken	P.J. Kat, Boer Arie Schermerhorn (ref)	Con	Interview	67
1972	NRC	Zon schoonste energiebron voor de landbouw	Ecoloog Jacques de Smidt	Bio	Opinion	68
1972	Parool	Mens en natuur in botsing	Prof. dr. W. Brand, prof. dr. J. Pen (ref), prof. dr. J. Tinbergen (ref), J.W. Forrester (ref), D.L. Maedows (ref)	Con	Opinion	69
1972	Telegraaf	Meer waardering voor "biologische" landbouw	John Wessel	Bio	Opinion, news	70
1972	Trouw	Bestrijdingsmiddelen bittere noodzaak	Ir. Knottnerus (ref)	Dou	Report, opinion	71
1972	Trouw	Bezorgde Sietz Leeftang gaat boerderij beginnen	Sietz A. Leeftang (ref)	Bio	Report, news	72
1972	Trouw	Grijsdruk voor overleving	Drs. Rob Foppema	Irr	Opinion, report	73
1972	Trouw	Tuinieren zonder vergif	Henk van Halm	Bio	Household or gardening advice	74
1972	Tubantia	Bestrijdingsmiddelen blijven nog nodig	C.S. Knottnerus (ref) and minister Stuyt (ref)	Dou	News	75
1972	Tubantia	Chemische middelen niet meer te stuiten	A Mulder (WUR) (ref)	Con	Report, opinion	76
1972	Tubantia	Chemische middelen niet meer te stuiten	A. Mulder (ref)	Dou	Report, opinion	77
1972	Tubantia	Stichting Biorga stimuleert de biologische land en tuinbouw	Unknown	Bio	News	78
1972	Volkskrant	Kleiner milieu: schoner milieu	Ton Jacobs, dr. J.Ch.W. Verstege van CBS (ref)	Bio	Report, opinion	79
1972	Volkskrant	Macrobiotiek is meer dan alleen gezond eten	Jos Klaassen	Bio	Opinion, report	80
1972	Volkskrant	Milieuzorg eist meer hulp aan arme landen	Harry Lockfeer	Bio	Report, news	81

1972	Volkskrant	Technologie bron van milieucrisis	Hans Friedeman, dr. Barry Commoner (ref)	Bio	Report, opinion	82
1972	Vrije Volk	De biologische boer	Norman Borlauch (ref), ir. P. Cornelius (ref)	Bio	Report, opinion	83
1972	Vrije Volk	Je moet het gras niet in de stad halen	Kees Weeda, Louis le Roy (ref)	Irr	Report, opinion	84
1972	Vrije Volk	Straks nog maar voedsel voor de helft van ons	Unknown	Bio	Report, news	85
1973	De Tijd	“Wereldvoedselsituatie is griezelig”: Brussel overweegt minder garanties voor boer	Ir. P.J. Lardinois (ref), European commission (ref)	Neu	Report	86
1973	De Tijd	Slag om het platteland	Vic Langenhoff	Bio	Opinion, Report	87
1973	Leeuwarder courant	Eierzoeker gediscrimineerd ten opzichte van de jager	J. Spijkerman (ref)	Irr	Report, opinion	88
1973	Nieuwe Winterswijksche courant	Wat is er mis?: Kan de landbouw geen goed meer doen?	W. Boshuis	Con	Opinion	89
1973	Nieuwsblad vh noorden	Het milieu kèn me wat	Jan van Luyn	Con	Opinion, personal experience	90
1973	Nieuwsblad vh noorden	In gesprek met Jonkheer H. van Nispen van Sevenaer, kunstmestvrije boer	Tony van der Meulen	Bio	Story, Radio interview	91
1973	NRC	Belangstelling, maar ook veel kritiek op biologische landbouw	F. Ph. Groeneveld	Con	Report, opinion	92
1973	NRC	Gaat de wereld nu onder of niet?	Wouter van Dieren	Bio	Report, opinion	93
1973	NRC	Landbouw minstens zo goed zonder bestrijdingsmiddelen	Commissie tot onderzoek van de biologische landbouwmethoden (ref)	Bio	Report, research conclusions	94
1973	NRC	Landbouw zonder gif	Jhr. Van Nispen van Sevenaer (ref)	Bio	Report, opinion	95

1973	NRC	Wilde tuinen van Le Roy op papier	F.G. de Ruiter, Louis le Roy (ref)	Irr	Book review	96
1973	NRC	Zoals de waard is vertrouwt hij ons	J.J. Vis	Bio	Report, opinion	97
1973	Tubantia	De wèrkelijke problemen van het milieu zijn anders	Unknown	Bio	Opinion	98
1973	Tubantia	Werkgroep milieubeheer wil beleid op beperking van kindertal	Ir. C.N. van der Meulen (ref)	Bio	Report, opinion	99
1973	Volkskrant	Groeien of sterven: DSM wil eigen oliebron	Ruud Horeman, W.A.J. Bogers (ref)	Con	Report, news	100
1973	Vrije Volk	Stankgolf	Drs. S.P. de Roos, D.L.C. Lindhout	Bio	Reader's letter	101
1974	De Tijd	Milieuvriendelijk verkavalen? Moet dit zo doorgaan?	Vic Langenoff	Irr	Opinion, report	102
1974	De Tijd	Tekort aan kunstmest een ramp voor Azie	Vic Langenhoff, FAO (ref), prof. C. de Wit (ref)	Con	Report, opinion	103
1974	Gereformeerd gezinsblad	Moeilijke middenweg	Unknown	Con	Opinion, report	104
1974	Het Parool	Te veel mensen, te weinig voedsel	Mattijs de Vreede	Bio	News	105
1974	Leeuwarder courant	Bijgeloof over landbouw neemt snel toe	Dr. P.B. de Boer (ref)	Con	Opinion, report	106
1974	Leeuwarder courant	Chemische landbouw	J. Mook	Bio	Reader's letter	107
1974	Limburgsch dagblad	"Ik vind de Club van Rome wel erg somber"	Ben Romijn, W. Bogers van DSM (ref)	Con	Opinion, interview	108
1974	Limburgsch dagblad	Mergelland rijp voor natuurpark	J.W. van Gils	Irr	News, report	109
1974	Limburgsch dagblad	Pleidooi voor kunstmest	Prof. A. Schuffelen (ref)	Con	News	110
1974	Nieuwsblad vh noorden	Boeren leggen noorden lam	Unknown	Neu	News, report	111
1974	NRC	Alternatieve landbouw remt voedselproductie	F. Ph. Groeneveld	Con	Opinion	112
1974	NRC	Bestaan van biologisch voedsel betwijfelt	Steven de Winter, WHO (ref)	Con	Research conclusions	113



1974	NRC	Nieuwe klassenstrijd: De greep naar het platteland	F.Ph. Groeneveld	Neu	Opinion	114
1974	NRC	Opbouw Kleine Aarde gaat te langzaam	F.Ph. Groeneveld	Bio	Report, opinion	115
1974	NRC	Worden grondstoffen wel goed gebruikt nu ICI er de voedselpositie mee kan verbeteren?	ICI Holland BV	Con	Advertisement	116
1974	NRC	Wordt olie wel goed gebruikt...nu ICI er water mee schoon kan krijgen?	ICI	Dou	Advertisement	117
1974	Telegraaf	Jonkheer Van Nispen boekt flink succes voor schone landbouw	André de Kromme, H.R.L. van Nispen van Sevenaer (ref)	Bio	News, report	118
1974	Telegraaf	Kunstmest onmisbaar in voedselproductie	John Wessel	Con	Report, opinion	119
1974	Trouw	Prof. Tinbergen: Internationale concerns onmisbaar	Reuter?, L. Brown (ref), Club of Rome #2 (ref)	Irr	News	120
1974	Tubantia	Over het behoud van ons welzijn	Dr. H. de Klerk	Bio	Speech, report	121
1974	Tubantia	PPR: Barsten in de groei	Unknown	Bio	Report	122
1974	Tubantia	Schat aan informatie over natuur- en milieukwesties	Unknown	Irr	Book review, gardening advice	123
1974	Tubantia	Stalmest vuiler dan kunstmest	Prof. A.C. Schuffelen (ref)	Con	Report, opinion	124
1974	Tubantia	Verbitte stemming in de Gelderse landbouw	Unknown	Irr	News, report	125
1974	Volkskrant	Worden grondstoffen wel goed gebruikt...nu ICI er de voedselpositie mee kan verbeteren	ICI	Con	Advertisement	126
1974	Volkskrant	En toch zijn planten beter dan vlees	Lucas Reijnders, Earl Butz (ref)	Bio	Opinion, report	127
1974	Volkskrant	Kromme Rijn-milieu in kaart gebracht	Minister Vorrink (ref),...	Irr	Report, news	128
1974	Volkskrant	Meer voedsel vergt geld en sociale vernieuwing	Harry Lockefeer	Bio	Opinion, report	129
1974	Volkskrant	Stalmest, Composteren	J. Schrijver, J. Breggeman	Bio	Reader's letter	130

1975	Gereformeerd gezinsblad	Kanttekeningen	P. Jongeling	Neu	Opinion	131
1975	Gereformeerd gezinsblad	Operatie "voedt uzelf" Ghana begint succes op te leveren.	FAO (ref)	Con	Report	132
1975	Leeuwarder courant	Grondpolitiek...	Ir. J. Ybema	Con	Reader's letter	133
1975	Leeuwarder courant	Voor Fries gras is kunstmest nodig	Unknown	Con	Report, opinion	134
1975	NRC	Meer voedsel alleen lost niet op	F. Suasso, dr. A.H. Boerma van FAO (ref)	Neu	Report, opinion	135
1975	NRC	Vrienden van de aarde vechten door	Fleur d'Aulnis	Irr	Report, news	136
1975	Trouw	Bio-Industrie	Henk Graaskamp (Boer in Vorden)	Con	Reader's letter	137
1975	Volkskrant	De ondergangsprefetie van een bioloog	Martin Ruyter, drs. J.T. de Smidt (ref)	Bio	Interview, report	138
1975	Volkskrant	Interesse voor biologisch kweken is groeiende	Harry Rodenburg	Neu	Report, news	139
1975	Vrije Volk	Lof der kunstmest	Prof. A.C. Schuffelen (ref)	Con	Opinion, report	140
1976	Gereformeerd gezinsblad	<i>Dagelijks Brood</i> voor iedereen vraagt aanpassing consumptie- en eetgewoonten	Prof. dr. P. Nijkamp, Brown and Eckholm (ref)	Bio	Book review	141
1976	Leeuwarder courant	Het kan en moet anders	R.J.K.	Bio	Reader's letter	142
1976	Leeuwarder courant	Milieu-Maffia	J. van Boven	Bio	Reader's letter	143
1976	Nieuwsblad vh noorden	Alternatieve landbouw	J. Kuikman (milieuwerkgroep fluitekruid)	Bio	Reader's letter	144
1976	NRC	Kwaliteitskaas op Terschelling? Dat kan wel, maar niet zó	Ir. H. van der Molen	Irr	Report, opinion	145
1976	NRC	Rapport: Woekerwinsten op kunstmest	M. Paumen, drs. A.J.A. Groosman (ref), drs. J.W.A. Vingerhoets (ref)	Bio	Report	146
1976	Vrije Volk	Mansholt eerste van IKON-serie 'Nieuwe ketters'	Dr. S. Mansholt (ref)	Irr	Report, news	147

1977	Algemeen dagblad	Zuinig zijn met de aarde	Els de Groen	Bio	Report, opinion	148
1977	Leeuwarder courant	Boeren en bergen	N.	Irr	Reader's letter	149
1977	Nieuwsblad vh noorden	Alternatieve landbouw uit kabouter-sfeer	Theo Koopman, J. Plantinga (ref)	Neu	Report, opinion	150
1977	NRC	Boeren wantrouwen Haagse 'natuur'	J.W.E. Metselaar	Con	News, opinion	151
1977	NRC	Toekomst vraagt nieuw soort ingenieurs	Ir. S. Rozendaal, dr. Alexander King (ref)	Bio	Report, opinion	152
1977	Volkskrant	Consumenten kunnen agrariërs helpen	T. Straathof	Bio	Opinion, report	153
1978	Amigoe	Acht mythen over de honger	Moore & Collins (ref)	Bio	Research conclusions	154
1978	Gereformeerd gezinsblad	Mens- en milieuvriendelijk ondernemen, kan dat nog in deze tijd?	F.H. Thijsen	Bio	Opinion	155
1978	Leeuwarder courant	Boer en milieu	Hotze Heeg	Con	Reader's letter	156
1978	Leeuwarder courant	De wil tot vooruitgang moet uit de mensen zelf komen	Unknown	Neu	Opinion, news	157
1978	Leeuwarder courant	Een boortoren is niet mooi	Ir. J.M.H. van Engelshoven van de NAM (ref)	Irr	Interview	158
1978	Leeuwarder courant	Landbouwproductie	Unknown	Dou	Report, news	159
1978	Limburgsch dagblad	Moderne landbouw in naoorlogse periode	Unknown	Irr	Opinion	160
1978	Nieuwsblad vh noorden	Kunstmest	Henk van Rijn	Bio	Reader's letter	161
1978	Nieuwsblad vh noorden	Kunstmest al honderd jaar	Unknown	Con	Report, opinion	162
1978	NRC	Een ongeloofwaardig betoog	Wouter van Dieren, ir. H. van der Molen (ref)	Bio	Book review	163
1978	NRC	Landbouw	J.A. Zwikker vd Heijde, Buringh (ref) and Van Heemst (ref)	Bio	Reader's letter	164
1978	NRC	Milieuvriendelijk bedrijf belangrijk voor samenleving	C. Caljè, J. Tinbergen (ref)	Bio	Opinion, report	165
1978	NRC	Vastgeroeste structuren werken innovatie tegen	Ir. S. Rozendaal	Irr	Report, opinion	166

1978	Volkskrant	Boeren op natuurlijke manier	Lambiek Berends, Cuperus broers (ref)	Bio	Report	167
1978	Volkskrant	De hoge prijs van puur natuur	Martin Ruyter	Con	Report, opinion	168
1978	Vrije Volk	Moderne landbouw moet wereld te eten geven	Prof. dr. ir. P. Buringh (ref), ir. H.D.J. van Heemst (ref)	Con	Opinion, report	169
1979	Leeuwarder courant	Milieu-vervuiling	Marianne	Bio	Reader's letter	170
1979	Nieuwsblad vh noorden	Alternatieve technologie in Wales: Groene kolen groeien op grauwe leistehopen	Unknown	Irr	Report, news	171
1979	Nieuwsblad vh noorden	Ontwikkeling landbouw Derde Wereld gaat niet in handomdraai: Oliecrisis verscherpte het voedselprobleem	C. Darwin (ref), OESO (ref)	Con	Report, book review	172
1979	NRC	Conflict tussen milieu en economie is een mythe	F.G. de Ruiter	Irr	Report, opinion	173
1979	NRC	FAO laat de armen in de steek	Dick de Zeeuw (WUR), Vera Kappers (NIO), Wouter Tims (SOW)	Bio	Opinion	174
1979	NRC	Landbouw zonder kunstmest schrappt vlees van menu	Wessel Oudewortel	Bio	Report	175
1979	NRC	Nieuwe aanval op armoede van boeren in Derde wereld	Wout Woltz	Bio	Report, opinion	176
1979	Telegraaf	Werktuigbouwkundige gezocht	Mekog, UKF	Irr	Advertisement	177
1979	Vrije Volk	Ambacht moet ons redden van de chips	Han van den Berg, Hans Bouma (ref)	Irr	Opinion, report	178
1986	NRC	De rol van de overheid en de invoering van nieuwe landbouwtechnologieën in de Derde Wereld: Waarom heeft de "Groene Revolutie" niet in Afrika gewerkt?	Dick de Zeeuw, Wouter Tims	-	Opinion, report	179
1987	Gereformeerd gezinsblad	Erosie bedreigt grond van bestaan	Rudolf de Vries	-	Opinion, report	180