

COUNCIL ON ANIMAL AFFAIRS



The state of the Animal in the Netherlands

REFLECTIONS AND OPINIONS ON THE SHIFTING RELATIONSHIP
BETWEEN PEOPLE AND ANIMALS IN THE NETHERLANDS

Schukken, Y.H., van Trijp, J.C.M., van Alphen, J.J.M. and Hopster, H. (eds)

THE STATE OF THE ANIMAL IN THE NETHERLANDS

REFLECTIONS AND OPINIONS ON THE SHIFTING
RELATIONSHIP BETWEEN PEOPLE AND ANIMALS
IN THE NETHERLANDS

Schukken, Y.H., van Trijp, J.C.M., van Alphen, J.J.M. and Hopster, H. (eds)



COUNCIL ON ANIMAL AFFAIRS

4 October 2019



2019, Council on Animal Affairs, The Hague

© Sommige rechten zijn voorbehouden / Some rights reserved

This publication is subject to usage rights as laid down in the Creative Commons licence

Identification 3.0 The Netherlands. For the full text of this licence, see <http://www.creativecommons.org/licenses/by/3.0/nl/>

E-ISBN: 978-90-830457-2-6

Design: Ellen Bouma

Infographic pages 4-5: Vorm5

Final editing: Linda van den Berg, www.washoe.nl

Production: Martijn de Groot, www.martijndegroot.com

Printing: Xerox

Photographs: see attributions next to the photographs

www.rda.nl

Council on Animal Affairs

Bezuidenhoutseweg 73

2594 AC The Hague

Table of contents

Definitions	6
1. Achieving progress by practicable means	9
INTRODUCTION	
2. The state of the animal in the Netherlands: perspectives among Dutch citizens	17
REFLECTION ON ANIMAL WELFARE IN GENERAL	
3. Living together without boundaries	31
REFLECTION ON ANIMALS IN THE WILD	
4. Towards a circular agriculture with respect for animal dignity	47
REFLECTION ON FARM ANIMALS	
5. Pets, passion and professionalism	67
REFLECTION ON COMPANION AND HOBBY ANIMALS	
6. Funny old birds, for education and enjoyment	89
REFLECTION ON ZOO ANIMALS	
7. Best regulated of all?	99
REFLECTION ON TEST ANIMALS	
8. Nature: a fairy tale?!	117
MORAL FRICTIONS SURROUNDING ANIMALS IN THE WILD	
9. Licence to kill	127
MORAL FRICTIONS SURROUNDING THE KILLING OF ANIMALS	
10. Godwits or cows	145
MORAL FRICTIONS BETWEEN ECOLOGY AND TECHNOLOGY	
11. Animals are just like humans	157
MORAL FRICTIONS SURROUNDING ANTHROPOMORPHISM	
12. Tinkering with animals	165
MORAL FRICTIONS SURROUNDING GENETIC MODIFICATION IN ANIMALS	
13. Animals and regulations	175
MORAL FRICTIONS SURROUNDING LAWS AND REGULATIONS	
14. From ruler to steward to partner	185
FINAL REFLECTION ON THE STATE OF THE ANIMAL IN THE NETHERLANDS	
Publication details	198

The State of the animal in

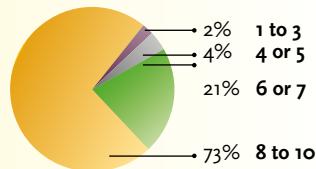
Achieving progress by practicable means

We hope to inspire you with this compilation of survey results, reflections on various animal groups and essays on moral frictions.

The state of the animal in the Netherlands: perspectives among Dutch citizens

How do Dutch citizens assess animal welfare and the way we treat animals? Has any progress been made?

The extent to which people are concerned about animal welfare

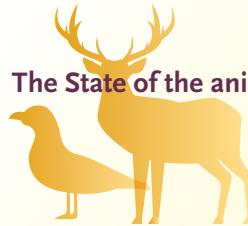


On a scale from 1 to 10.

Living together without boundaries

How do we view the welfare of animals in the wild? And to what extent is that view determined by emotions and scientific insights? Should we be worried about 'non-captive animals'? *Framing animals as 'vermin' is no longer acceptable.*

The State of the animal



Animals in the wild

From to par

Test animals

Best regulated of all?

Experiments on animals are socially sensitive and highly controversial. Why is that? Experiments are strictly regulated, but is that sufficient to guarantee the welfare of the animals concerned? *Animal experiments are experiments on animals, whether legally defined or not.*

Moral frictions



Nature: a fairy tale?!

Animals in the wild



Licence to kill

The killing of animals



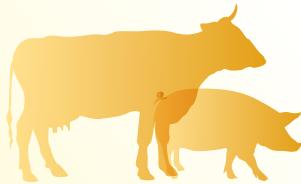
Godwits or cows

Ecology versus technology

the Netherlands

Towards a circular agriculture with respect for animal dignity

Have farm animal health and welfare improved?
What are the persistent welfare issues? *In the transition towards circular agriculture, animal welfare should take centre stage.*



Pets, passion and professionalism

Is the welfare of our precious companions guaranteed, or are we blind to our own shortcomings in how we deal with animals? *A bed is no place for a dog.*

Funny old birds, for our education and enjoyment

Should we stop keeping animals in zoos?
A zoo is not just for fun.

Baseline measurement:

Animals have a moral right to live

80%



People have a moral duty to treat animals well

72%



Animals have an inherent value because they have feelings

63%



Animals have an inherent value because they are part of the ecosystem

54%



A broad group of people in the middle segment feel confident that animals are treated well in the Netherlands. There is little variation in socio-demographics (urban/rural areas, age).



Anthropomorphism

Animals are just like humans



Tinkering with animals

Genetic modification in animals



Animals and regulations

Laws and regulations

Definitions

In 2018, the Council on Animal Affairs published a Conceptual Model¹ to provide clarity on frequently used concepts in connection with animals and the relationship between animals and people. Concepts that are relevant to ‘the state of the animal in the Netherlands’ include welfare, intrinsic value, specific nature, inherent value and integrity.

Welfare

The Conceptual Model says the following about animal welfare: After almost half a century of debate, there is still no agreement on how to define animal welfare. For the time being, the Council uses the following definition, which takes the animal’s perspective: ‘animal welfare is the quality of life as experienced by the animal itself’. An animal will experience a positive state of well-being if it is free to engage in normal species specific behaviour and if it is able to respond effectively to the challenges posed by its environment.

Intrinsic value

Conscious of the wide range of views in society on the concept of intrinsic value, the Council defines it as follows: the intrinsic value of an animal refers to an inherent value independent of the potential utility value of the animal for people. Respect for this inherent value means that the animal’s interests are taken into account when decisions are made. In operational terms, the Council envisages respect for the intrinsic value of animals in a moral requirement that human intervention in animals or their habitats should not result in structural or substantial damage to the animal’s welfare, health and integrity.

Specific nature relating to integrity

The terms ‘integrity’ and ‘specific nature’ are often used simultaneously (see also the visions on intrinsic value). Specific nature is not a clearly defined concept. Roughly, it can be interpreted in three different ways:

1. Specific nature in terms of independence and self-determination can be compared to the concept of autonomy. A person’s specific nature is expressed in his or her choices and behaviours. To a certain (though possibly more limited) extent, animals, too, make their own, independent choices. When an animal is prevented from pursuing its behaviours and making the choices that allow it to express its specific nature, its integrity is impaired.
2. Specific nature can be linked to the concept of telos (purpose). For example, Bernard Rollin^{2,3} further developed the welfare approach along those lines in a philosophical sense. From that perspective, the specific nature or telos of a pig is that which makes it a pig. Although this cannot be fully objectified, one might argue that it is not typical of a pig to have no tail, to be unable to root about in the earth and just to lie and eat apathetically, even if it is healthy and growing.
3. Echoing Taylor⁴, each living being could be said to have a ‘good of its own’. This ‘good’ can also be defined in terms of specific nature. Taylor’s biocentric view entails that we should respect the intrinsic value of a creature that has such a good and, therefore, also has interests.

Sources

1. RDA, 2018. Conceptual Model on Animal Welfare. RDA, The Hague, 30 pages.
2. Rollin, B.E., 2016. A new basis for animal ethics. Telos and Common sense. University of Missouri Press, Columbia (Missouri), 195 pages.
3. Rollin, B.E., 2015. Telos, conservation of welfare, and ethical issues in genetic engineering of animals. *Curr Top Behav Neurosci*, 19, 99-116.
4. Taylor, P., 1986. *Respect for Nature. A Theory of Environmental Ethics*. Princeton University Press, Princeton, 360 pages.



1. Achieving progress by practicable means

Introduction

The Council on Animal Affairs (RDA), founded 25 years ago, has always focused on the welfare of animals. This includes captive animals and animals in the wild. This publication is about the state of various animal groups in the Netherlands in 2019. How do citizens and experts assess the welfare of these animals and the way we treat them? In this regard, what differences emerge between animals in the wild, farm animals, companion and hobby animals, zoo animals and test animals? What are the dilemmas and the conflicting interests, which developments are important and what future trends should we expect? We will see that a great deal has changed over the past 25 years, both in the position of animals and in public opinion on animal affairs.

1.1 Social criticism

A range of groups, organisations and individuals in society are highly critical of the circumstances in which animals are kept, the ways in which we live with animals and how we use them. Examples of issues that have attracted criticism in the recent past include boxed calves; fastened cows and sows; battery hens; bobtailed dogs, horses and sheep; and minx and foxes kept for their fur. The criticism also targets our approach to animals in the wild, and particularly those that live in or near the human environment. Take, for example, the wolf that has returned to the Netherlands, wild boars near pig farms and fallow deer in the dunes near Amsterdam. This social criticism has been instrumental in improving the quality of life of countless animals. In addition, it has resulted in more balanced and animal-oriented practices in how we use and co-exist with animals. Even so, the criticism remains as intense as ever. There are many reasons for that, which will be dealt with in this publication. Below

are the main strands of the criticism, each of which will be covered in more detail in the subsequent chapters.

Compromises

First of all, each and every improvement in the circumstances in which we keep animals is a compromise. While considerable progress has been made, many people claim that in these trade-offs animals are still getting the shorter end of the stick. So work remains to be done from the animal's perspective. Incidentally, the question remains whether the captive animals themselves take the same view. Food security, shelter, veterinary care and protection from predators are important gains for animals, although people sometimes take them for granted. However, many animals pay a price in terms of boredom and lack of autonomy. Improvements for animals in the wild also tend to be compromises. These animals increasingly seem to be driven into a corner. While we do make habitats more attractive for many species (geese, voles, wolves), we also apply population control measures because we do not want the animals to be around in very large numbers. Conversely, we make every conceivable effort to preserve animals whose natural habitats we have destroyed, and rear them in zoos. The friction is evident. As our own welfare is growing, so is the awareness that we cannot continue to shift the consequences on to the life forms with which we share this planet.

Progress

A second source of persistent criticism concerns the consequences of scientific and technological innovations, or 'progress' in brief. While new technology creates opportunities for better care and a better life for animals, it may also have negative consequences. This is why progress is constantly forcing us to consider the consequences for animal welfare and animal health, in an early stage. Examples include new genetic techniques in the case of test animals, new veterinary treatments in the case of companion animals, and new breeding techniques and robotisation in the case of farm animals. Another example is the implementation of big data and artificial intelligence in our signalling and control systems or for biodiversity monitoring and nature management.

Controlling infectious diseases

The third main strand of criticism concerns infectious diseases that can be transmitted from animals to animals or from animals to humans. Preventing and fighting such diseases sometimes requires drastic measures. This is due to their enormous impact and scale, but especially to the need to protect economic interests, as vaccination may raise trade barriers. This generates indignation and resistance. Examples include the culling or shooting of healthy animals. Culling and shooting are measures intended to protect animal and human populations, with an undesirable outcome for the animals affected.

Evolving insights

An important fourth source of criticism is the insights provided by scientific research into the complexity of animals, in terms of their behaviour, neurobiology, cognitive and emotional traits, social organisation and breed characteristics. These insights have made us realise that horses should not be kept in isolation, that fish can experience pain, that the complex and intelligent behaviours of octopuses qualify them for protection under the Experiments on Animals Act, and that chimps and capuchin monkeys can experience a sense of justice in behavioural tests. As our knowledge expands, so do new moral frictions continue to appear. As such, evolving insights will remain a source of criticism.

Given the immense variety in the animal kingdom, generalising and generic statements about animals are problematic by definition. An elephant is different from a cockroach and a whale is not an ostrich. Many species are many times more different from each other than humans are from chimps. More and more animals that previously remained off-stage are now attracting the spotlights. Examples are red deer in the Oostvaardersplassen, fallow deer in the Waterleidingduinen, fish in the sea, insects everywhere and the wolves that have recently settled again in the Netherlands.

Science is also challenging our justifications for deploying animals for our own pleasure. For example, until recently equestrian sports, companion animals, assistance animals or dog shows were seen to reflect the ties of affection between humans and animals. However, new insights have placed this in an entirely different

light. Even where a bond of love and affection between humans and animals is assumed, a critical approach remains possible and necessary.

Respect

The fifth and arguably most important reason for criticism is the growing respect that people feel for animals. In the Netherlands, people have become extremely sensitive to animal suffering. More and more citizens acknowledge animal rights, arguing that animals have a *telos* of their own (see ‘Definitions’ at the top of this publication) and have a desire to complete their life cycle. This growing respect and the expansion of the legal framework - both in detail and in scope - have also made the language of our discourse about animals more comprehensive and specific. That language is gaining acceptance all over the world, and is reflected in European directives and regulations. At the same time, in our language our moral relationship with animals continues to be framed in ways that may cause them serious harm. After all, we are all too eager to describe animals as vermin, pests, spreaders of diseases or surplus stock.

Climate change

Apart from the above-mentioned five reasons for the continued critical evaluation of our relationship with animals, climate change looks set to play a major role in the way we deal with animals. In this context, there is growing attention for the pressure on land use, the environmental effects of livestock farming, multifunctionality and the increasing scarcity of space. The current Dutch Minister of Agriculture, Nature and Food Quality advocates circular practices in agriculture, heralding a programme of far-reaching changes in the Dutch livestock farming system. It is important to consider the position of animals in circular farming and ways to safeguard their welfare and health. In the debate about climate change, the interests of animals should not be overlooked.

1.2 Exploring the options

In response to the increasing attention in society for animal welfare, the Council has been targeting a wider audience in recent years². The Council is aware that the public debate can get administrators and indeed whole sectors moving. This explains why we are also eager to learn more about the average Dutch citizen’s views on

Council on Animal Affairs

Founded in 1993, the Council on Animal Affairs is an independent council of experts that presents views on issues surrounding animal welfare and health. The Council has approximately forty members representing a variety of backgrounds and areas of expertise, ranging from animal protection advocates to livestock farmers and other entrepreneurs, ecologists, ethicists, scientists and veterinary surgeons. They are members in a personal capacity and are not bound by any instructions or binding mandate. The Council issues solicited and unsolicited advice to the Minister of Agriculture, Nature and Food Quality and other administrative bodies. It also serves as a network organisation: by uniting parties with various (and sometimes conflicting) interests, the Council aims to encourage mutual understanding. By doing so, it also promotes the welfare of animals, both directly and indirectly.

animal affairs. At the end of 2018, within the context of our 25th anniversary we held a major public survey³ about the way people in the Netherlands deal with and think about animals (see chapter 2).

The most significant survey results are presented in various parts of this publication. They provide insights into the relationship between people and animals in the Netherlands today. Participants in the Council's Anniversary Conference in February 2019 discussed the survey themes in several break-out sessions. Following up on those exploratory efforts, in this publication Council members contribute further in-depth views on the state of the animal in the Netherlands. What is our take on the survey results? What other major developments can we identify? What will the future bring us, and how can the Council and other bodies set their agendas in anticipation of that? We do not intend to be exhaustive, but merely to outline several developments that we believe are important. Neither does the text always or in every detail reflect the opinion of all Council members – even though in other Council publications it normally does. Hence, this publication should not be viewed as a vision with specific recommendations and advice, but rather as an exploratory study for the benefit of all. It does of course constitute an important source for our agenda. We hope that this compilation of survey results, reflections on the various animal groups and essays on moral frictions provides food for further thought, and look forward to your feedback.

This publication shows that people in the Netherlands have become more precise, more sensitive, more prudent and more careful in relation to animals. This ongoing civilisation process is aided by social criticism, public debate and scientific insights. In this playing field, each party has its role to play, depending on its responsibility as a keeper of animals or user of animal products and services. One thing is clear: the era in which we mainly looked to the government for action to improve animal welfare now definitely belongs to the past. These days, critical forces in society can be mobilised at the speed of light. This causes constant pressure on the keepers of animals and their organisations, on public administration and on politics. That

pressure will help ensure that animals take centre stage in our decisions and assessments. What will not change, however, is that progress in animal welfare and health should continue to be achieved by practicable means.

Sources

1. RDA website: <https://www.rda.nl/>.
2. Jacobs, N. and Theunissen, B., 2018. Welfare and discomfort. Council on Animal Affairs 1993-2018. The Hague, 64 pages.
3. Kantar Public, 2018. The State of the animal in the Netherlands. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.



2. The state of the animal in the Netherlands: perspectives among Dutch citizens

REFLECTION ON ANIMAL WELFARE IN GENERAL

Survey results: Animal welfare

Practically everybody in the Netherlands says that animal welfare matters a lot to them

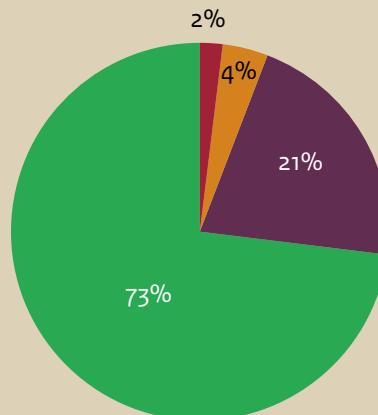
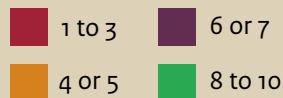
Nearly three-quarters (73%) rate the importance of animal welfare between 8 and 10 (on a scale of 1 to 10).

Only a small group (6%) give a mark of 5 or lower.

Average mark



Marks



On a scale of 1 to 10, please indicate how much animal welfare matters to you.
Base: all respondents (n=2,010)



Respect towards animals will also engender more empathy and compassion in society at large

Three quarters of Dutch citizens (75%) believe that respect towards animals will also make us more mindful of values that are important for relationships between people, such as empathy and compassion.

Also note that most people do not expect pig farming to come to an end any time soon, despite the growing popularity of meat analogues and replacement products. Only around one fifth (20%) fully agree with this statement.

In the short term, people will increasingly be eating meat analogues and replacement products, which means that pig farming will come to an end.



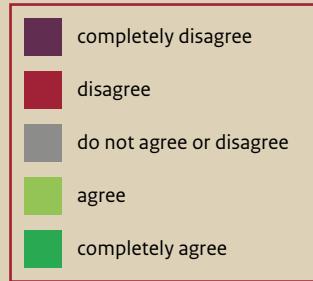
Respect towards animals will also make us more mindful of values that are important for relationships between people, such as empathy and compassion.



Raising legal standards for animal welfare in the Netherlands will encourage commercial animal husbandry to move abroad, with an ultimately poorer outcome for animals.



It is an illusion to think that we could develop medicines for humans and animals without testing them on animals.



Please consider the statements below, and indicate the extent to which you agree or disagree with them.
Base: all respondents (n=2,010)



Animal abuse and neglect are the most negative aspects of the way we deal with animals

When asked to identify the most negative aspects of the way we deal with animals, people in the Netherlands most frequently mention animal abuse and neglect (86%).

Conversely, the most positive aspect of our relationship with animals, according to the respondents, is that they provide love, affection and companionship (82%).

Animal abuse and neglect



Risks to human health resulting from intensive use of antibiotics in livestock farming, and veterinary diseases that can be transmitted to humans



Culling of healthy animals during a veterinary epidemic



Long-haul transport of farm animals



Cramped housing without distraction



Please list what you believe are the three most important negative aspects of the way we deal with animals, starting with the most negative aspect. The figure only shows the five aspects that were most frequently mentioned. Base: all respondents (n=2,010)

Animals provide love, affection and companionship



Animals are important for the emotional development of children



Animals help the disabled and the elderly in their daily lives



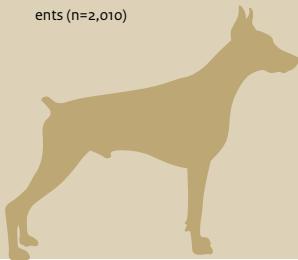
Animals are a source of knowledge, wonder and inspiration



Animals provide a varied range of tasty and healthy meat, milk and eggs



Please list what you believe are the three most important positive aspects of how we deal with animals, starting with the most positive aspect. The figure only shows the five aspects that were most frequently mentioned. Base: all respondents (n=2,010)



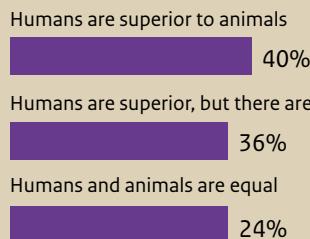


Humans and animals are not equal, but animals do have an inherent value

Respondents are divided on the extent to which humans and animals are equal. Approximately one quarter (24%) say that humans and animals are equal. The rest hold the view that humans are superior (although some recognise that borderline cases exist).

Also, a majority are of the opinion that humans have a moral duty to do well for all animals (72%), that all animals have a moral right to live (80%) and that all animals have an inherent value (99%). Regarding the last statement, half of the respondents indicate that inherent value will mean different things for different people.

Equality of humans and animals



Right to live

Animals do not have a moral right to live

2%

Not all animals have a moral right to live; this depends on their use to humans

18%

All animals have a moral right to live

80%

Humans have a moral duty to treat animals well

Humans have **no** moral duty to treat animals well

4%

Humans have a moral duty to treat animals well, **depending on their relationship with the animal**

25%

Humans have a moral duty **to treat all animals well**

72%

Inherent value

All animals have an inherent value, irrespective of their use to humans

49%

All animals have an inherent value, but that means different things to different people

50%

Animals have no inherent value

1%

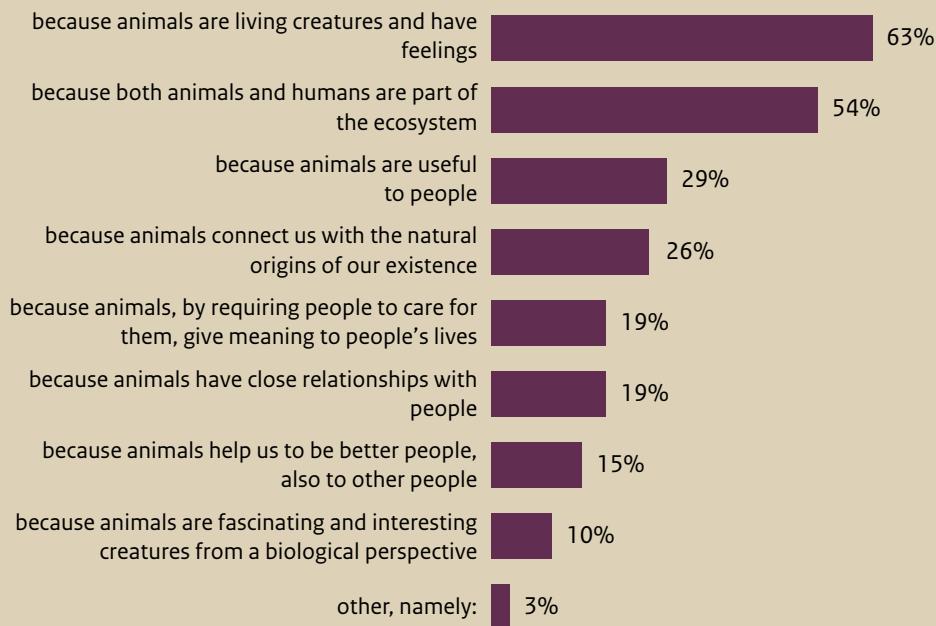
Select the answer that most closely reflects your own opinion. Base: all respondents (n=2,010)

Animals have an inherent value because they have feelings and are part of the ecosystem

People who believe that animals have an inherent value were asked to mention their principal arguments for that view.

The answers mentioned most frequently are the following:

- because animals are living creatures and have feelings
- because animals and humans are part of the ecosystem



What are the main arguments to support your view that animals have an inherent value?
Base: all respondents who believe that animals have an inherent value (n=1,984)

The welfare of farm animals has improved over the past decade

Over two-fifths (43%) of Dutch citizens believe that the welfare of farm animals has greatly improved over the past decade. In addition, a relatively large number of respondents believe that farm animals in the Netherlands are much better off than those in other European countries. These percentages are higher for leisure animals. See the figure on the next page.

Organisations are doing their utmost to safeguard the welfare of animals in the wild

Six in every ten Dutch citizens (63%) believe that organisations that are professionally involved with animals in the wild do their utmost to safeguard the welfare of those animals. Respondents are slightly less positive about the government; one third (37%) are of the opinion that the government does what is required to safeguard the welfare of animals in the wild. These percentages are lower for test animals. See the figure on the next page.

Animal welfare

The concept of animal welfare has many facets; according to the respondents, leisure animals receive better treatment than test animals. The responses to the question of how animals are treated in the Netherlands strongly depend on the group of animals concerned. Respondents give a lower mark for test animals and farm animals (5.7 and 6.1 respectively) than for animals in the wild and leisure animals (6.8 and 7.3).*

* Any mention in this report of differences (higher or lower / larger or smaller) concerns tested significant differences. The results of statistical tests are based on a confidence interval of 95%. In other words, if differences found are significant, there is 95% confidence that those differences arise from actual differences rather than from random fluctuations within the sample. The t-test and chi-squared test were used.

What mark between 1 and 10 would you give for the way this particular animal group is generally treated in the Netherlands?
Base: half of all respondents (n=1,000)



Farm animals

6.1



Leisure animals

7.3



Test animals

5.7



Animals in the wild

6.8



Farm animals



Leisure animals



Test animals



Animals in the wild

The welfare of the animals* has greatly improved over the past decade.



These animals are much better off in the Netherlands than in other European countries.



Organisations that are professionally involved with these animals really do their utmost to improve their welfare.



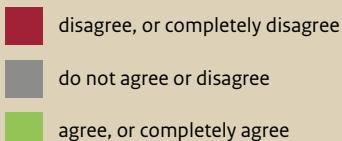
The Dutch government does its utmost to safeguard the welfare of these animals.



Those who keep and care for these animals make every possible effort to safeguard the welfare of their animals.



As an inhabitant of the Netherlands, I receive much better information about the welfare of these animals than I did ten years ago.



*In these questions, the reference was to specific groups of animals (farm animals, animals in the wild etc.).

Please consider the statements below, and indicate the extent to which you agree or disagree with them. Base: half of all respondents (n=1,000)

In 2018, within the framework of its 25th anniversary, the Council on Animal Affairs conducted a survey among a representative sample of Dutch citizens aged between 18 and 69. How do people in the Netherlands assess animal welfare and the way we treat animals? And do they believe that we have made progress in this regard in recent years? In this chapter we will discuss a number of survey results that apply to all the animal groups combined.

2.1 Reason for the survey

In response to the increasing attention in society for animal welfare, the Council has been targeting a wider audience in recent years¹. In this context we conducted a survey among the general public in 2018 – within the framework of our 25th anniversary – to find out how people in the Netherlands think about animals and the treatment they receive². That was a suitable moment for such a survey, given a number of relevant developments that are taking place, such as a review of an EU directive on animal testing, the evaluation of the Dutch Animals Act (*Wet dieren*) and Minister Schouten’s new Vision for Agriculture. The public survey fits in a tradition of previous studies into ‘the state of the animal in the Netherlands’ and associated views among the general public³⁻⁶. However, while earlier studies typically focused on animals as a generic category, in our study we distinguish four specific animal groups: animals in the wild, farm animals, leisure animals and test animals (see box with animal group definitions).

Animal group definitions

- **Farm animals:** animals that are kept for commercial purposes in the Netherlands in connection with products derived from them (meat, milk, eggs, farmed fish, wool, leather etc.);
- **Leisure animals:** animals that are kept at private individuals’ homes or other locations (such as riding schools/stables, children’s farms or zoos) for leisure purposes: companion animals, hobby animals and zoo animals;
- **Test animals:** animals that are mainly kept for scientific research and for statutory safety testing of consumer products;
- **Animals in the wild:** all non-captive animals that are free to move around in nature, including those that are a nuisance to people (pests).



Farm animals



Leisure animals



Test animals



Animals in the wild

2.2 Public survey

The public survey was conducted by research agency Kantar Public among a representative sample of 2,010 Dutch citizens aged between 18 and 69 years of age. When they were invited to participate, the respondents did yet not know that the survey was about animal welfare. Some questions in the survey concerned animal welfare in general, e.g. to establish how the respondents assess animal welfare in the Netherlands and whether they believe this has changed over the past decade. Other questions were about dilemmas that require personal interests to be weighed against the interests of animals – such as the killing of animals, ‘tinkering’ with the DNA of animals, the specific nature of animals and the importance of space for animals to move in, distraction and species-specific behaviour.

The researchers also asked a great many questions about specific animal groups. Each individual respondent was presented with questions on two of the four animal groups. This means that the questions about each of the animal groups have been answered by approximately one thousand respondents. See Figure 1 for an overview of the survey structure. For more details we refer to the report of Kantar Public². In this chapter, we will zoom in on the public perception of animal welfare and the relationship between humans and animals *in general*. Chapters 3 through 7 discuss public perceptions in relation to specific animal groups, while chapters 8 through 13 deal with specific moral frictions. The full survey results are available from the Council on Animal Affairs.

				
THEMES	Farm animals	Leisure animals	Test animals	Animals in the wild
Health & dying	 EVALUATION OF ANIMAL WELFARE OPINION ON DILEMMAS FUNDAMENTAL MORAL ATTITUDES BEHAVIOUR IN RELATION TO ANIMALS			
Natural behaviour				
Integrity & design				
Space & complexity				
Food (supplementary feeding)				
	Socio-demographic background variables			

Figure 2.1: Structure of the public survey. The themes are based on the formal Welfare Quality dimensions of Animal Welfare.⁷

2.3 Animal welfare matters a lot to people and has improved

One major finding of the public survey is that, overall, animal welfare matters a lot to people. When asked ‘On a scale of 1 to 10, please indicate how much animal welfare matters to you’, almost three quarters of respondents (73%) gave a mark of 8 or higher. Only a very small group (6%) selected a mark of 5 or lower. The average, 8.2, would look wonderful on any list of marks. People who are in contact with animals in a private or professional capacity in daily life are significantly more concerned with animal welfare than others without such contact (with 89% and 53% respectively giving a score 8 or higher). In line with these high marks, many respondents felt respect towards animals was important: 75% agreed or completely agreed that ‘Respect towards animals will also make us more mindful of values that are important for relationships between people, such as empathy and compassion’, while only 5% disagreed or completely disagreed with this statement. The public survey also asked respondents about their perception of the state of animals today compared with a decade ago. Fifty-three percent of respondents saw a strong improvement in welfare for leisure animals, but only 43% for farm animals, 39% for animals in the wild and 34% for test animals.

2.4 The relationship between humans and animals today

Animals occupy a special position in our society. They provide love, affection and companionship (82% mentioned this as one of the most important positive aspects of our relationship with animals), are important for the emotional development of children (58%) and provide assistance for the disabled and the elderly in daily life (50%). The respondents also identified negative aspects in our relationship with animals: animal abuse and neglect (86%), risks to human health due to the use of antibiotics and veterinary diseases (43%), the need for culling during a veterinary epidemic (40%), long-haul transport of farm animals (37%) and cramped housing without distraction (33%).

When asked ‘What mark between 1 and 10 would you give for the way this particular animal group is generally treated in the Netherlands?’, respondents clearly distinguished between the four animal groups, awarding the lowest score to test animals

(5.7) and the highest to leisure animals (7.3). Farm animals (6.1) and animals in the wild (6.8) were in the middle range. As regards animals in the wild, more than 60% of respondents believed that nature managers and organisations are doing their best to safeguard and improve animal welfare. As for leisure animals, a large majority (70%) agreed or completely agreed that organisations that are professionally involved with leisure animals are really doing their best to improve the welfare of their animals. These percentages were considerably lower for test animals (38%) and farm animals (47%). For leisure animals, 57% agreed or completely agreed that those who keep or care for the animals are doing whatever they can to safeguard the welfare of their animals. Again, these percentages were considerably lower for test animals (29%) and farm animals (32%).

The respondents generally considered themselves to be well informed about animal welfare, but less so with regard to test animals. Of all respondents, 35% disagreed or completely disagreed that as residents of the Netherlands they were much better informed about the welfare of test animals than they were a decade earlier. In response to the statement that ‘Animals in the Netherlands are much better off than in other European countries’, 60% expressed agreement or complete agreement with regard to leisure animals, while 46% did so with regard to farm animals, 34% with regard to animals in the wild and 39% with regard to test animals.

2.5 Moral attitudes

We also asked respondents for a number of moral attitudes based on the ‘fundamental moral attitude’ concept³. Over 80% of respondents said that all animals have a moral right to live, while 18% believed this depended on their use to humans. A large majority (72%) held the opinion that humans had a moral duty to treat all animals well; 25% believed this depended on the animal’s relationship with humans. Approximately 24% of respondents held the view that humans and animals are equal; 40% believed that humans are always superior while 36% said that ‘Humans are superior, but there are borderline cases where a strict distinction cannot be maintained’. There is widespread agreement (99%) that animals have an inherent value. Half of respondents said this is irrespective of whether the animal is useful to humans; the other half said that this inherent value means different things to different people. The arguments cited most frequently to support the

view that animals have an inherent value were the following: ‘because animals are living creatures and have feelings’ (63%) and ‘because animals and humans are part of the ecosystem’ (54%).

2.6 Conclusions and reflection

It goes without saying that the results of this public survey provide only a snapshot of public opinion. They do however confirm that people in the Netherlands regard animal welfare as a matter of importance. There is strong consensus that all animals have a moral right to live and that people have a moral duty to treat all animals well. Respondents’ subjective assessments of how we deal with animals in the Netherlands present a picture that is varied yet generally fairly positive – especially as regards leisure animals and animals in the wild. According to the respondents, there is more room for improvement in the case of farm animals and test animals – categories which are far less visible to the general public. With regard to test animals in particular, respondents feel less well informed and tend to be less outspoken. One striking observation was that the views appeared fairly homogeneous irrespective of the respondents’ age and degree of urbanisation. See Kantar Public’s report from 2018 for the breakdowns of the survey results². The most important differences were seen between respondents who have contact with animals in daily life and those who do not. This suggests that contact with animals – in particular leisure animals – contributes to empathy for animals and awareness of their interests. Animal welfare is a complex issue, and whether the welfare is satisfactory is difficult to assess without thorough insight and knowledge of the situation at hand. This is especially true for issues surrounding integrity and genetic modification. The latter subject in particular generates a great deal of resistance; we will come back to that in detail in chapter 12. Further in-depth study is necessary in order to identify the underlying convictions. In addition, it would be helpful to monitor the extent to which those underlying convictions – which determine our views on animal welfare – evolve over time. This is why the Council intends to repeat this survey periodically in future.

The responses to most questions show a relatively large middle segment that is less outspoken. The fact is, however, that in the public debate respondents in the outer segments of the scale tend to be more vocal than those in the centre. It would be

useful to study respondents in this middle segment in more detail, especially to find out whether their position should be attributed to a lack of interest, a perceived lack of knowledge and insight, or confidence that things are or will be properly arranged. Of course this also gives rise to the question of how to ensure recognition for this silent middle group in the sometimes heated debate between the extreme positions.

Many of the survey questions that ask for the respondents' opinions are formulated in terms of dilemmas, to reflect the complexity of the animal welfare issue. While practically all respondents say that animal welfare matters a lot to them, they tend to present more balanced views when confronted with specific consequences and when they begin to feel the awkwardness involved. For example, respondents feel it is important for animals to be able to engage in natural behaviour, but they are less happy with natural behaviour in the case of wolves hunting sheep, or pests such as mice. This shows that the balance between respect for animals and personal interests still depends on the circumstances of each individual case.

Sources

1. Jacobs, N. and Theunissen, B., 2018. *Welfare and discomfort*. Council on Animal Affairs 1993-2018. Xerox/OBT, The Hague, 64 pages.
2. Kantar Public, 2018. *The state of the animal in the Netherlands*. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
3. Cohen, N.E., 2010. *Considering Animals*. Moral convictions concerning animals and judgement on the culling of healthy animals in animal disease epidemics. Wageningen University dissertation, 194 pages.
4. Trouw newspaper, 2014. *The state of the animal in the Netherlands*. Public survey among 800 people in the Netherlands, May 2014.
5. Cock Buning, T. de, Pompe, V., Hopster, H. and de Brauw, C., 2012. *Denken over dieren*. Dier en ding, zegen en zorg. Report of the Athena Institute, Vrije Universiteit Amsterdam, 68 pages.
6. Leenstra, F.R., Bergevoet, R.H.M., Neijenhuis, F., *et al.*, 2010. *The state of the animal in the Netherlands*. Monitoring van dierenwelzijn en diergezondheid in Nederland (o-meting). Wageningen UR Livestock Research, Lelystad, report 323, 61 pages.
7. Website of the Welfare Quality Network: <http://www.welfarequality.net/en-us/home/>. Accessed on 17 July 2019.



3. Living together without boundaries

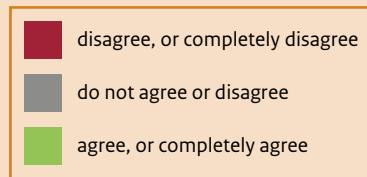
REFLECTION ON ANIMALS IN THE WILD

The welfare of animals in the wild is attracting more and more attention from policymakers and the general public. As our knowledge of ecology and animal behaviour expands, we are also improving our ability to safeguard animal welfare. But is public opinion about animals in the wild based on such knowledge, or does it rely on obsolete scientific insights? And when we make decisions about the welfare of individual animals, what are the consequences for the welfare of their species or the ecosystem at large? This chapter discusses these and other topical issues concerning animals in the wild in the Netherlands.

3.1 The state of animals in the wild

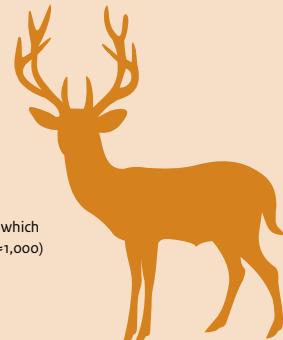
The surface area and quality of habitats influence the size and distribution of populations and the welfare of individual animals in those populations¹. The long-term survival of animal species depends on the availability of sufficiently large habitats and the ability for animals to move between them¹. The quality of the habitats is also important. This includes soil and water quality and the availability of food. Another factor is the degree of disruption, caused by light, noise or other effects of human activity, for instance. Over the past 25 years, various parties have made great efforts to expand the habitats for animals in Dutch nature and create wildlife bridges to help animals spread across larger territories. Despite those efforts, habitats have remained insufficient in terms of both size and quality to safeguard the long-term survival of species. Current agricultural practices and our way of life leave little opportunity for animals in the wild to survive in the longer term in man-made landscapes. Even in many nature-designated areas, habitat quality is decreasing due to negative influences from neighbouring farmland, increasing traffic intensity and urbanisation. As a result, biodiversity is declining at an alarming rate, as is reflected, in particular, in the loss of many insect and bird species².

What are the views of the Dutch public on the state of animals in the wild?



Please consider the statements below, and indicate the extent to which you agree or disagree with them. Base: half of all respondents (n=1,000)

Animals in the wild
all non-captive animals that are free to move around in nature, including those that cause nuisance to people (pests).



3.2 Opinions are divided

Opinions in the Netherlands on the best approach to nature are highly divided. Some people believe that nature should be left to take care of itself and that human intervention is fundamentally wrong ('hands-off approach'). Others argue that we, human beings, are responsible for the welfare of animals in the wild and have a duty to intervene when those animals suffer ('duty of care'). And within this last group, opinions are divided on the nature of such intervention: should we cure sick animals, or kill them to end their suffering? Does culling prevent or does it cause animal suffering? Should starving animals be given supplementary food?

This division was reflected in the responses to the statements in our public survey³. For example, 36% of respondents agreed or completely agreed that animals in the wild should be left to care for themselves and that, as a general rule, there should be a ban on supplementary feeding in winter, while 30% disagreed or completely disagreed with this statement. In response to the statement that animals in the wild should be free to move around and migrate wherever they want in the Netherlands, even if this results in nuisance to humans, 25% said they agreed or completely agreed and 37% disagreed or completely disagreed.

Things become even more complicated when nature invades the space we regard as our property, and when animals cause a nuisance. Twenty-five percent agreed or completely agreed, and 35% disagreed or completely disagreed, that if birds and mammals in nature cause a nuisance to humans, it is justified to intervene and kill them. And 34% agreed or completely agreed that mice are a pest so it should be allowed to poison them, while 27% disagreed or completely disagreed. Wild geese on farmland and agricultural grassland, starlings in a cherry orchard, mice in the pantry, beavers blocking watercourses, migratory birds spreading avian flu and wild boars transmitting African swine fever – we will only tolerate them on our own conditions. For example, 15 beavers were shot in the province of Limburg in 2018, and there are only two areas in the Netherlands where we allow wild boars to live. In this context, the debate on the management of large herbivores in the Oostvaardersplassen reserve provides a particularly evident example of selective indignation. Would it be possible to formulate a more consistent policy on the welfare of animals in the wild?

The Council on Animal Affairs was founded in 1993 as a consultative body tasked with advising the government on issues surrounding animal health and welfare and applications of biotechnology in animals, including the ethical aspects involved. Today, the Council issues advice on farm animals, test animals, companion animals and animals in the wild. In doing so, the Council follows general guiding principles as formulated in its Conceptual Model⁴. In *Animal Farm*⁵, George Orwell dealt with the issue of relative equality among farm animals quite effectively by stating that ‘all animals are equal, but some animals are more equal than others’. In its advisory report *Weighing Wildlife Welfare (Wegen van Welzijn van Dieren in de Natuur)*⁶, the Council considers that welfare as a concept applies to all animals in equal measure. The Council also takes the position that the human duty of care depends on the possibility to intervene. Before effecting an intervention that will adversely affect animal welfare, alternatives must be weighed in a thorough and ethically responsible manner.

Some groups in society tend to express their sense of responsibility by intervening in nature using measures that are not part of the official management programme. This causes tensions while also encouraging a broad debate on how we should approach nature in the Netherlands. That debate, in turn, may result in adaptations to the management policies for animals in the wild. We will discuss this in more detail, and with examples, in chapter 8.

3.3 Myths, emotions, ecology and wolves

‘Welfare’ is a concept based on the individual animal (see ‘Definitions’ at the top of this publication). Animals in the wild are part of populations of their own species and interact with individuals of other species. This is why we need to include ecological knowledge into the equation when deciding on the welfare or health of an individual animal. For example, we need to consider the animal’s position in the food web. After all, animals eat and are eaten. Decisions to regulate the numbers of any particular animal population will also affect other species. In both the *Waterleidingduinen* and *Oostvaardersplassen*, large numbers of deer – fallow deer and red deer respectively – have changed the local vegetation, with consequences for insects, birds and other animals. For example, roe deer no longer occur in those areas due to competition for food with fallow and red deer, whose populations

were allowed to expand unhindered. In the debate on the effects of population management on the welfare of red deer, therefore, we will also have to consider the consequences for the welfare of other animals in the ecosystem.

All Council recommendations are based on the available scientific knowledge. Public opinion on issues regarding animals in the wild tends to be heavily influenced by outdated scientific insights and lack of expert knowledge. In chapter 8 we present two recent examples to illustrate this: the management of large herbivores in the Oostvaardersplassen and the rehabilitation of young and stranded seals. Below is another example: the return of wolves in the Netherlands. We will see that a lack of factual knowledge plays an important part in the debate on this issue, and that interventions in populations of animals in the wild often have consequences for entire ecosystems.

Example: the wolf

The wolf has returned to the Netherlands. In 2018, a total of ten different individual wolves were observed; so far this year, six have been counted (June 2019). Two females have settled permanently, and it was confirmed in June 2019 that one of them had at least three cubs, possibly even five. Following centuries of intensive persecution, wolves had become extinct in the Netherlands at the end of the 19th century. For some people, the wolf's absence for 130 years was enough reason to keep it out of the country for good, while for others it was all the more reason to celebrate its return. The news of the wolf's return evidently evokes a range of associations, which may be driven by a number of different narratives about wolves. We will describe five of those narratives below.

One is quite ancient and can be traced to European mythologies, legends and folklore. It tells of dangerous people who are able to transform themselves into an evil wolf or some anthropomorphic wolf-like creature, which is usually modelled after Fenhir, a well-nigh invincible wolf from Germanic mythology. Such people were called 'lycanthropes', or *loup-garou* in French. A second narrative involves the anthropomorphic view of wolves. Ever since the Middle Ages, wolves have been attributed a whole range of human traits - though not usually the most pleasant ones. Examples include the voracious Isengrim, the main antagonist of Reynaerd the Fox. The wolf also features in no fewer than 14 fables of La Fontaine.

These two narratives bear witness to the deep cultural roots of fear of and aversion to wolves among humans. Fairy tales such as Little Red Riding Hood and The Wolf and the Seven Young Goats nurture this fear in every new generation. This may also explain, at least in part, why some respondents in our public survey were not happy with the return of wolves. Of all respondents, 31% disagreed or completely disagreed that ‘Wolves should not be hindered in their natural behaviour; this includes their hunting behaviour and hunting sheep for food’.

The third narrative is that of the wolf as a predator of humans. There are countless fairy tales and stories featuring wolves that eat people. But exactly how dangerous are wolves to people? In his book about wolves in France, Jean-Marc Moriceau⁷ states that 7,755 people in total died as a result of attacks by wolves between 1362 and 1918. By far the majority (7,522) were killed before 1855. Of all deaths, 3,135 are certain to have been caused by rabid wolves. In other words, the remaining 4,620 individuals are registered as people who fell prey to wolves in France. Even in this group, some are likely to have been attacked by rabid wolves, but since they died before being able to develop rabies symptoms, this could not be proved. Others were probably killed by wild dogs or by dog-wolf hybrids. For instance, the ‘Beast of Gâtinais’ had blond fur and a white neck – which does not sound like a wolf.

However, even after allowing for all these borderline cases, there are still a great many genuine cases of predation by wolves. Most victims were younger than 20, and many of them were children who were tending cows in nature for summer grazing. But what exactly do these impressive numbers tell us about wolves as predators of humans? In the past, wolves could be encountered all over France, including low country, and in high densities. There were some 20,000 wolves in France by the end of the 18th century, compared with 450 to 500 today. Excessive hunting kept game numbers low, which forced wolves to look for prey near human settlements and grazing areas. Even so, by far the majority of wolves remained frightened of people and did not pose a serious threat as predators. Many wolves that preyed on humans had developed that habit on battlefields, where they fed on the corpses of fallen soldiers. Only a few individuals eventually lost their fear of humans – and killed many. The ‘Beast of Gévaudin’ is thought to have killed 76 people; Moriceau⁷ also mentions many other examples of individual wolves that caused multiple deaths

elsewhere in France. He quotes one particular case of a single wolf that killed 56 people before being killed itself.

In a publication co-authored by 17 other experts, John Linnell compiled all available knowledge of predation of humans by wolves around the world⁸. Their conclusion: among the very rare cases of wolves killing humans, the majority of attacks were by rabid wolves. Predatory attacks appeared to be largely targeting children. Such attacks remain highly unusual; humans are not on a wolf's everyday menu. All known attacks by wolves on humans occurred in a limited set of situations. They could be attributed to the wolf being infected with rabies, to self-defence on the part of the wolf, to an attack by the wolf in defence of its cubs, to the presence of dogs provoking a defence response in the wolf, or to the wolf having lost its fear of humans through habituation, for example as a result of feeding.

All the signs are that following centuries of persecution, wolves remain essentially afraid of people. Also note that wolf densities are much lower than they were in the 18th century and before, and that today wildlife populations are high all over Western Europe. In addition, rabies is controlled effectively in Western Europe and is no longer a significant factor. The horrible events of the past do teach us, however, that we need to remain careful with wolves. So we should not take dogs into areas where there are wolves, we should not feed wolves and we should stay well away from their cubs.

A fourth narrative tells about wolves as predators of livestock. As mentioned above, wolves were quite numerous in Western Europe in the past, while wildlife populations were low due to excessive hunting. There is no doubt, therefore, that wolves caused damage by killing livestock. Yet the small number of wolves in Germany today – approximately 200 – present a completely different picture. Researchers at the Senckenberg Research Institute in Görlitz⁹ studied the feeding habits of German wolves. To that end they collected over 3,000 wolf droppings. Their analysis revealed that 96% of the wolves' diet consists of roe deer (55%), red deer (21%), wild boars (18%), hares (1%) and livestock (1%). The remaining 4% consists of other food, such as vegetable food. Studies conducted in Italy, Hungary and Scandinavia present a similar picture.

European countries where wolves have never been away are now taking precautionary measures to prevent predation of livestock, for example by stabling the animals at night or using dogs to guard them. Bommel, Van *et al.*¹⁰ have published an overview of the measures available to protect farm animals against predation by wolves. So we can prevent damage to livestock by adapting to the presence of wolves – although this does require the necessary behavioural changes and investments. It would be reasonable to expect a government contribution towards the costs of measures to keep wolves out. Of all respondents in our public survey, 58% agreed or completely agreed that rather than chasing wolves out of the country, we should protect ourselves and our animals against them; 13% disagreed or completely disagreed.

Most of the wild wolves that have been spotted in the Netherlands to date were young animals looking for a territory of their own. These roaming specimens are known to have occasionally attacked sheep, especially sheep that are out in the fields unprotected. Not all parts of the Netherlands provide a suitable habitat for wolves. Even when all potential territories in natural areas are occupied, there will still be roaming young wolves looking for a suitable home. These are the ones that could then potentially attack sheep in areas where we did not expect wolves. Shooting such roaming animals is no solution, since young wolves need to roam; it is a natural part of their development.

The fifth narrative is less well-known and has thus far only played a minor part in the debate. This narrative centres around the ecological function of wolves. In the United States, as in many other countries, wolves were exterminated almost everywhere. The last wolf in Yellowstone National Park was killed in 1926. Once the wolves had disappeared from the park, deer populations grew exponentially. This resulted in overgrazing, causing willow and aspen woods in the area to decline. The disappearance of those trees also caused beaver populations to decline, and the whole area started to dry up. So the disappearance of wolves triggered a whole cascade of effects on other animals and plants. As coyote numbers soared, the populations of pronghorns decreased. Deer hunting was unable to sufficiently cancel out the effects of overgrazing. In 1995, wolves were reintroduced in Yellowstone. Aided by the increased rainfall due to climate change, vegetation began to recover; as a result, the beavers returned and biodiversity has rebounded. Today, the wolf population

in Yellowstone ranges between 100 and 180 individuals. What emerges from this narrative is that the wolf is a keystone species¹¹ that maintains the quality of entire ecosystems.

Their 130 years of absence from the Netherlands has caused us to forget the ecological importance of these animals. The dramatic history of fallow deer in the Waterleidingduinen reserve might have been different if there had been wolves around. The main argument in favour of the return of wolves, therefore, is that they help to recover nature in the Netherlands, which consists of incomplete ecosystems that lack top predators and, in many cases, large herbivores. The reintroduction of wolves in Yellowstone National Park shows the huge and beneficial effect of a keystone species on the entire ecosystem. The favourable effect of wolves on the ecosystem is not solely due to the fact that they reduce deer populations. The behaviour of the deer in the presence of wolves is just as important. In response to hunting wolves, deer tend to move to other areas more frequently and avoid the most dangerous spots, thus allowing vegetation to become more diverse.

So, the argument that the Oostvaardersplassen should be kept free of wolves because ‘people kill much more humanely than wolves’¹² ignores the important contribution of wolves to the functioning of ecosystems. The Council is of the opinion that, from an ecological perspective, the return of wolves to the Netherlands is a positive development. Nature in the Netherlands benefits from the presence of wolves. Now that rabies is controlled effectively in Western Europe and wildlife populations are sufficient, wolves hardly pose any sort of threat to humans, although perceptions may sometimes be different. Having said that, measures must of course be taken to protect hobby and farm animals against wolves. In our view, wolves – which have featured for so long in our literature – should now also be welcomed in our landscapes in real life. Establishing a centre for information about wolves in the Netherlands would help to spread knowledge about this species among the general public.

3.4 Changes in the Dutch landscape

The influence of intensive agricultural practices

Many nature enthusiasts of more advanced age feel a sense of permanent loss when visiting natural areas in the Netherlands. Nature and landscapes have changed dramatically during their lifetime – and not for the good, they believe. This sense of loss makes people nostalgic for the nature and landscapes of their youth, and makes them want to recreate those landscapes. However, that wish is vain, due to the degree of urbanisation and the enormous change in farming practices that has taken place since then. As a result of current dairy farming methods, urbanisation and growth in the number of predators, meadow birds such as black-tailed godwits and redshanks have become rare and ruffs no longer breed in the Netherlands (also see chapter 10). All attempts to reverse that process short of reinstating those old farming practices are doomed to failure. We will have to accept, therefore, that meadow birds can only thrive in reserves specially managed for them, and among cattle farmers that embrace nature-inclusive practices.

The good news, however, is that new nature and landscape elements have been created, such as corridors and herbaceous field borders. These have been designed and made by man, just as the old landscapes were. One characteristic of those old landscapes was their small scale. Mechanised agriculture, on the other hand, requires large-scale operations. The efficiency gains from the increase in scale, however, prove to have an adverse effect. They contribute to the loss of ecosystem services that play a key role in the health of farming and of nature in general (see box text on ‘Decline of insects’). Slowly, awareness is growing that current farming practices are not sustainable¹³. This awareness has been translated into Minister Schouten’s policy proposal for promoting circular agriculture in the Netherlands (see chapter 4).

New animal species and reintroduction programmes

Climate change and high mobility rates among people have enabled many organisms to settle in the Netherlands from elsewhere. Animals

Decline of insects

Pollinators and the natural enemies of pest insects often live on a relatively limited spatial scale. As such, they felt at home among the wooded banks, verges and herbaceous fields and meadows of the old small-scale landscapes. Modern-day large-scale agriculture with its mono-cultures leaves fields that are little more than a desert to pollinators. Moreover, the huge flying distances have made it difficult for those fields to be reached at all by the natural enemies of pest insects. The use of pesticides is causing the numbers of those enemies to decline even further. Other factors contributing to the decline of insects are nitrogen load, climate change and the use of chemicals. Fortunately, the alarming decline of insects in Western Europe² has now resulted in several initiatives to improve the situation. In the National Bee Strategy, a wide range of organisations have been mobilised to provide more space for nature in fields, for example by creating herbaceous field borders and edges. The Delta Plan for Biodiversity Recovery aims to halt the loss of biodiversity through broad, local-based collaboration between farmers, area managers, private individuals, researchers and public authorities. While there is still a long way to go, these programmes will help us mitigate part of the effects of large-scale agriculture. The European Partridge programme – organised in the Netherlands by Vogelbescherming, the Dutch society for the protection of birds – is one example of a project set up to achieve those goals.

whose habitat expands northwards due to climate change are able to get here on their own. However, other animals are actively introduced by people. These exotic species potentially undermine the stability of ecosystems, for instance by carrying pathogens that are new to Europe or by competing with endemic species. One example is the fire salamander in South-Limburg, which was wiped out by a fungous disease that was introduced by amphibians from Asia. That the fire salamander will disappear from a large part of its European range seems inevitable¹⁴. In England, the endemic red squirrel has largely disappeared due to a virus introduced to Britain with grey squirrels from North America¹⁵. Due to the introduction of Chinese ladybirds, several European ladybird species – and possibly a number of hoverflies and lacewings – have become quite rare.

These examples show that there is a need in the EU for stricter rules on the import of exotic species. A great many of those introduced species have already settled permanently in Western Europe. The EU has published a list of undesirable species and asked the Member States to eradicate them so as to reduce the damage they cause. However, it seems that species such as the Canada geese, ruddy ducks, grey squirrels, raccoons, raccoon dogs, coypus and muskrats are here to stay. We will have to resign to the fact that all we can do is limit their numbers. However, not all species on the EU list are known to really cause serious damage to ecosystems or the economy.

Several other animal species were deliberately reintroduced in the Netherlands in the past, such as storks, raven, beavers and otters. These species are doing well here, although the landscape has changed. Other species have returned under their own steam, although some may have profited from changes in agricultural practices. Due to the strongly increased acreage for maize cultivation in Europe, we have seen considerable growth in the numbers of cranes in their Western European migratory route, and they have returned as a breeding bird in the Netherlands. If anyone had told the middle-aged nature enthusiast referred to above some forty years ago that cranes, great egrets, white-tailed eagles and ospreys would come to the Netherlands to breed and that even the wolf would return, they would not have been believed.

3.5 Other issues at play

Regulatory changes

While attention for the welfare of animals in the wild is growing, this trend is not reflected in the regulatory protection of species and individual animals; indeed, that protection has declined following the introduction of the Nature Conservation Act¹⁶ in 2017. Since the Flora and Fauna Act (2002) and the Conservation of Nature Act (1998) were merged in the Nature Conservation Act, in 2017, two hundred species lost their protected status and other species or individual animals were offered less protection, for example because several prohibitions were withdrawn and the protection of native species was reduced. In addition, the devolution of powers to provincial executives has resulted in regional differences in policy and fragmentation in the administrative management of animals. Chapter 13 discusses the consequences of this for the position and welfare of animals in the wild.

Value system

Another issue associated with animals in the wild (also referred to in section 3.2 above) is that animal species do not receive equal treatment from people. The natural status and inherent value of each individual animal is legally enshrined in the term ‘intrinsic value’, a concept that expresses respect for the specific nature of each and every form of life. Since intrinsic value cannot be measured, it cannot be used as a measure for comparison between species. Even so, consciously or not people do tend to compare animal species on the basis of a value system. ‘Value’ in that system depends both on the size of the animal concerned and on the evolutionary and psychological distance between humans and the animal. Apparently we are less hesitant to kill a mouse than a red deer.

The biological justification for this scale of values is the replacement value of an individual – the smaller the animal, the shorter its generation cycle and the higher its fertility rate. This explains why small animals are easier to replace than larger ones. Replacement value also depends on how rare an animal is: individuals of rare species are harder to replace than individuals of more common species. That is why we go to great lengths to protect the large copper butterfly, and are much less concerned about the peacock butterfly. A question that will demand more of our attention in the future is how this implicit value system can be reconciled with

the respect that the law demands from us for the specific nature of each form of life. Examples of our tendency to value some animal species more than others crop up regularly in daily life. We choose to kill foxes so as to save black-tailed godwits, and while we keep wild boars out of most habitats that are suitable for them, we impose no such restrictions on roe deer.

Pet animal health

To protect the health of our pets, we sometimes intervene preventively in populations of animals in the wild in order to block the transfer of diseases. Founded in 2002, the Dutch Wildlife Health Centre is a centre of expertise that aims to detect and examine diseases among animals that live in the wild. Examples of animals in the wild carrying pathogens that can potentially infect captive animals are migrating waterfowl with avian flu, badgers with bovine tuberculosis (in the UK), and wild boars carrying the African swine fever virus. In the last two cases it was decided to drastically reduce the badger and wild boar populations in the hope of minimising the risk of infection among cows and pigs. Whether that strategy is successful depends on the animals' behaviour. The removal of animals also means that their territories are left vacant, which may attract animals from other areas. This is what happened in the 1960s, for instance, when the Dutch government decided to cull foxes in the border areas due to a rabies epidemic in the German fox population. The rabies crossed the border all the same, carried by German foxes that moved into the territories that had become available in the Netherlands.

In the Council's opinion, large-scale culling of healthy animals should be seen as a last resort. France and Switzerland, for example, suppressed rabies by immunising their fox populations against the virus. To that end, they scattered large numbers of dead rats in the countryside that contained a vaccine. Currently there are plans to immunise wild rabbits against myxomatosis and rabbit haemorrhagic disease, and badgers against bovine tuberculosis.

Food quality and animal welfare

More and more consumers are prepared to pay extra for their food if it is of better quality. Feeding pigs on imported soy beans is not compatible with the principles of circular farming. However, not everybody is aware of the fact that there is also a link between the quality of our food and the welfare of livestock. Any French cook

will confirm that you can only prepare a proper *Coq au Vin* with a free-range chicken, which provides meat of a nice deep-red shade and also tastes far better than factory-farmed chickens. Another appealing example is from a book by Graham Harvey.¹³ Dairy cows are selected for maximum milk production. Holstein-Friesian cows can only sustain ultra-high milk production levels on feed that is high in proteins and energy, such as soy and maize. Feed concentrate changes the composition of the bacterial flora in the cow's stomach compared with cows that feed on grass only. As a consequence, the composition of fats in the milk and cheese derived from Holstein-Friesians is also different. Milk from Jersey cattle and the cheese derived from it are high in omega-3 fats, which means they are healthier for our cardiovascular system. The cheese is also much richer in taste. The latter is also true for Comté cheese from the French Jura region. Cheese can only bear this name if made from the milk of cows that graze in the herbaceous grasslands of that region. So far there has been little research into the connection between the welfare of animals and the quality of the food they provide; it is an area likely to produce a whole range of interesting findings. The above examples do show, however, that animal welfare, human health and the quality of ecosystems in agriculture are all interconnected and benefit from more ecologically responsible farming practices.

3.6 Summary

In the Netherlands, animals in the wild have seen their habitats expand over the past 25 years and also have more opportunities to spread via wildlife bridges. At the same time, the quality of their habitats is deteriorating, even within nature reserves. This is caused by various factors, such as fertilisers and pesticides² penetrating into the natural environment and the lack of corridors between isolated reserves. These are important issue that potentially also affect the welfare of the animals concerned. While attention for the welfare of animals in the wild is growing among policymakers and the general public alike, this trend is not reflected in the regulatory protection of those animals. It seems that more and more people feel responsible for the welfare of wildlife, but opinions remain divided. For example, some people hold the view that human intervention in nature is fundamentally wrong, while others argue that we humans are responsible for the welfare of animals in the wild. In addition, many people – consciously or unconsciously – apply a value system in their appreciation of specific animal species. We are less hesitant to kill a

Actions required on behalf of animals in the wild

- Take measures to halt the loss of biodiversity – realise habitats of sufficient size and quality;
- Draw up plans for the future of agriculture – towards a circular agriculture that allows sufficient space for nature, enabling full utilisation of ecosystem services such as pollination and biological pest control. This will contribute to the welfare of both captive animals and animals in the wild;
- If damage caused by animals in the wild can only be contained by killing the animals that cause it, use animal-friendly culling practices;
- Consider welfare aspects in population management, weighing up the welfare of individual animals against the welfare of other animals within the population, and weighing up the welfare of animals alive today against the welfare of those in future populations (see the Council's advisory report *Weighing Wildlife Welfare*⁶). Conduct a permanent dialogue on the suffering of animals in the wild and how to deal with that – the duty of care versus a hands-off approach.

mouse than a red deer. Knowledge of ecology and animal behaviour may contribute to resolving these moral frictions.

Sources

1. Environmental Data Compendium website: <https://www.clo.nl/en/node/27139>. Accessed on 17 July 2019.
2. Hallmann, C.A., Sorg, M., Jongejans, E., *et al.*, 2017. More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PLoS One*. 12, 18-22.
3. Kantar Public, 2018. The state of the animal in the Netherlands. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
4. RDA, 2018. Conceptual Model on Animal Welfare. RDA, The Hague, 30 pages.
5. Orwell, G., 1945. *Animal Farm*. Secker and Warburg, London.
6. RDA, 2017. *Weighing Wildlife Welfare*. Application of the wildlife assessment framework. RDA, The Hague. 64 pages.
7. Moriceau, J-M., 2013. *Sur les pas du loup*. Tour de France historique et culturel du loup du Moyen Âge à nos jours. Montbel, Paris, 352 pages.
8. Linnell, J.D.C., Andersen, R., Anderson, Z., *et al.*, 2002. The fear of wolves: a review of wolf attacks on humans. *Norsk Insittutt for Naturforskning*, Trondheim, 65 pages.
9. Wagner, C. and Holzapfel, M., 2012. Wolf (*Canis lupus*) feeding habits during the first eight years of its occurrence in Germany. *Mamm Biol*. 77(3), 196-203.
10. Van Bommel, F., Linnartz, L. and Floor, L., 2015. Effectieve en praktisch uitvoerbare preventieve maatregelen ter voorkoming van predatie van vee door wolven. ARK Natuurontwikkeling and Van Bommel Faunawerk, Nijmegen, 54 pages.
11. Paine, R., 1969. A note on trophic complexity and community stability. *Am Nat*. 103, 93-96.
12. Boersma, H., 2018. Why, according to nature philosopher Martin Drenthen, the Netherlands is not ready yet for new wilderness. *de Volkskrant* newspaper, 7 December 2018.
13. Harvey, G., 2016. *Grass-Fed Nation*. Getting Back the Food We Deserve. Icon Books, London, 240 pages.
14. Smith, H. K., Pasmans, F., Dhaenens, M., *et al.*, 2018. Skin mucosome activity as an indicator of *Batrachochytrium* salamandrivorans susceptibility in salamanders. *PLoS One*. 13, 1-14.
15. Sheehy, E., Sutherland, C., O'Reilly, C. and Lambin, X., 2018. The enemy of my enemy is my friend: Native pine marten recovery reverses the decline of the red squirrel by suppressing grey squirrel populations *Proc R Soc B Biol Sci*. 285; 20172603.
16. Nature Conservation Act (*Wet Natuurbescherming*) (full Dutch text): <https://wetten.overheid.nl/BWBR0037552/2019-01-01>. Website accessed on 17 July 2019.



4. Towards a circular agriculture with respect for animal dignity

REFLECTION ON FARM ANIMALS

The legal position of animals has strengthened over the past 25 years. For example, the Treaty on the Functioning of the European Union recognises animals as sentient beings, and the intrinsic value of animals is permanently enshrined in Dutch legislation. However, does that mean that the welfare of farm animals has improved as well? Or are there persistent welfare issues that have remained unresolved? What developments towards further improvement in animal welfare can we identify in the sector and in society at large? And what is the role and position of Dutch livestock farming in the planned transition towards circular agriculture? In this chapter we will take stock of the welfare of farm animals.

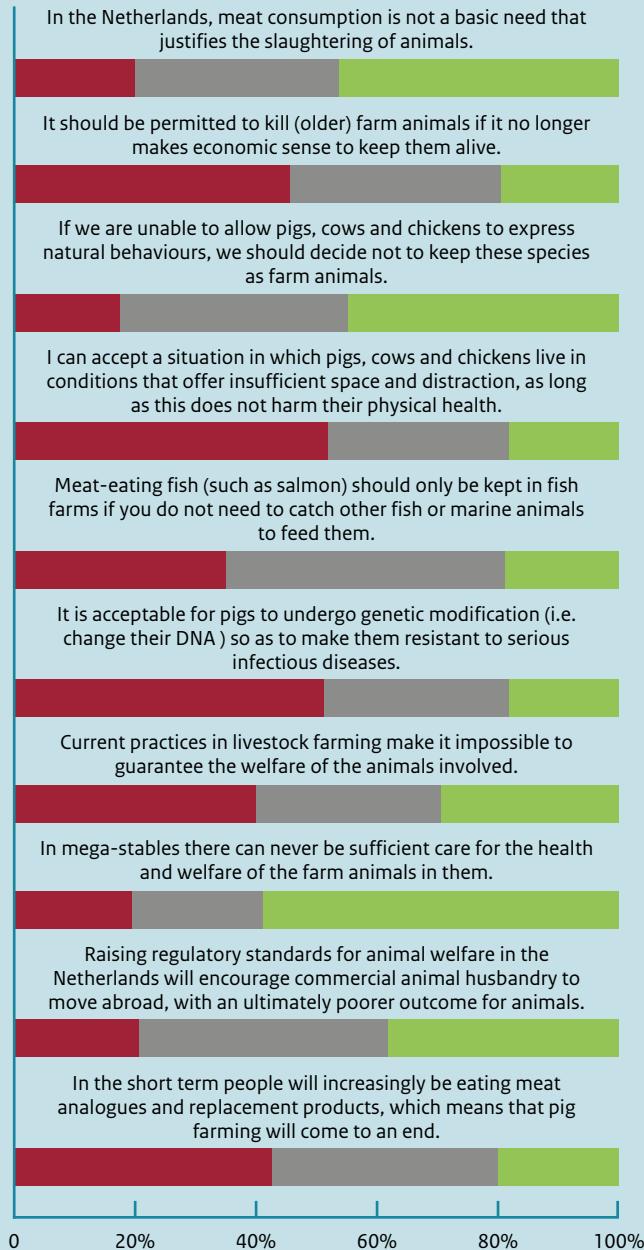
4.1 No more hunger

Now that we are about to strike out on a new course in food production, it may be helpful to briefly consider the developments that have led up to this – briefly, because the challenges are ahead of us, not behind us. A century ago, Europe suffered the ravages of the First World War, which made the continent dependent on American food aid. Borrowed funds helped American farmers rapidly step up production levels. After the war, the resulting overproduction in the US caused prices to plummet. This was because the high production volume required to provide food aid was no longer needed. In addition, mechanisation had boosted industrial production levels while wages lagged behind and low-paid migrants from poorer parts of the world lacked the means to buy those products. The overproduction, the disrupted economic balance, the stock market crash of 1929 and the ensuing world-wide crisis eventually contributed to the Second World War¹. In that war, Europe was hit once again by food shortages and famine.

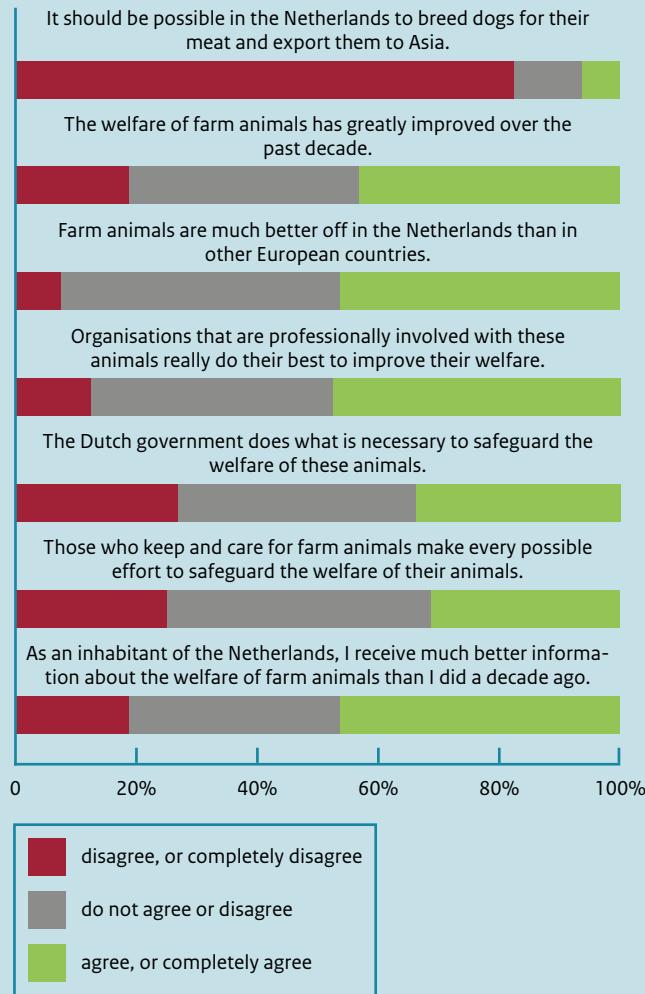
In 1958, in order to safeguard food provision in Europe after two world wars, the six founding members of the European Economic Community – the Netherlands, Belgium, Luxembourg, West-Germany, France and Italy – drew up a common agricultural policy.

SURVEY RESULTS

What are the views of the Dutch public on the state of farm animals?



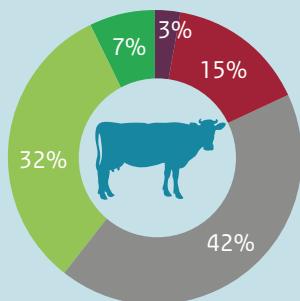
Farm animals: animals that are kept for commercial purposes in the Netherlands in connection with products derived from them (meat, milk, eggs, farmed fish, wool, leather etc.).



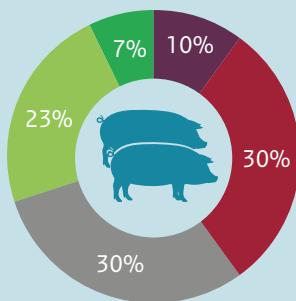
Opinions are divided on animal welfare in current livestock farming

- Just under four in every ten people in the Netherlands (39%) feel that we should focus on the needs of the animals rather than impose our own standards on them.
- Opinions are divided on the statement that it is impossible to guarantee animal welfare in current livestock farming: 30% agree or completely agree, while 40% disagree or completely disagree.
- In any event, mega-stables are not popular. According to six in every ten people in the Netherlands (60%), in mega-stables there can never be sufficient care for the health and welfare of farm animals in them.

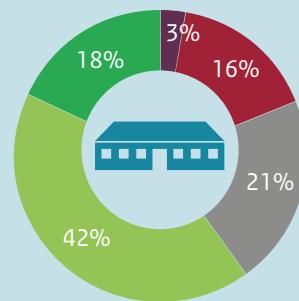
Rather than impose our own human standards, it is crucial that we focus on the needs of the animal.



Current practices in livestock farming make it impossible to guarantee the welfare of the animals involved.

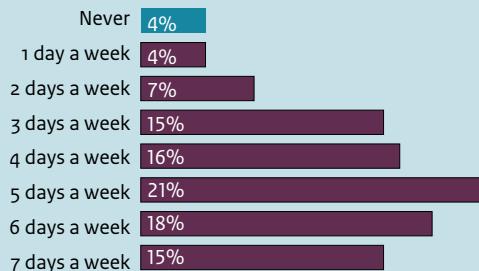


In mega-stables there can never be sufficient care for the health and welfare of the farm animals in them.



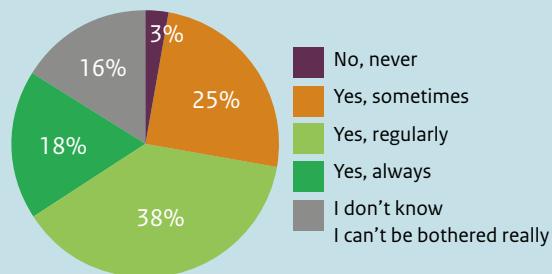
Four-fifths (81%) of people in the Netherlands who buy meat say they check for the 'Better Life' quality label or verify in some other way whether the meat was produced in an animal-friendly manner.

How often do you eat meat as part of a hot meal?



Base: all respondents (n=2,010)

Does the meat you eat feature the 'Better Life' quality label or was it otherwise produced in an animal-friendly manner?



The focus here was on affordable food for all citizens – by raising production levels, ensuring an acceptable livelihood for farmers and stabilising markets.

Since then, technological innovations have continued to boost productivity levels, for example by improving the composition of animal feed, feed production, feeding methods, milking techniques, manure utilisation, manure processing, housing, veterinary healthcare and breeding methods. Structural improvements, specialisation, increase in scale, research, education, collaboration and professionalisation also contributed to the increase in productivity. The livestock farming sector was able to become such an important part of the Dutch economy by producing as much as possible with maximum efficiency and at the lowest possible costs. For a long time, the sector failed to address the unintended negative effects for animals, the environment and biodiversity. Real change only came about when, thanks to research and experimental projects, alternatives appeared on the horizon. At the same time, more and more people in the Netherlands moved to the big cities (see box), livestock farming became increasingly disengaged with society at large, citizens became increasingly critical and the downsides of the sector's economic success became increasingly and glaringly visible.

4.2 Carrying success too far

Today, in 2019, the relationship between society and agriculture is ambivalent. Many citizens take the benefits of intensive farming for granted: affordable food, a wide range to choose from, high levels of food security, food safety and employment. Indeed, society reaps the economic benefits of the exceptionally strong position on the export market that Dutch agriculture has built, and which it owes in part to the European single market and EU agricultural policy, based on a virtually equal playing field across the EU. At the same time however, society is becoming increasingly critical of the negative consequences for animals, the environment and biodiversity. Citizens criticise the early death of young animals, routine physical interventions, breeding practices aimed to maximise production, mega-stables, public health hazards, over-fertilisation and emissions of fine particles, ammonia and greenhouse gases, degradation of the landscape and the environment, and loss of biodiversity. These themes reflect the two faces of our modern times: individual freedom and development, efficiency and convenience on the one hand are detrimental to the environment and other collective values on the other.

From the countryside to the city

UN figures² show that the population in rural areas in the Netherlands is decreasing (Figure 1). This is due to the growth of cities on the one hand, and to depopulation of the countryside on the other. Between 1950 and 2017, no other European country showed a depopulation rate in rural areas as high as the Netherlands: 67%. The relative decrease of the rural population was 9% over the 25 years between 1967 and 1992, but rose to 21% over the subsequent 25 years. This reflects a substantial shift from rural areas to the cities during the period covered by this reflection. According to current projections, by 2042 over 96% of people in the Netherlands will be living in cities.

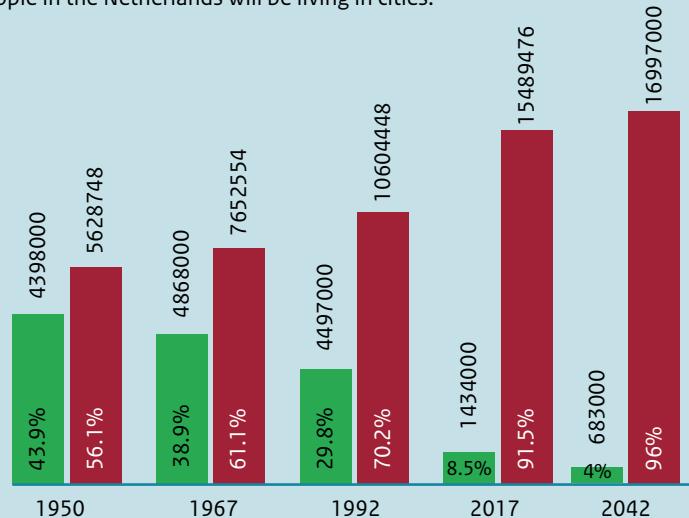


Figure 4.1: Population figures for rural areas (green) and urban areas (red) in the Netherlands in 1950, 1967, 1992, 2017 and (forecast) 2042. Source: United Nations².

Worldwide population growth is the catalyst in the current debate on sustainable food supply, protein transition and CO₂/climate change. In our highly diverse society, the standpoints of the parties and citizens in this debate – which are sometimes wide apart – are determined by their value orientations, convictions, reference frameworks and of course interests³. This also applies to the more controversial issues, such as our approach to animals, the use of sensor and reproductive technology, the draining of grassland, meadow bird management, manure production, manure utilisation, housing, food and management, GMOs and pesticides.

For consumers, animal welfare is an important element of integral sustainability. They demand that livestock farming sectors provide sufficient safeguards for animal welfare in their farming practices. However, EU agreements on such practices – which result in higher production costs – do not apply to producers outside the EU. In order to extend the level playing field to imports from non-EU producers, therefore, purchasing groups should now take the initiative. This includes supermarkets, which are free to require that non-EU food producers meet the same requirements as EU producers. And whatever products supermarkets include in their offer will be sold. The World Organisation for Animal Health (the OIE, which has 181 member states) has recently drafted a set of guidelines for animal health and animal welfare. This shows that the call to reconsider our approach to farm animals is not limited to the Netherlands or Europe, but is heard across continents and cultures.

4.3 Welfare of farm animals

In 2018, Minister for Agriculture, Nature and Food Quality Schouten commissioned a survey of facts and figures on the various livestock farming sectors⁴. The authors concluded that the availability of statistics on animal health and welfare was limited. As a result, it proved impossible to present a comprehensive overview of welfare conditions in each livestock farming sector. That is why we have to rely on the opinion of experts in this regard. Occasionally, we can also produce a substantiated estimate of animal welfare development based on the changes in the housing and care for the animals concerned.

Animal species that are allowed to be kept for the production of animal products in the Netherlands are included in Appendix II to the Animal Husbandry Decree (*Besluit houders van dieren*). In this reflection, we have limited ourselves to the most common animal species kept in this country for their products (see Table 1). The average age (in months) at which these animals are slaughtered ranges from one-and-a-half for broilers sold without a quality label to six for white veal calves and fattening pigs, 7-12 for pink veal calves, 16-20 for laying hens, 36 for breeding sows and 68 for dairy cattle.

Table 4.1: Animal places in 2018, expressed in millions per species.*

Animal species	Millions of animal places
Broiler chickens	41.8
Broiler breeders	8.2
Laying hens	45.5
Laying hen breeders	1.5
Fattening pigs	5.6
Breeding pigs	1.2
Dairy cows	1.6
Young stock	1.0
Veal calves	1.0
Sheep	0.8
Milk goats	0.6

* Data provided by CBS⁵. For slaughter animals that stay at the farm for less than a year, the number of animal places must be multiplied by the number of production cycles per year to calculate the total number of animals in 2018.

Major steps forward

Major steps forward have been made over the past 25 years to address concerns in society on the welfare of farm animals. Welfare improvements have been introduced in a range of livestock farming systems, in part in response to legal provisions.

- For instance, since the ban on dark and cramped cubicles in 2004, it has been mandatory for farmers to keep veal calves in groups. In addition, legal standards have been introduced for the provision of fibrous roughage and for the average haemoglobin content of the calves' blood;
- Laying hens are no longer kept in battery cages but in free-range systems, some of which even include open-air runs;
- The practice of beak-trimming for chickens has been banned;
- Dairy cows are housed in modern, more comfortable stables with lying boxes, where they enjoy more air, light and freedom to move compared with the old tying stables;
- Milking systems have greatly improved; at a quarter of all farms, dairy cows can now decide for themselves when and how many times a day they want to be milked;
- It has been a legal requirement for farmers to keep sows in groups since 2013, and pig farmers are now also required to provide sufficient distraction tools for their animals. In the Netherlands, 65% of all male piglets are no longer castrated⁶.

For the remainder, the sector is awaiting acceptance of non-castrated animals' meat in Germany and other export markets;

- Since April 2007, foxes and chinchillas may no longer be kept for their fur. Effective January 2024, the same will apply for mink in the Netherlands.

In addition, considerable progress has been made in animal disease control programmes. Due in part to the health and welfare requirements that it must meet as a major export country, the Netherlands now has one of the healthiest animal populations in Europe.

- The prevalence of *Salmonella* in poultry has been falling for over twenty years. Thanks to the salmonella programme, the Dutch poultry population is now almost entirely free from *Salmonella*;
- The Netherlands has been free from *Aujeszky* in pigs for years, thanks to a successful nationwide eradication programme;
- Since the outbreak of Q fever in 2009, a screening and vaccination programme has been implemented at all goat farms that supply milk. There have been no further Q fever outbreaks in any goat population in the Netherlands since 2015;
- All cattle farms that produce milk are checked for both *Leptospirose* and *Salmonella* (both in bulked milk) and *Paratuberculosis* (in the milk of individual cows). All farms that produce milk are free from *Leptospirose*; as regards *Salmonella* and *Paratuberculosis*, prevalence rates have declined to less than 5% of farms and 1% of cows respectively;
- Currently a programme is being implemented at all dairy farms in the Netherlands to eradicate IBR (infectious bovine rhinotracheitis) and BVD (bovine virus diarrhoea);
- The Netherlands has been free from *Mycoplasma synoviae* and *gallisepticum*, *Salmonella gallinarum* and Newcastle Disease in poultry flocks for years;
- There is a programme in the Netherlands for the proactive monitoring of veterinary diseases among all farm animals and horses.

Persistent and new problems

So, the lives of animals in all Dutch livestock farming sectors have improved over the past few decades. But even if several serious welfare problems seem to have been resolved, many further improvements are required. For example, there are persistent concerns over high production requirements, the short lifespan of farm

animals, the limited space they are given, the substandard climate in many stables and the limited opportunities for the animals to engage in natural behaviour. Many citizens feel that good animal health is only part of the solution. For example, in our public survey⁷ half of the respondents disagreed or completely disagreed with the following statement: 'I can accept a situation in which pigs, cows and chickens live in conditions that offer insufficient space and distraction, as long as this does not harm their physical health'. In addition, 45% of respondents agreed or completely agreed that 'If we are unable to allow pigs, cows and chickens to display their natural behaviour, we should decide not to keep these species as farm animals'.

And on top of these persistent issues, new problems have arisen. For example, group housing exposes animals to group dynamics, which is not necessarily a positive thing for each individual animal. In addition, it has become more difficult for livestock farmers to keep an eye on the welfare on individual animals that live in such large groups. Uncastrated boars can display aggressive and excessive sexual behaviour. Feather pecking among poultry and tail and ear biting among pigs are due to complex causes, often arise quite suddenly, develop explosively and are very difficult to control. For these reasons, livestock farmers continue to regard interventions such as tail-docking, beak-trimming and dehorning as a necessary evil. However, the practice of beak-trimming in chickens has been banned, and a ban on routine tail-docking in pigs is in the making.

The lifespan of animals is a sensitive issue in the public debate. What is at issue is not so much an animal's life span per se, but life span as a measure for the quality of life. In the popular view, reduced life span is a consequence of a failing livestock farming system in which animals become vulnerable, get sick and exhausted, are no longer cost-effective and, for those reasons, need to be removed early. Long life span is as reassuring as a pig's curly tail – we take it as a measure for the quality of life that the animals have experienced. This is reflected in the results of our public survey: most respondents (83%) felt it was justified to kill animals if their suffering is serious and there is no prospect of improvement, but only 20% felt it was right to kill an older production animal because it has lost its economic utility value. Responses to other statements in the survey likewise reveal resistance to the killing of animals other than for meat production, if it does not serve the animal's best interests. What citizens probably object to most, it seems, is the high price that animals have to pay

in high-production settings (milk, eggs, meat), the serious discomfort and medical conditions that eventually arise from such conditions, and premature slaughter to prevent high costs of care.

Approximately 40% to 50% of respondents believed that the welfare of farm animals had strongly improved over the past decade, that organisations which are professionally concerned with leisure animals are doing their utmost to improve the welfare of those animals, and that farm animals are far better off in the Netherlands than elsewhere in Europe. At the same time, approximately 25% of respondents was not satisfied with the efforts made by those who keep and care for animals and by the government, and highlighted persistent troublespots for which solutions must be found. It may prove quite a challenge however to find effective solutions if the current conditions – high-volume production at low prices – remain in place. There is also a relatively large middle segment (35-45%) who are less outspoken about these topics.

4.4 Positive developments

Quality labels

One promising development is the launch of quality labels to help consumers make animal-friendly choices when buying meat, dairy products and eggs. The ‘Better Life’ label, organic products, ‘On the way to Planet Proof’ and meadow milk – these are all valuable initiatives aimed to persuade consumers to help improve animal welfare by paying a little extra. While the shift from a lowest cost-price approach to more sustainable production methods cannot be realised overnight, the growth of quality labels for sustainable products continues. In 2017, Dutch consumers spent approximately 6.5 billion euros on meat and meat products, eggs and dairy products⁸. Of that total amount, over 1.6 billion euros (25%) was spent on products with a sustainability label. Just over half (53%) of this sustainable food carried the ‘Better Life’ label of the Dutch Society for the Protection of Animals. In 2018, the ‘Better Life’ label achieved 25% growth, most of which came from the eggs segment as ‘free-range’ was granted one star in the three-star system⁹. Most of the growth was seen in the one-star segment, which means that millions of animals have seen a modest improvement in their lives. The market penetration of quality labels was also reflected in our public survey. Of all respondents, 56% indicated that when

buying meat they always (18%) or regularly (38%) opted for products that carried a 'Better Life' label or were otherwise produced in an animal-friendly manner. We welcome the rise of quality labels; indeed, we believe that quality labels should be supported and implemented in such a way that livestock farmers receive an integral reward for their efforts to improve animal welfare.

However, calling on consumers to help improve animal welfare by making conscious purchasing decisions is a strategy that comes with some important limitations. Despite the growth of sustainability labels such as 'Better Life' over the past 12.5 years, three quarters of the total turnover for meat, milk and eggs comes from products without such a label⁸. A famous Dutch poet once wrote: 'Laws and practical objections block the path from dream to deed'¹⁰. In 2018, the one-star segment accounted for three quarters of all turnover from 'Better Life' products. As regards pork, the one-star segment is now the basic standard for supermarkets. In other words, this is the lowest animal-friendliness category available to consumers. This means that turnover from one-star pork is determined principally by supply and probably very little by any conscious demand among consumers for more animal-friendly products. Given the modest growth in turnover, around 1% a year, on average, it is clear that improving the lives of millions of farm animals through quality labels is a long-term effort. It is becoming increasingly clear that our purchasing behaviour is largely determined by routines – engrained habits – that are controlled by our subconscious and by clever marketing. Another factor is that not all household budgets are sufficient to pay extra for animal-friendly products. We should also bear in mind that 'quality' in terms of reducing meat consumption is at odds with our deeply rooted culture of eating cheap meat. In this transition, it is the supermarkets that have the power to tilt the scales; in 2017, 91% of all 'Better Life' products were sold in supermarkets.

Short food supply chain concepts

Alongside initiatives aimed at incremental improvement of animal welfare through quality labels in mainstream channels, a variety of short supply chain concepts have emerged based on full transparency and restored trust between producers, retailers and consumers. Kipster and Hamletz are two leading examples. These pioneers strive to escape from the lock-in of conventional cost-price driven livestock farming

by integrating more sustainable production practices. Their branded products find their way directly to a growing group of consumers through fixed price agreements with retail associations.

Quality systems

In the meantime, other parties have also begun to take action to further improve the welfare of farm animals. For example, more and more quality systems now also include measurable welfare indicators. The impetus for that came from the European Welfare Quality project. It entails a structured approach (plan-do-check-act) to ensure that animal welfare is a standard component of quality improvement efforts. The sector players or associations either implement these animal-based measures or pursue their continued development. Examples of this approach include the Cow Compass (*Koekompas*), the Calf-OK score (*KalfOK-score*), the Tail Biting Risk Check – which will be implemented in pig farming shortly – and the foot pad injuries score for broilers.

Implementing such quality systems is usually a responsibility of independent supervision and certification bodies. In these systems, livestock farmers with insufficient scores undertake towards their clients to draw up an improvement plan, usually in collaboration with a vet. What is more, the measurable variables underlying these quality systems provide opportunities for price differentiation on the basis of quality and bonus-malus schemes. These will encourage suppliers to continue improving the quality of farming conditions. In this way, animal health and welfare can be optimised within the boundaries set by conventional livestock farming systems.

Sceptical citizens

Many citizens have nonetheless remained sceptical. In our public survey, 30% of all respondents were not convinced that animal welfare can be improved within the boundaries of conventional livestock farming systems. Another 30% didn't know, while the remaining 40% did see opportunities for such improvement. It appears that the scale on which the animals are kept plays an important role in public opinion on this issue. Approximately 60% of respondents believe that in mega-stables there can never be sufficient care for the health and welfare of farm animals, compared with nearly 20% who do believe this is possible. Respondents who live in highly urbanised areas and respondents who are in contact with animals in everyday life

had less confidence than others that the welfare of animals in modern livestock farming can be safeguarded.

Vegetable food

Substitution of animal products with vegetable products is increasingly seen as a necessary transition, especially from a sustainability perspective. In the Netherlands, the food pattern is already shifting from animal to vegetable products. While the number of vegetarians has stabilised in recent years (at approximately 4-5%), the shares of vegans (approximately 0.6%) and flexitarians (approximately 55%) are rising^{11,12}. Veganism is particularly gaining in popularity among young people and students in the Randstad conurbation. The increase in the share of vegetable consumption is mainly due to growing numbers of flexitarians, who do not eat meat on three or more days a week¹². Our public survey confirms that picture, with 4% of respondents stating that they never eat meat and 42% that they eat meat on no more than four days a week. The share of meat substitutes has also risen sharply¹³.

Another alternative to animal products that is sometimes mentioned is cultured meat. Although some claim that cultured meat will become widely available to consumers within just a few years¹⁴, for the time being it is mainly found in laboratories as a research subject. Meat substitutes however have come within easy reach. Even so, only 20% of respondents in the public survey expected that pig farming would come to an end in the short term due to the rising popularity of meat substitutes and meat analogues. Nevertheless, investors appear very much aware of the potential of meat alternatives. For example, Beyond Meat – a producer of vegetable meat substitutes – saw its value more than double within a day upon its recent stock market launch. Between 2016 and 2018, the company's turnover grew from 16.2 million to 87.9 million dollars. It has recently opened a branch in the Netherlands. The recent takeover of De Vegetarische Slager by multinational Unilever likewise confirms that meat substitutes have become serious business.

Improvement paths

In summary, a range of developments are now under way that will help to improve the welfare of farm animals. Overall, those developments take place along (combinations of) the following paths:

1. minimum standards – and initiatives to raise them – that are safeguarded by national or European legislation;
2. guidelines that are binding on participants, drawn up by intergovernmental or international organisations;
3. quality systems that structurally improve animal welfare within animal production chains, or within links within such chains, on the basis of measurable variables;
4. production requirements imposed on suppliers, set by the buyers of animal products;
5. inclusion of welfare requirements in quality labels which, based on market mechanisms, enable consumers to opt for more animal-friendly production methods;
6. substitution of animal products with vegetable products in our daily menu.

It is important to bear in mind that products and production systems are subject to a host of other requirements, in addition to those concerning animal welfare. Some requirements, for example those regarding the environment and public health, are not necessarily compatible, as a result of which animal welfare may be compromised. A case in point is the requirement that chickens must be able to walk around freely, which should not however cause any fine particle issues. Such contradictory requirements are clearly bothering producers and compel them to make balanced and integral choices.

4.5 Animal welfare in circular agriculture

‘Dutch agriculture will have to switch towards circular agriculture,’ says Minister Schouten in her vision for the future entitled ‘Landbouw, natuur en voedsel: waardevol en verbonden’, dated September 2018. While garnering broad support, the vision also raised a great many questions. What does circular agriculture entail for Dutch farmers and horticulturists in an international market? And what does it entail for animals in the livestock farming sector? The questions that are most relevant to the Council on Animal Affairs are the following: how can we prevent the considerable attention in society for climate and the environment from undoing the progress on animal welfare and animal health achieved in livestock farming over the past decades? And second: how can we ensure that we continue making progress with a view to growing concern in Dutch society over animal welfare?

In response to Minister Schouten's vision for the future, the Dutch livestock farming sector will shift its focus towards achieving recognition in society as a great promoter of circular agriculture. The ambition is for Dutch circular agriculture to pave the way for the circular economy across the EU and beyond. The first question that presents itself in this regard concerns the role of livestock farming in the new circular agriculture concept. Opinions are strongly divided over this in Dutch society.

Section 4.4 above discussed the gradual shift in the Dutch food pattern from animal to vegetable products. This is consistent with the results of a long-term study conducted by Hannah van Zanten.¹⁵ She argues that rather than striving for maximum productivity per animal, we should aim to feed as many people as possible per hectare of land. This would require us to feed our livestock mainly with products that are not suitable for human consumption. Examples include products from secondary flows in the food industry, or grass from marginal land. This would prevent a situation in which the production of animal feed reduces the area of land available for vegetable food production for human consumption. Such an agricultural system would enable the livestock farming sector to produce a quantity of animal protein that equals approximately 9 to 23 grams per day per inhabitant of the Netherlands. That would meet approximately one third of our daily requirement – which is around 55 grams of protein for a person who weighs 70 kilograms (according to the Netherlands Nutrition Centre). Optimised food production should cause the average consumption of animal products in the Netherlands to fall by about one third. Van Zanten calls for livestock farming systems geared towards maximising protein production for human consumption per hectare. A major plus would be that in this system, production would also remain within the boundaries for public values such as soil, air, water and nature quality as well as climate, landscape and biodiversity. In other words, it would respect the limits imposed by our natural environment.

We may conclude, therefore, that livestock farming could definitely help make the transition towards circular agriculture. Note however that this presupposes the downscaling of the livestock farming system on a global level. In that system, practically all inputs are derived from vegetable raw materials and secondary flows from the food industry that are unsuitable for human consumption. Moreover, circular agriculture can be expected to result in a situation where the size of livestock farming

is determined by the local availability of such raw materials, rather than the other way about. As a result, overseas imports of raw materials that are rich in protein, such as soybean meal, would decrease. Livestock farming would also help to meet the demand for organic crop fertilisers needed to remove synthetic fertilisers from circular agriculture¹⁶. Nature-inclusiveness and diversity (including biodiversity) should be central concerns in circular agriculture.

4.6 The way forward

Current livestock farming chains are closely tied up with the international market. A variety of factors contribute to that, such as the export of live breeding stock, technology and know-how, and carcass balancing of animal products. Carcass balancing is a practice that ensures maximum valorisation of all parts of an animal so as to achieve maximum economic value in a global market. For example, the ears and tails of Dutch pigs are sold as delicacies in Southeast Asia. Demand for animal products is growing fast in emerging African and Asian economies – as it did in the Netherlands and other parts of Europe in the 1960s and 70s. In these emerging economies, the livestock sector is experiencing developments similar to those we experienced half a century back, with an accompanying increase in attention in society for food safety, animal welfare, public health and the environment.

Together with several other countries in Northwestern Europe, the Netherlands has achieved a leading position in introducing more sustainable livestock farming practices. Through the export of basic materials, technology and know-how, the country is helping to accelerate sustainable practices in international livestock farming. In this context, it is crucial to ensure a central focus on the latest insights into opportunities for further sustainability improvements and circular agriculture. Strong segmentation of national and international markets is a necessary condition for a circular agriculture that respects animal dignity. Dutch livestock farming is in the final stages of its transition from a supply-driven cost-price model towards a demand-driven added value strategy supported by innovative business models (see ‘Valuable perspectives for meat’¹⁷). Given the differences in scale, the government must ensure a widely supported basic level of animal welfare and animal health for all animals in livestock farming chains. The renewed livestock farming system in circular agriculture should ensure and demonstrate that all animals have sufficient

space, provide enriched housing where animals can engage in natural behaviour, and remove the need for physical interventions in animals. This calls for a range of improvements to be implemented in livestock farming in the years ahead (see ‘25 years of struggling with interventions’¹⁸).

The European standard will continue to set the basic level for animal welfare in closed livestock farming chains in the European market and beyond. Collaborating parties in the chain will apply IT and technologies to ensure the efficient conversion of vegetable proteins from residual flows in the food industry (and elsewhere) into meat, eggs and dairy products. In such a renewed livestock farming system, it will still be possible for animal products with a small footprint to be sold on a global scale. In addition, there will be space for a variety of closed livestock farming chains with higher animal welfare standards. Apart from the drive towards smaller-scale operations, the challenge for those chains is to respond effectively to animal-related issues, such as the utilisation of ‘residual animals’ and concerns about killing animals and transport distances.

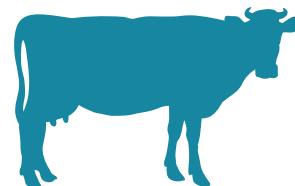
Given the level of knowledge, the intensive collaboration and the structure of our livestock farming system, we may view the Netherlands as a breeding ground for the development of and research into more sustainable livestock farming systems that respect the interests of people, animals and the planet. This calls for an integral, transparent approach in which all the various interests are carefully weighed.

4.7 Summary

Parallel to the rapid rise of Dutch livestock farming, the statutory position of animals has improved. We have come to think differently about animals, and that has perceptibly improved their welfare. In addition, the introduction of quality labels for more animal-friendly food products has contributed to the welfare of animals. Despite these developments, livestock farming continues to struggle with persistent and new welfare issues, at a moment in time when the sector needs to redesign its practices in line with the worldwide transition towards a circular food production system. To safeguard its future, Dutch livestock farming will have to focus on circular agricultural practices that respect the dignity of animals.

Actions required do on behalf of farm animals

- Engage in dialogue on further improvements to the welfare of farm animals in circular agriculture and its implications for housing, breeding and care – once and for all, ensure a genuine focus on animal welfare¹⁹;
- Strengthen awareness and knowledge, among animal keepers and livestock farmers, of animal-friendly practices in the keeping and care of farm animals, with more attention for species-specific behaviour;
- Stimulate the development of more animal-friendly (short food supply chain) concepts that incorporate animal welfare levels above the statutory minimum;
- Support sector players in the use of animal-friendliness criteria in quality labels and chain quality systems;
- Assume responsibility for improving the knowledge infrastructure so as to better understand the needs of farm animals;
- Encourage transparency on the life of farm animals and further promote awareness among consumers;
- Develop an agricultural system that is in line with public values.



Sources

1. Van Ewijk, C. and Teulings, C., 2009. The Great Recession. The CBP Netherlands Bureau for Economic Policy Analysis on the credit crisis. Balans publishers, Amsterdam, 247 pages.
2. United Nations, Department of Economic and Social Affairs, Population Division, 2018. *World Urbanization Prospects*. The 2018 Revision, custom data acquired via website. Accessed on 17 July 2019.
3. Boogaard, B.K., Bock, B.B., Oosting, S.J., Wiskerke, J.S.C. and van der Zijpp, A.J., 2011. Social Acceptance of Dairy Farming: The ambivalence between the two faces of modernity. *J Agric Environ Ethics*. 24, 259-282.
4. Van der Peet, G., Leenstra, F., Vermeij, I., Bondt, N., Puister, L. and van Os, J., 2018. *Feiten en cijfers over de Nederlandse veehouderijsectoren 2018*. Wageningen Livestock Research Rapport 1134, 110 pages.
5. CBS Statline, Landbouw; gewassen, dieren, grondgebruik en arbeid op nationaal niveau. Accessed on 17 July 2019.
6. Backus, G., Higuera, M., Juul, N., Nalon, E. and De Briyne, N., 2018. *Second progress report 2015 – 2017 on the European declaration on alternatives to surgical castration of pigs*. Expert Group on ending surgical castration of pigs. Brussels, 18 pages.

7. Kantar Public, 2018. The state of the animal in the Netherlands. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
8. Logatcheva, K., Hovens, R. and Baltussen, W., 2017. Sustainable Food Monitor. Memorandum published by Wageningen University & Research.
9. IRI, 2019. Sales of more sustainable food doubled in four years. Press release, 3 June 2019.
10. Elsschot, W., 1910. Het huwelijk ('Marriage'). From 'Verzen' by Willem Elsschot, 1882-1960.
11. Postma-Smeets, A. and van Dooren, C., 2018. Vegetarian and vegan diets. Factsheet. The Netherlands Nutrition Centre, The Hague, 8 pages.
12. The Netherlands Nutrition Centre, 2015. More than half of Dutch citizens are 'flexitarians'. Press release.
13. NOS, 2019. Popularity of meat analogues growing fast, meat sales falling. Press release.
14. *De Volkskrant* newspaper, 2018. De Voedselzaak.
15. Van Zanten, H., 2016. Feed sources for livestock: recycling towards a green planet. Wageningen University & Research dissertation, 252 pages.
16. Wageningen University & Research (2018) Circular agriculture: a new perspective for Dutch agriculture. Website article, published on 13 September 2018. Accessed on 17 July 2019.
17. Reinders, M.J., Poppe, K., Immink, V., van den Broek, E., van Horne, P. and Hoste, R., 2013. Waardevolle perspectieven voor vlees. LEI Wageningen UR, The Hague, 72 pages.
18. Van den Berg, B., 2018. 25 jaar worstelen met ingrepen. Hoe te stoppen met betwiste ingrepen in de veehouderij? Society for the Protection of Animals, The Hague, 78 pages.
19. Staman, J., 2019. It's about time we really focused on animal welfare. *De Volkskrant* newspaper, 21 May 2019.



5. Pets, passion and professionalism

REFLECTION ON COMPANION AND HOBBY ANIMALS

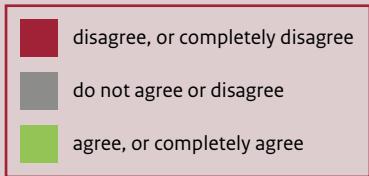
In this chapter we will consider the welfare of companion and hobby animals. These animals play a variety of essential roles in our society. The ties between humans and animals are becoming ever closer, and many owners are prepared to make substantial financial sacrifices on behalf of their animals. Overall, this has had a positive effect on the welfare of the animals concerned. But could there be any downsides to this development? And is the welfare of our precious companions really guaranteed, or are we blind to our own shortcomings? In the age of the Internet, how do people gather knowledge about keeping and breeding animals, and what do they do with that knowledge in practice? Passion and professionalisation among the people who love and keep animals – that is the central theme of this chapter.

5.1 An enrichment of our lives

This reflection is concerned with the animals we keep as companions or for hobby purposes. Apart from pets that live in our homes, this category also covers larger animals such as horses and ponies. So we are dealing with a wide variety of species and contexts. Over the past 25 years, our relationship with such animals has changed considerably – and it is still changing. This has to do with a range of factors, including urbanisation (which has put nature at a distance) and growing prosperity (which has given us more money and leisure time to spend). Our public survey¹ has shown that for many people in the Netherlands, the love, warmth and companionship they receive from animals are the main reasons for keeping them – 82% mentioned this as one of the most important positive aspects of their interaction with animals (see also De Cock Buning *et al.*²). ‘Find heaven on earth on a horse’s back’, as a Dutch saying goes – reflecting the genuine happiness people may experience when interacting with animals.

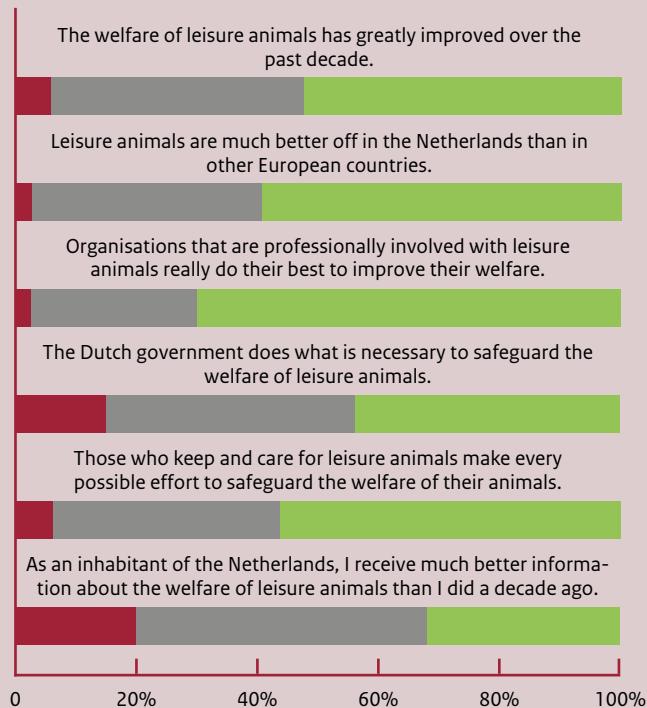
According to many respondents in our public survey, animals are important for the emotional development of children – 58% mentioned this as one of the most important positive aspects of our interaction with animals. It is not surprising,

What are the views of the Dutch public on the state of leisure animals?



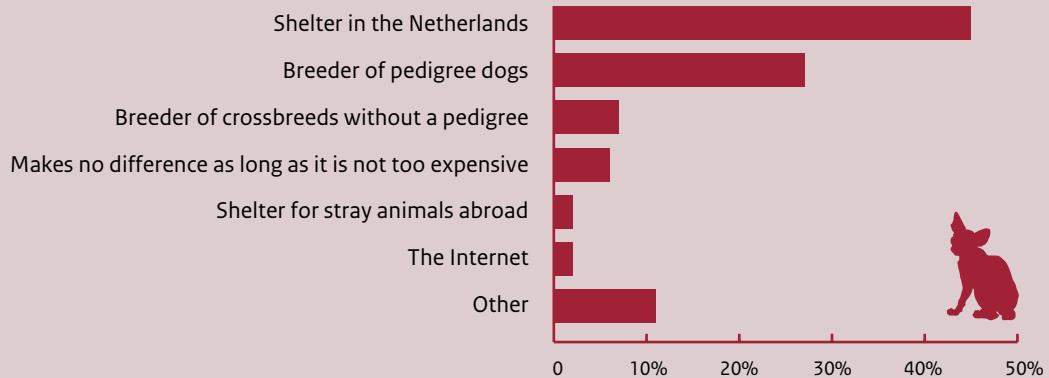
Please consider the statements below, and indicate the extent to which you agree or disagree with them.
Base: half of all respondents (n=1,000)

Leisure animals: animals that are kept in private homes or other locations (such as riding schools/stables, children's farms or zoos) for leisure purposes: companion animals, hobby animals and zoo animals.



Dutch people would sooner buy a dog from a shelter than from a breeder

Respondents were asked where people in the Netherlands would buy a dog if they wanted one. Most respondents said they would buy a dog at a shelter: 45%



If you wanted a dog, where would you go to buy one? Base: all respondents (n=2,010)

therefore, that most pets are kept in households with children. Three quarters of respondents (75%) believe that respect towards animals will also make us more mindful of values that are important for relationships between people, such as empathy and compassion. So pets clearly have an important emotional value for people, not far removed from that of the people near to us and characterised by similar aspects of intimacy. In 2018, approximately 25 million companion animals were kept in the Netherlands (see Figure 1 on the next page).

In addition, dogs and horses are gaining appreciation as providers of services for people with a mental or physical disability, thanks to their supportive, co-therapeutic and enriching contributions to these people's lives. In 2016, there were no fewer than 652 active KNGF-trained guide dogs and clients in the Netherlands⁴, and 3,300 child therapy sessions using dogs⁵. In addition, riding schools affiliated with the Horse-riding for the Disabled Federation (FPG) welcome six thousand riders with a mental or physical disability every week⁶, and the growth in the number of horse coaches⁷ appears unstoppable. It would be a good thing if policy promoting the

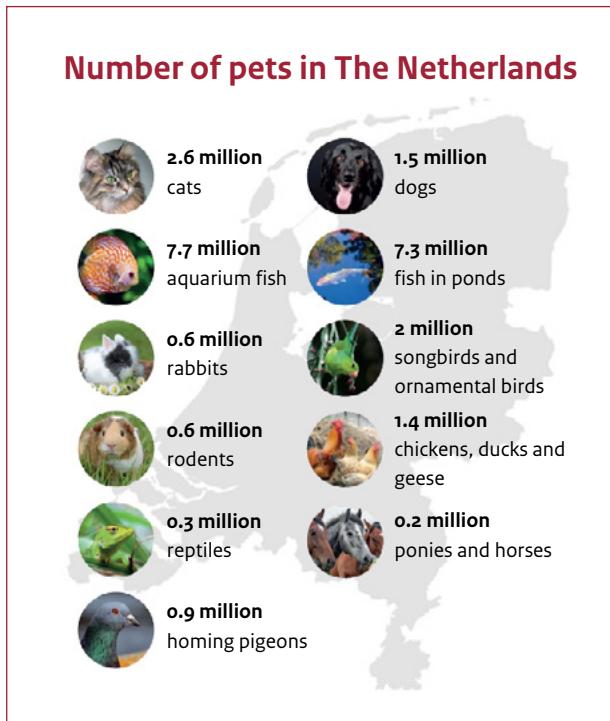


Figure 5.1: In 2018, 4.3 million households had approximately 25 million companion animals, with the numbers broken down by species as shown here. Source: annual survey among 7,500 households in the Netherlands, commissioned by Dibevo³.

positive role of companion and hobby animals in sport, welfare and health received more attention (also from the Ministry of Health, Welfare and Sport).

We assume that companion and hobby animals also have a positive influence on our overall health, especially among the elderly⁸. Dog owners have more exercise, go out of doors more often and chat more easily, which can help them feel less isolated and lonely. In addition, caring for a pet gives people the pleasant sense of being useful, in that there is ‘somebody’ that needs them. However, there is a lack of thorough research in this field. Pet owners are different from people without pets across a wide range of socio-demographic variables, such as gender, age, race, home situation, income and employment status. As these differences also correlate

with their health, it is extremely difficult to isolate the effect of pet ownership on individual health⁹.

5.2 Huge sacrifices

Practically all people in the Netherlands say that animal welfare matters a lot to them. When asked ‘On a scale of 1 to 10, please indicate how much animal welfare matters to you’, the respondents gave an average score of 8.2. Of the respondents who are in contact with animals in a private or professional capacity in everyday life, 89% gave a score of 8 or higher. So if people attach so much importance to animal welfare and have easy access to the knowledge required to ensure it, why is there still so much room for improvement when it comes to welfare among leisure animals? Or is it not as bad as it seems, because of incidents being exaggerated in the press or negative framing that distorts our view of reality? We will return to this later in this chapter.

People increasingly tend to regard their pets as members of the family. The social status of pets has risen; that, in turn, has pushed up demand for expensive and high-quality veterinary care and has made people willing to make significant financial sacrifices on behalf of their pets. Polls conducted by TNS-NIPO¹⁰ reveal that the average dog or cat owner is prepared to spend 750 to 850 euros to save a pet’s life. This is a considerable amount, which has also boosted the market for pet health insurance¹¹. In our survey, 48% of respondents agreed or completely agreed that ‘Owners of a sick hobby animal or pet should always do whatever it takes to save the animal’s life, at any cost’. No doubt this is good news for the animals concerned. Thanks to increased attention and improved care, many pets now lead longer and better lives – provided that age-related issues can be remedied. At the same time there is a risk that animals are kept alive by patching them up again and again, which is not in their best interests.

Increased demand for specialist veterinary know-how has pushed up the level of professionalism the supply side. Today, vets are expected to have all sorts of – often expensive – tools and equipment. This explains why more and more of them are joining very well equipped veterinary centres. In addition, many vet practices are being taken over by foreign investors with a more rigorous management focus on

efficiency, quality, turnover and costs, resulting in better customer experience and higher profits. AniCura, which was taken over by Mars Petcare in 2018, is a case in point. With its more than 4,000 veterinary professionals and 200 veterinary clinics in seven EU Member States, AniCura has quickly developed in a major player and presents itself as a role model for high-quality specialist veterinary care. As the quality of veterinary care has increased, so have the costs, which may well become prohibitive for some pet owners. This explains the increasing importance of pet care insurance policies.

Another illustration of the modern relationship between humans and animals can be seen in how we deal with the death of our pets. More and more people opt to put their beloved pet to sleep at home, at the end of its life. There is also a market for pet crematoriums, pet cemeteries, pet urns, and jewels made from their ashes. These phenomena reflect deep emotional ties between humans and animals. Neither will owners be surprised to receive a condolence card from the vet after their pet has died; indeed, most people highly appreciate such a gesture. In short, animals are very important for people.

5.3 Should we be satisfied with the situation?

When asked: ‘What mark between 1 and 10 would you give for the way leisure animals are generally treated in the Netherlands?’, respondents awarded an average score of 7.3. This is higher than the scores for the other three animal groups (see chapter 2). ‘Leisure animals are much better off in the Netherlands than in other European countries’, according to 60% of respondents. Most people (70%) agreed or completely agreed that organisations professionally involved with leisure animals are really doing their best to improve the welfare of those animals; 57% agreed or completely agreed with this as regards people who keep or care for such animals. More than half (53%) of respondents also felt that the welfare of leisure animals has strongly improved over the past decade. Note that in the survey, leisure animals included zoo animals, which are discussed separately in chapter 6. We may tentatively conclude that, overall, people are quite satisfied with the level of animal welfare achieved, although they still see room for improvement.

But is their optimism really justified? Or are we taking a rosy view in the Netherlands, preferring to pretend that our dear housemates are doing fine while in fact their quality of life is insufficient? After all, half of the Dutch population have pets and admitting this would amount to self-criticism. Of course the strengthened ties between humans and animals have also produced all sorts of positive effects, for both humans and animals, with humans increasingly regarding animals as equals. However, we should not ignore the negative aspects. The most important of these are discussed below.

Health risks

Wherever animals live in proximity to humans, health risks will arise. This is because certain pathogens, including resistant bacteria, can pass from animals to humans. This is especially risky for people whose resistance is compromised (because they are receiving chemotherapy, for instance) or the elderly, and for people who are injured or have a chronic disease. Sixty per cent of pet owners allow their dogs or cats into the bedroom; 45% and 60% allow their dogs and cats, respectively, on their beds, and 18% and 30% allow them *in bed*¹². Half of all owners who allow their pets to sleep in their beds or bedrooms are totally unaware of the risks to their own health.

Risk of infection also occurs when owners feed their pets raw meat; a trend that originated in Australia but is now spreading – much to the concern of vets. Promotion via the Internet has helped it to develop into a true hype. The animal food industry is a multi-billion business, so the promotional drive is very strong, targeting the notion among owners that their pets should be given ‘natural’ food. However, raw meat poses a risk to human and animal health due to transmission of multiresistant bacteria and parasites. Some people tend to dismiss scientific insights into these risks, claiming that ‘science is just one among many different opinions’. This makes it all the more important for vets to keep bringing this risk to the attention of their colleagues in human healthcare, and for sector parties to draw up a certification system to ensure the safety of raw meat.

Another growing problem, of a totally different kind, is that companion animals, like humans, develop lifestyle diseases. For example, there has been an alarming increase in the number of obese dogs and cats in recent years. According to the latest estimates, one in three dogs and cats, and almost one in five horses, in the

Netherlands are overweight or obese¹³. People are inclined to strengthen their bond with animals by feeding and rewarding them with food products that are unsuitable or unnecessary for pets and hobby animals. Owners are aware that those products are unhealthy, but find it extremely difficult to resist the urge.

Anthropomorphism

As we shall see in chapter 11, we have come to attribute more and more human characteristics and emotions to our pets. We talk to them, sometimes engage in long conversations with them, imagining that they understand us if we explain in clear sentences that they should not scratch the leather sofa when we go out for a minute. We console them and stroke them when they are frightened. While well-intentioned, many experts in animal behaviour tend to frown upon habits such as these. When it turns out that a dog does not understand what its boss is trying to convey in faultless grammar, both the dog and its boss may feel frustration, and the dog may develop behavioural problems as a result. The correct interpretation of animal behaviour is a skill that not everybody can be expected to master (see the box under the heading 'Educating animals'). For example, it is not advisable to run towards an unknown dog and hug it when the dog keeps its tail between its legs, is trembling and keeps its mouth shut tight. And when saddle-breaking a young horse, people sometimes think the horse is being wayward when it flattens its ears and jumps away. However, the animal is probably confused and does not understand what it is expected to do.

Anthropomorphism is also evident in the phenomenon of pet clothes. We make our dog wear a coat to protect it from the cold outside. And when it is snowing, we cover our horse with a trendy blanket and keep it in its pleasantly heated stable. Father Christmas hats, pants for dogs in heat, panty shields and jewellery for pets – we sometimes seem to forget that animals belong to a different species. This becomes problematic once the animal can no longer be an animal; when the dog is kept away from a muddy path because the dirt would spoil its cute little jacket.

Fads and external beauty

Once a potential owner has made the crucial decision to buy a particular kind of animal, the risk is that they ignore the facts and follow their heart – and fashion¹⁴. The primary focus is on the animal's external appearance, especially if the animal

Educating animals

Educating a horse, dog or cat is essential to ensure that the boss and the animal keep enjoying each other's company and to keep the animal happy and healthy. In addition to learning to interpret behaviour, owners will have to learn to act clearly and consistently. And it is important to always keep the animal's perspective in mind, both when encouraging desired behaviours and discouraging undesired behaviours. There is no point in punishing your dog when it returns home after a rabbit hunting exercise. Indeed, it may think twice before returning at all next time.

And we should also consider the way animals communicate among themselves. A recent study has revealed that horses are able to distinguish 17 different facial expressions in humans. This means they are true masters in perceiving subtle changes in body language. Nor should we forget that horses are essentially flight animals. They prefer to avoid aversive stimuli rather than to engage in a fight. It is only logical, therefore, that a horse will quickly learn to avoid pressure from a leg or hand. This is confirmed by examples from dressage: only by riding the horse and exerting pressure using his or her leg will a rider be able to teach a horse the most complicated figures.

is to become part of the family. After all, we all enjoy an attractive new feature in our living-room. On top of that, the animal's appearance also reflects on your own person. The pit bull breed is a good example. People prefer pets whose appearance or behaviour reflects their ideal self-image; the animal has become part of our identity.

Some people are even more demanding and want a dog or cat with a very specific body shape – excessively large or extremely small, a short muzzle, big eyes, extremely wrinkled or a minute head. Unfortunately, this 'over-typification' often condemns the animal concerned to a life full of health problems. This is a distressing consequence of overbreeding for external traits that appeal to potential bosses. Advertisements and films featuring specific races of animals – which often appear in human roles – also tend to fuel demand for these types of animals. The same applies to fashionable pets owned by celebrities. Breeders cannot possibly meet such increased and urgent demand in a responsible manner. The result is an increase in lookalikes and imported dogs – bred by breeders who are not obliged to comply with the rules set by breeders' associations.

In the horse segment, too, some breeders and riders will go to any lengths to improve the external appearance of their animals. Docking horses' tails and shaving their whiskers are generally considered to be unacceptable violations of a horse's integrity. While long whiskers around a horse's mouth and eyes may give the animal a less than perfect look in a competition, they do serve to warn the animal for objects near to its eyes or nose. In our public survey, three quarters of respondents said it was unacceptable to cut or shave a horse's whiskers. Carthorses, with their characteristic docked tails on their bulky behinds, provoke a persistent focus on external appearance. Despite the fact that the practice of docking horses' tails has been banned since 2001, horses with a docked tail could be seen in shows until quite recently. In the autumn of 2018, the law was amended so as to eliminate all exceptions, such as foreign escape routes or medical necessity. You must suffer to be beautiful, but it cannot be right for us to decide that an animal must suffer because we want it to be beautiful.

Hereditary conditions

Vets who treat companion animals are regularly confronted with race-related hereditary health and welfare issues. There are around a thousand known hereditary diseases among dogs and a few hundred among cats. Owners tend to accept those problems, thinking they are ‘normal’ and ‘typical of the race’¹⁴. A study by Hogeschool Van Hall Larenstein¹⁴ has shown that nearly 95% of owners of ‘high-risk’ dogs (dogs with above-average race-related health issues) would buy a dog of the same breed or type again, despite being aware of the associated risks and costs. Over 75% of respondents in this group say they would actually recommend such a high-risk animal to others. For these people, their passion for a particular type of dog outweighs the problems associated with the breed. ‘Familiarity with the type’ and ‘positive feedback from others’ proved the main factors encouraging people to buy such an animal. It was also found that many of these respondents could be characterised as ‘headstrong’. Conventional efforts to inform them are unlikely to be effective, therefore. It would make more sense to try and reduce the social incentives promoting the purchase.

Fortunately, scientists are making enormous progress in understanding hereditary diseases, which occur both in pedigree animals and lookalikes. Initiatives such as the ‘National Centre for Information on Companion Animals’ (LICG), ‘Petscan’ and ‘Fairfok’ encourage breeders and vets to improve their practices for breeding and keeping companion animals. Breeders’ associations are increasingly opting for solutions that involve identification of genetic risks through DNA testing and linking the results to targeted breeding advice. Collaboration between breeding experts, vets and breeders’ associations has also greatly improved. In addition, more and more breeders’ associations apply strict rules on responsible breeding, in order to prevent animal suffering due to irresponsible practices. All the same, in our public survey a mere 27% of respondents said they preferred buying a dog at a pedigree breeder; 45% said they preferred a dog from a shelter. However, that might be a socially desirable answer.

International trade

Unfortunately, dog breeders that apply responsible, transparent and professional selection and breeding practices are unable to satisfy domestic demand. Moreover, quality comes at a price that not everybody is able or willing to pay. This has

promoted the development of a lucrative market for imported dogs. Belgian investigative journalist Annick Hus (associated with the independent Apache platform) has exposed many of these abuses. It is easy to buy relatively cheap puppies online. However, what the buyers usually do not know is that many of those puppies are imported illegally from Eastern Europe, where they are sometimes bred in extremely poor conditions. The puppies are separated from their mothers too early and spend the first weeks of their lives in dark, polluted cages where they have no opportunity to habituate to people or human environments. Next, they are transported for sale, which may be anywhere in Europe.

In Belgium, more than 17,000 puppies were imported illegally from Slovakia in 2018 alone. A survey among 300 owners of such puppies revealed that as many as 35% of the dogs were ill when purchased. Animals were found not to have been vaccinated properly, if at all, and documents were forged. This could result in extra and costly visits to the vet, and after a while some owners had to say goodbye to their pets because they proved unmanageable. In Europe, an estimated eight million puppies are sold every year¹⁵; the puppy trade is worth over a billion euros in turnover. This involves both legal and illegal purchases. In 2016, the European Parliament noted that the clandestine trade in animals has links with serious organised crime¹⁶.

Dog puppies are not the only animals that find their way to Dutch living-rooms from abroad. Indeed, a whole range of other mammals, as well as birds, reptiles, amphibians and fish, experience the same fate. Many of those species require considerable know-how and commitment on the part of the person who keeps them, which makes them totally unsuitable for general consumer trade. A recent episode of Rambam¹⁷ on exotic animal species showed that it is relatively easy in the Netherlands to buy a caiman, a serval or a silver fox. The sellers are free to draw up their own rules. A simple pretext – the animal was meant as a present for a friend – was enough for the show’s staff to actually buy a caiman. More recently, Stichting AAP was called in to pick up two lion cubs at a private home in Kassel (Germany). The owner had ordered the cubs in Romania, and they were delivered without any prior personal contact. That things soon got out of hand should not have come as a surprise.

Online trade in animals

Typical channels for purchasing animals were different in the past. People could go to a vet shop, for instance, to select a puppy or kitten from a nest, or get the address of a person who was expecting such a nest. This is the route along which puppies and kittens used to change owners. While this method was not perfect either, it did permit some level of quality control. After all, the seller's reputation would suffer if the advice he had given proved totally misguided. He would be branded as an unprofessional or even fraudulent trader, and his shop would eventually be shut down. And the private individual where you picked a puppy from the nest risked finding an angry buyer on his doorstep if anything proved amiss with the animal.

Such self-regulating mechanisms are absent in online trade. If an online seller is criticised, he can simply create a new profile or decide to go offline for a couple of months as he has no animals to sell anyway. After that he can simply create a new account to find buyers for his new animals – enabled to do so by naive consumers who decide on the spur of the moment to purchase an animal online for the lowest price. The following post on the Facebook page of Stichting AAP, while anecdotal, illustrates how naïve people sometimes are: 'Hullo, I just bought a skunk for €350. His name is Stich ... he was not cheap, but can anyone tell me what I should feed him, how to keep him and how to get rid of that smell?' Skunks are unlikely to be bought in large quantities, but no doubt this kind of naivety also plays a role in the purchase of other animals that are not easy to keep.

In recent years, more and more people have been calling for further regulation of the online trade in animals. While we are aware that it is extremely difficult to regulate anything online, it is nevertheless very urgent to move in that direction. There is no doubt that an expert and professional sales channel would bring considerable advantages for the animals concerned.

Dumped animals

Of all people who purchase a pet, a relatively small proportion is unwilling or unable to care for it until its death. In many cases this is because the particular type of animal has gone out of fashion or is not the perfect match that the owner expected it to be. This involves several thousands of animals every year, which are sent to shelters or disappear in the online trade. As the Internet makes it so easy for supply and

demand to meet, shelters often serve as a last resort for animals that are no longer wanted and cannot be relocated. As many shelters are already filled to capacity, they face a difficult dilemma: should we put animals to sleep if we can relocate them? Most animal lovers are appalled by the idea of killing a physically healthy animal, so there is little support in society for the practice of putting animals to sleep if no new boss can be found for them. Only 18% of respondents in our survey agreed or completely agreed that it is acceptable to kill an animal if there is no more place for it in a zoo or shelter and it proves impossible to find a suitable home for it within six months. But what is the alternative if an animal cannot be relocated?

In the equestrian sector, horse markets are important trade venues, although this sector too is seeing more and more animal trade in online market places. International traders also visit Dutch horse markets – often, it seems, to purchase animals for slaughter. There is a structural surplus of horses and ponies in this country: mostly ‘hand-me-downs’ from the equestrian sector and colts, which are not in high demand in the Netherlands. Due to the high costs of slaughter and inspection, these animals tend to be sold to foreign buyers on horse markets¹⁸. In 2018, the sector launched the Horse Market Protocol, in collaboration with interest groups and the national government. The protocol, which aims to prevent animal suffering on horse markets, will of course only be effective if supported by sufficient enforcement.

5.4 Professionalisation starts with knowledge

As discussed in section 5.3, there is considerable room for improvement if it comes to the welfare of pets and hobby animals. Responsible breeding, keeping and caring for animals requires knowledge. For example, when it was discovered that full-spectrum lighting – including UV light – is good for reptiles, hobbyists in this segment were remarkably quick to put this into practice. As a result, many more species are now being kept and bred successfully. In 1975, for example, very few people were able to breed tortoises¹⁹. By 1990, breeding tortoises had become fairly common for many species, and in 2019 hobbyists were known to have actually destroyed eggs of Greek tortoises to prevent surplus breeding. Likewise, more and more species of birds, mammals and amphibians are now kept and bred successfully thanks to the know-how and efforts of their keepers – and to factors such as the improved availability of special types of food.

The Animal Keepers Decree 2014 (*Besluit houders van dieren*), which came into effect in 2014, has had significant consequence for people who are professionally involved with animals, including those who have worked with animals for decades. Under the decree, every person who is professionally involved with animals is required to obtain a proficiency certificate. Private individuals are exempted; they can find a virtually infinite supply of knowledge about keeping animals on the Internet. It is hardly surprising, therefore, that the Internet is the most important source of knowledge for people who keep animals¹⁴. It appears that they search extensively on the Internet for information about the characteristics and needs of the animal they intend to buy (or have just bought) and about the best way to meet those needs. They tend to start the search via Google, and then move on to consult websites and Facebook pages of specific forums and societies. Many are very much aware that not all the information they find is necessarily correct, and that a lot of it (especially on forums) is based on opinions rather than facts. This is why most people always consult several different Internet sources and compare the information they find.

In the equestrian sector, too, there is a clear trend for people to increasingly contact other enthusiasts on the Internet and exchange views and information. In 2009, Wageningen University & Research (WUR) investigated which sources of information were popular among horse lovers²⁰. The study found that family, friends and acquaintances were the most important sources of information, followed by the vet. The HAS National Riders Survey, conducted in 2018, similarly revealed that riders attach particular importance to the opinions of friends, family members, acquaintances, fellow riders and trainers²¹. In fact, these findings are not specific to horse riders; when looking for information, people generally tend to rely on family members and other people they know. When the WUR held its study in 2009, the Internet was not yet as popular as it is today and scored relatively low, in sixth position. The survey among riders in 2018 clearly showed that riders principally use social media (Instagram, Facebook, WhatsApp etc.) to consult family and friends.

Fortunately, there are plenty of websites that provide high-quality information. One much-visited site is that of the LICG (www.ligc.nl), which attracts a million unique visitors a year. The information on this website has been checked by experts. Professional retailers provide an LICG leaflet to every customer who has bought an animal. While some of the information posted on social media is nonsensical,

Gathering knowledge today and in the past

Council member Gijsbert Six: ‘In the late 1960s, as a 10-year-old I remember finding an aquarium at the dump. Some of the glass was broken, but my granddad helped me replace it. I used my pocket money to buy a copy of ‘The Aquarium: a Great Hobby for All’ and positively devoured the book from cover to cover. Warnings such as ‘Feed moderately! It is best to feed your fish a little bit several times a day’ and ‘The better you care for them, the healthier they will be’ were not wasted on me. I visited classmates who already had an aquarium and one of them gave me some guppies and water plants. Cute little fish, I enjoyed them for years. That’s how things worked in the days before the Internet.’

In 2017, Nikky Kok of Utrecht University performed a survey of the knowledge landscape concerning the welfare of captive companion animals²². None of the novice keepers interviewed had bought an informative book. They mostly gleaned their knowledge from websites, forums and online social channels. However, people do still gather knowledge among their friends and family members.

it usually gets corrected by others very quickly. For example, when somebody asks ‘How often do you worm your animals, and what drug do you use?’ in the ‘Schapenforum’ (sheep forum) Facebook group, the standard answer is: ‘Outdated. Tip: examine the manure first’.

Experts often feel an urge to send ‘the only correct and reliable’ message. However, they should realise that people no longer take an expert’s authority for granted. Not everybody will read a long piece of text. People are more inclined to gather bits and pieces of information from various sources and proceed on the basis of that, usually after also having consulted friends or social media. What they accept as the truth is the result of converging strands of information in the cloud.

5.5 From knowledge to action

If people really attach so much importance to animal welfare and have easy access to the knowledge required to ensure it, why is there still so much room for improvement when it comes to welfare among pets and hobby animals? Even if knowledge is available, there is no guarantee that it will be used. This may be due to a whole range of mechanisms, such as entrenched habits, system constraints, lack of discipline or an unwillingness to give up personal freedoms. Financial motives may also play a role. Whatever the case may be, we humans are very creative when it comes to excusing our own behaviour.

In its report entitled ‘Knowledge is not enough to ensure action’ (*Weten is nog geen doen*)²³, the Netherlands Scientific Council for Government Policy (WRR) draws attention to the importance of non-cognitive capabilities, such as setting a target, coming into action, persevering and dealing with resistance and setbacks. While the WRR report focuses on citizens’ coping skills with regard to their own quality of life, it is evident that its recommendations are also relevant for the quality of life of our beloved companions. Coping skills make requirements of citizens in terms of their mental capacity (knowledge), but also of their ‘capacity to act’: intrinsic motivation, practical opportunities and social influences or pressures are among the key factors that determine whether desired behaviour is actually shown in practice²⁴.

Welfare improvements in the equestrian sector are a case in point. Animal welfare is in the spotlight in this sector. Ever since 2007, pressures from the government and broader society have fuelled sector initiatives to improve the welfare of horses. One example is the development of the Horse and Welfare quality label. Launched as a private initiative (based on a welfare monitor underpinned by scientific evidence), this label was taken over by the Horse Sector Council in 2017. It enables businesses in the sector to stand out from their competitors on the market, provided they meet the welfare standards of the label. However, that same market decides the level of ambition and speed of the proposed improvements, so it remains crucial to monitor the progress made.

Madelief, or the activating power of a 10-year-old girl

One example of how social pressure can transform knowledge into action is the case of a 10-year-old girl called Madelief. She has effected a great change – a child’s brain, too, can have considerable activating power. When visiting a pet and garden store of the Welkoop chain, Madelief saw that the rabbits that were sold there had very little room in their cramped cages. She and her 7-year-old sister decided to write a letter to the national TV News for Children Show. One week later, the director of Welkoop announced on TV that this particular method of keeping rabbits was to be banished from all Welkoop outlets.

A large and professionally managed business like Welkoop (part of the multinational Agrifirm) can be expected to be aware of how rabbits should be kept, but did not put that knowledge into practice. Not until its practices were denounced in the media did the company transform its knowledge into action. It would have been even better if Welkoop had decided to only sell rabbits plus suitable housing and provided care instructions – to protect the animals from less professional sellers on the Internet. The commercial interests involved were probably too small to warrant such an approach. So it is clear that media attention can make a large company change its behaviour. However, private individuals and small businesses are much more diffuse, and more difficult to goad into action. The same problem is encountered in other fields, such as attempts to promote a healthy lifestyle or the energy transition. Modern communication and marketing techniques may serve as useful instruments in this regard.

The activating power of Dutch citizens has recently been mapped using a test developed by Utrecht University psychology professor Denise de Ridder. It was found that people score moderately on the test. The researchers concluded that many of us will not always be capable of transforming our good intentions into actions. So it should not come as a surprise that despite the accessibility of knowledge, there is room for improvement in certain aspects of animal welfare. To really transform knowledge into action in the interest of animal welfare, we call for a shift in policy emphasis from the natural sciences to the behavioural and communication sciences. This will make it possible to build on the scientific insights and experiences gained in efforts to encourage healthy lifestyles, in terms of alcohol use and smoking, for instance.

5.6 Conclusion

Ties between humans and companion or hobby animals are becoming ever closer. Animals – especially dogs, cats and horses – mean a great deal to humans. Owners are prepared to make substantial sacrifices, and make heavy requirements on veterinary care for their animals. Overall, this development has had a positive effect on the welfare of the animals concerned. However, we should not ignore the negative aspects. People may think they are experts while they are not, they tend to underestimate risks and do not always fully understand their animals' needs. While previously people used to rely on the knowledge and advice of institutions and experts, today they are more inclined to compile their own sets of truths, especially via the Internet. This also applies to the purchase of animals, which, on the Internet, may well escape the safeguards of effective quality control.

Today, information about animals is within easy reach, but to transform knowledge into action we need to do more than just offer facts. Wherever people organise themselves and collaborate in societies, associations or commercial contexts – irrespective of the sector concerned: companion animals, hobby animals or zoo animals (see chapter 6) – they tend to keep each other alert, correct each other and more easily distinguish between facts and fiction. These groups develop their own standards for animal welfare, and their members hold each other to account over them. To convince society that they pass the quality test, transparency is essential for these groups. These forms of professionalisation, transparency and quality improvement will benefit the animals and can make all the difference.

Actions required on behalf of companion and hobby animals

- Encourage further professionalisation, and promote and facilitate collaboration among the parties in the chain and with knowledge institutions so as to improve their understanding of the scope and nature of animal welfare issues and develop targeted measures to prevent problems;
- Continue to improve access to reliable knowledge, for example via the LICG, and, even more importantly, provide expert contributions to the debate on animal welfare on online forums, platforms and communities;
- Develop knowledge and strengthen infrastructures so as to better understand the needs and interests of companion and hobby animals and prevent confusion between animal welfare issues and human projections;
- Develop transparent codes of behaviour within animal sectors and user communities so as to safeguard animal welfare and promote compliance;
- Devise an independent test system to monitor the quality of good practice standards and guides in terms of animal-friendliness;
- Use innovative indirect forms of communication (online or otherwise) to stimulate balanced choices regarding the purchasing and care of animals among potential owners of companion and hobby animals and discourage the acquisition of over-typified animals.

Sources

1. Kantar Public, 2018. *The state of the animal in the Netherlands*. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
2. Cock Buning, T. de, Pompe, V., Hopster, H. and de Brauw, C., 2012. *Denken over dieren. Dier en ding, zegen en zorg*. Athena Institute, Vrije Universiteit Amsterdam, 68 pages.
3. Website Dibevo: <https://dibevo.nl/>. Accessed on 24 August 2019.
4. RDA, 2019. *Dierbare hulpverleners. Welzijn voor mens en dier?* RDA, The Hague, 35 pages.
5. Stichting hulphond Nederland (assistance dog foundation), 2017. *2016 Financial Statements*, 29 pages.
6. KNHS, 2016. *The Big Equestrian Sports Study 2015*. KNHS, Ermelo, 43 pages.
7. Barten, M. and de Boer, M., 2013. *Samen op weg naar professionalisering: Een onderzoek naar mogelijke interne en-/of externe samenwerkingsverbanden om het werkveld paardencoaching te professionaliseren*. Hogeschool Van Hall Larenstein, Leeuwarden.
8. Gee, N.R. and Mueller, M.K., 2019. *A Systematic Review of Research on Pet Ownership and Animal Interactions among Older Adults*. *Anthrozoös*. 32(2), 183-207.
9. Saunders, J., Parast, L., Babey, S.H. and Miles, J.V., 2017. *Exploring the differences between pet and non-pet owners: Implications for human-animal interaction research and policy*. *PLoS One*. 12(6): e0179494).<https://doi.org/10.1371/journal.pone.0179494>.
10. Kanne P. and T. Siderius, 2014. *The state of the animal in the Netherlands*. TNS-NIPO report for *Trouw* newspaper (section 2.2. TNS-NIPO polls from 2009, 2011 and 2014).
11. NU.nl, 2019. *Number of animal insurance policies up by 55%*. Press release.
12. Overgaauw, P.A.M., van Zutphen, L., Hoek, D., *et al.*, 2009. *Zoonotic parasites in fecal samples and fur from dogs and cats in The Netherlands*. *Vet Parasitol*. 163, 115-122.
13. Visser, E.K., Neijenhuis, F., de Graaf-Roelfsema, E., *et al.*, 2014. *Risk factors associated with health disorders in sport and leisure horses in the Netherlands*. *J Anim Sci*. 92, 844-855.
14. Pompe, V.M.M., Hopster, H. and van Dieren, M., 2013. *Liefde maakt blind? Onderzoek naar waardenoriëntaties en waardenafwegingen van kopers/houders van 'risicovolle' dieren*. Hogeschool Van Hall Larenstein, Leeuwarden, 82 pages.
15. Website Companion Animal Responsible Ownership: <https://www.carodog.eu/animal-health-law-a-power-tool-against-illegal-puppy-trade/>. Accessed on 17 July 2019.
16. Sommer, R., Brannen, P., Girling, J., *et al.*, 2016. *Joint motion for a resolution on the introduction of compatible systems for the registration of pet animals across Member States*. European Parliament, RC\1087285EN.doc, 6 pages.
17. Rambam episode on exotic animals. KNMI, 7 February 2019.

18. RDA, 2017. *Horse Markets in the Netherlands. From the horse's Mouth*. RDA, The Hague, 74 pages.
19. Aleven, I.M., 1970. *Schildpadden in het terrarium*. LJ Veen's publishers, Amsterdam, ISBN 9020412760, p. 106.
20. Van Wijk, E.E.C., Visser, E.K., Verstegen, J.A.A.M. and Kortstee, H.J.M., 2009. *Passie voor paarden. Een onderzoek naar de belevingswereld en het informatiezoekgedrag van paardenliefhebbers in Nederland*. LEI Wageningen UR, The Hague, Report 2009024, 164 pages.
21. HAS University of Applied Sciences, 2018. *Hippische Monitor 2018. Van traditie naar transitie. Has kennistransfer en opleidingen*, 20 pages.
22. Kok, N., 2017. *Inventarisatie kennislandschap inzake het op welzijnsverantwoorde wijze houden van gezelschapsdieren*. Internship report, Utrecht University, 27 pages.
23. Boot, A.W.A., Bovens, M.A.P., Engbersen, G.B.M., *et al.*, 2017. *Weten is nog geen doen. Een realistisch perspectief op redzaamheid*. Scientific Council for Government Policy (WRR), The Hague, 186 pages.
24. Visser, E.K. and van Wijk-Jansen, E.E.C., 2012. *Diversity in horse enthusiasts with respect to horse welfare: an explorative study*. *J Vet Behav Clin Appl Res.* 7, 295-304.



6. Funny old birds, for education and enjoyment

REFLECTION ON ZOO ANIMALS

A great deal has changed since the first zoo in the Netherlands opened, in 1838. But don't zoos belong to the past? Is it ethical to feed a redundant giraffe to the lions? Why has ARTIS zoo stopped giving names to its animals? How are zoos trying to improve the welfare of their animals? And how do hobbyists contribute to the preservation of endangered species? In this chapter we will briefly examine a number of issues surrounding the welfare of zoo animals.

6.1 Support among the public

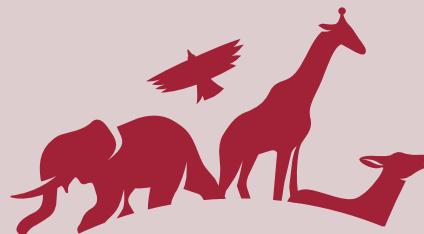
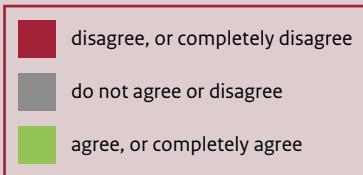
The Zoölogisch Genootschap Natura Artis Magistra (ARTIS) opened the first zoo in the Netherlands in 1838. Since then, the number of licensed zoos has risen to 66¹. These include zoos in the classical sense, as well as butterfly gardens, shelters, educational institutions and nature information centres. Most zoo animals are to be found in one of the 13 large zoos united in the Dutch Zoo Federation (NVD). However, the various aquariums and butterfly gardens also have relatively large numbers of animals.

Pursuant to the Animal Keepers Decree, licensed zoos promote the preservation of animal species by conducting research and breeding programmes and/or by providing housing for animals received from shelters or following confiscation. So many zoos contribute to the preservation and reintroduction of wild animals (for example, see the griffon vulture project of ARTIS²). In addition, zoos have a mandate to inform and educate the general public about the species exhibited and their natural habitats. According to European legislation³, zoo animals of wild species must be exhibited to the public for seven or more days a year. According to a conservative estimate, over ten million people visit a zoo every year, and this number is stable⁴. This is consistent with the data from the respondents in our public survey⁵, of whom two thirds visit a zoo or animal park at least twice a year.

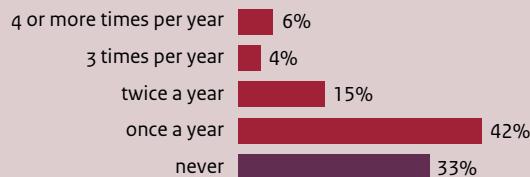
SURVEY RESULTS
What are the views of the Dutch public on the state of zoo animals?



Please consider the statements below, and indicate the extent to which you agree or disagree with them. Base: half of all respondents (n≈1,000)



Two thirds of Dutch citizens say they occasionally visit a zoo or animal park. In most cases (42%) they do so once a year.



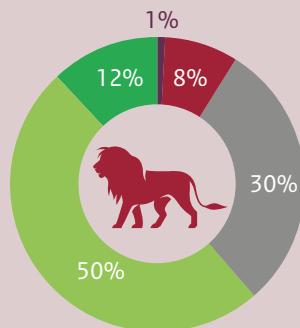
How often (estimate) do you visit a zoo or animal park? This could be a large zoo (such as ARTIS) or a smaller animal park (such as Aquazoo Leerdam). And it could be a zoo with many different kinds of animals (Burgers' Zoo) or a park that specialises in specific types of animals (dolphinarium, Avifauna, butterfly garden). Base: all respondents (n=2,010)

People support zoos as long as the animals can express their natural behaviour

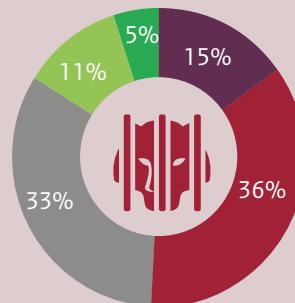
According to six in every ten respondents (62%), if we are unable to allow zoo animals to express natural behaviour, the species concerned is not suitable to be kept in zoos.

That does not mean they believe zoos are a thing of the past. Half of all respondents (51%) disagreed that ‘Zoos should be banned in the Netherlands; wild animals should not be kept behind bars’. Sixteen percent agreed with this statement, and 33% neither agreed nor disagreed.

If we are unable to allow zoo animals to express natural behaviour, the species concerned is not suitable to be kept in zoos.



Zoos should be banned in the Netherlands; wild animals should not be kept behind bars.



Please consider the statements below, and indicate the extent to which you agree or disagree with them.
Base: half of all respondents (n=1,000)

When the use of wild mammals in circuses and shows was banned in 2015⁶, some people also began to wonder whether it still makes sense to keep animals in zoos. Further fuel for the debate was provided by hidden camera images made at the dolphinarium in Harderwijk shown in a television show (Rambam⁷) in 2016, ultimately resulting in questions in parliament. There is only limited support, however, for a ban on zoos. In our public survey, a mere 16% agreed or completely agreed that ‘Zoos should be banned in the Netherlands; wild animals should not be kept behind bars’. However, respondents do feel it is important for zoo animals to be able to express natural behaviour. Nearly two thirds (62%) saw this as a condition for permission to keep zoo animals in the first place, even if it meant that certain species would be invisible to the public (64%).

6.2 Fierce and emotional debate

In 2014, a giraffe called Marius in a zoo in Copenhagen became the subject of a fierce and emotional debate. Two years old and in perfect health, Marius was put down humanely by a vet, dissected in front of the public and fed to the lions. Marius’ death was discussed in practically every talk show in the media and he has even become the subject of a Wikipedia page. How different is the fate of the countless nameless animals that die in stable fires, and of all the other anonymous animals that we kill for food. It appears that just like cats, dogs or horses, a zoo animal needs to be given a name in order to be regarded as an individual and sentient being, and to be treated with compassion and respect.

During the period of the Marius dilemma, ARTIS decided to stop giving its animals names. Since then, news sites can be seen to report on ‘Gorilla born in ARTIS’ - without naming the father, the mother or indeed the baby. It is inevitable for zoos to be saddled with surplus animals that will have to be ‘removed from the collection’ sooner or later. It happens in Copenhagen and everywhere else. All the same, it is unlikely for a nameless Amsterdam giraffe to be dissected in public and fed to the lions. This is because in our safe, engineered society we humans are increasingly uncomfortable with death – including the death of animals (also see chapter 9). This can also be seen in our attitude towards meat consumption: ‘we want to eat but we don’t want to know’. In a talk show on Dutch TV⁸, ethologist Jan van Hooff put it as follows: ‘You wouldn’t even think of slaughtering your own dog and eat it.

If we want to use an animal we need to push it away from us, keep it at a distance. In fact this probably provided evolutionary benefits to us.' Since we are unable to face the suffering we inflict on animals, we need to create distance and look the other way out of self-protection.

In our public survey, 51% of respondents disagreed or completely disagreed that it is acceptable to kill an animal if there is no more place for it in a zoo or shelter and it proves impossible to find a suitable home for it within six months. Even so, zoos will inevitably have to kill a surplus animal now and then if no place can be found for it elsewhere. Half of all newborns will be males, of which only a few will ultimately be needed. Zoos make no secret of that. For example, on its website the Rotterdam Blijdorp zoo informs the public that surplus animals that are killed are sometimes fed to predators: 'which is a real feast for our lions and tigers. This way, animals that are killed can still be put to good use.' As long as an animal has no identity of its own and the zoo does not turn the event into a media show, the public seems to accept this. After all, most of them also eat nameless meat themselves.

6.3 Developments in the world of zoos

In larger, professionalised zoos there is a clear trend towards fewer species, more suitable species, fewer large animals, more spacious enclosures, more natural social environments (mixed species) and more natural physical environments (eco-displays). We anticipate that in future zoos will increasingly remove species from their collections that cannot be kept without considerable animal welfare issues. Wolves and polar bears, for example, might well be among the first to go.

Countless study groups have been set up to develop and exchange know-how. Zoos are making consistent efforts to professionalise for the benefit of their public functions and the welfare of their animals. A quick scan of the 43 submissions to the 10th European Zoo Nutrition Conference shows that further improvements can still be made – in nutrition, for example, and the role of food in enabling animals to display natural behaviours. One challenge is to translate new insights into practical applications. After all, a zoo is – also – a commercial enterprise where dreams may be at odds with practical realities, just as in any other setting where animals are kept for business purposes. Indeed, this constant tension between costs (the

animals) and benefits (the visitors) raises the question of how much space there is for zoos on the Dutch market, assuming that the welfare of animals will benefit if the zoo is run as a profitable business with sufficient means for capital investments.

It is this very profit principle that has encouraged some zoos to offer little more than ecological backdrop for a family outing – including rides, live shows with animals and catering facilities to complete the package. Weighing the costs against the benefits, commercial zoos might be inclined not to participate in breeding projects for highly endangered species with little public appeal. The same cost-savings approach could also result in the number of individuals of specific species falling below the critical level required to maintain a genetically healthy population. It is important, therefore, to continue critically monitoring the balance between the three main objectives of any zoo: preserving animal species, educating the general public and facilitating scientific research.

NVD zoos collaborate with non-affiliated zoos only to a limited extent. To be admitted to the NVD, zoos must first become a member of the European Association of Zoos and Aquaria (EAZA) and satisfy that organisation's requirements. This may mean many zoos from joining, for instance because they would have to comply with regional collection programmes. Most zoos want to decide for themselves what species are interesting for them. So the divide is maintained, while the animals themselves would probably benefit from collaboration among zoos. Incidentally, in 2017 the Dutch government appeared to confirm this divide by deciding that the vaccine against cow pox could only be administered to elephants, rhinos and tapirs registered in accordance with Section 4.9 of the Animal Keepers Decision and kept at NVD-affiliated zoos.¹⁰

6.4 Developments outside zoos

There are also private citizens and traders who keep exotic species. To a certain extent, there are links between the world of these hobbyists and that of the zoo sector; they exchange knowledge, and animals too sometimes. Take the European Studbook Foundation¹¹. Within this organisation, expert hobbyists organise themselves and, in a professional context, keep species in numbers sufficient to keep the populations genetically healthy and prevent them from going extinct¹². Several

species of turtles and tortoises, for example, have been saved from extinction thanks exclusively to the efforts of specialised hobbyists and small zoos.

The Dutch national government has for several years been compiling a list of mammal species that everybody is permitted to keep without a permit: the ‘positive list’. Once that list is available, the idea is that similar lists should be compiled for birds, reptiles and amphibians. This has to do with the fact that the Dutch Animals Act (*Wet dieren*)¹³, just like its predecessor from 1992, is based on the ‘no, unless’ principle. In other words, animals cannot be kept in the Netherlands unless the responsible minister has designated the species as suitable and placed it on the positive list. Generally speaking, the species on that list will be those that do not require any specialist knowledge or care and do not pose a hazard for humans or other animals. It is forbidden to keep species not included in the positive list. In this way the government aims to protect animal welfare in advance and prevent risks for humans and animals as much as possible.

Following earlier attempts, the government resumed its effort to compile a positive list for mammals in 2009. This has proved a slow and laborious process¹⁴. One of the challenges is that such a list is required to meet European legislation, which, as far as trade within the EU is concerned, is based on the opposite principle: ‘yes, provided that’. The Belgian authorities, too, drafted a positive list, which they submitted for assessment to the European Court of Justice in Case *Andibel* (C-219/07, dated 18 June 2008). In response, the Court formulated requirements regarding the substantiation of a prohibition on the keeping of – and thus, on the trade in – animal species. However, a test, by the Dutch Trade and Industry Appeals Board, of the first version of an assessment system developed in the Netherlands made it clear that the government will have to provide thorough, independent scientific substantiation for each and every animal species not included in the positive list. This made it necessary to opt for a different assessment system. As a result, it is not clear at present whether private owners of special animal species will be allowed to keep their animals in the future. More clarity on this issue is expected in the second half of 2019.

6.5 Summary

While there is ample support in the Netherlands for zoos, citizens do feel that the animals should be able to express natural behaviour. The zoos themselves reflect our ambivalence as regards the killing of animals, as exemplified by the case of Marius the giraffe. In chapter 9 we will take a more detailed look at the moral frictions involved in the killing of animals. The large zoos in the Netherlands have joined forces in an association to raise level of professionalism in support of their public functions and animal welfare. Collaboration offers several advantages, such as the ability to facilitate, and share the costs of, information exchange. The higher level of professionalism and the increased knowledge about keeping and breeding animals have clearly improved animal welfare and health. However, given that zoos are – also – commercial enterprises that need to minimise costs, safeguarding animal welfare is part of a precarious balance that needs to be constantly monitored.

Actions required on behalf of zoo animals

- Prevent animals from being kept by parties that do not have the required knowledge, motivation and means;
- Evaluate the conditions governing zoo permits to the extent they relate to animal welfare and contribution to the protection of wildlife, preservation of biodiversity and access for the general public;
- Encourage zoos to develop welfare standards as part of their quality care systems;
- Reduce the division between NVD zoos and non-NDV zoos so as to facilitate the exchange of knowledge and experience for the benefit of animal welfare;
- Make balanced choices regarding the collection, as appropriate in light of the opportunities available to the zoo in its given situation.

Sources

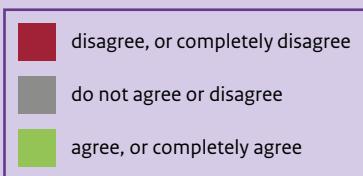
1. Website of Netherlands Enterprise Agency featuring an overview of licensed zoos: <https://www.rvo.nl/onderwerpen/agrarisch-ondernemen/dieren/dierenwelzijn/dierentuin>. Accessed on 5 July 2019.
2. ARTIS, 2019. Griffon vultures from ARTIS to be free birds once more. Press release published on 16 April 2018. Accessed on 17 July 2019.
3. Council Directive 1999/22/EC of 29 March 1999 relating to the keeping of wild animals in zoos. Website accessed on 17 July 2019.
4. Peters, M. and Oudejans, R., 2018. Trendonderzoek Dierentuinen. Onderzoek naar de huidige stand van zaken en ontwikkelingen van het bedrijfstype 'dierentuin'. Van Hall Larenstein University of Applied Sciences, Leeuwarden, 50 pages.
5. Kantar Public, 2018. *The state of the animal in the Netherlands*. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
6. National government, 2015. *Animal welfare in circuses*. Website accessed on 17 July 2019.
7. Rambam episode, *Dolphinarium*. BNNVARA, 2 March 2016.
8. *Pauw* talk show, BNNVARA, 23 May 2019.
9. EAZA Nutrition Group, 2019. *Abstract book 10th European Zoo Nutrition Conference*. Marwell Wildlife, United Kingdom, 18-20 January 2019.
10. Regulation *WJZ/17148000*. Website accessed on 17 July 2019.
11. Website of the European Studbook Foundation: <https://studbooks.eu/>. Accessed on 17 July 2019.
12. Browne, R.K., Janzen, P., Bagaturov, M.F. and van Houte, D.K., 2018. Amphibian Keeper Conservation Breeding Programs. *J Zool Res.* 2(1), 29-46.
13. *Animals Act (Wet dieren)* <https://wetten.overheid.nl/BWBR0030250/2019-01-01>. Website accessed on 17 July 2019.
14. *Parliamentary Paper 31389*, No. 153. Website accessed on 17 July 2019.



7. Best regulated of all?

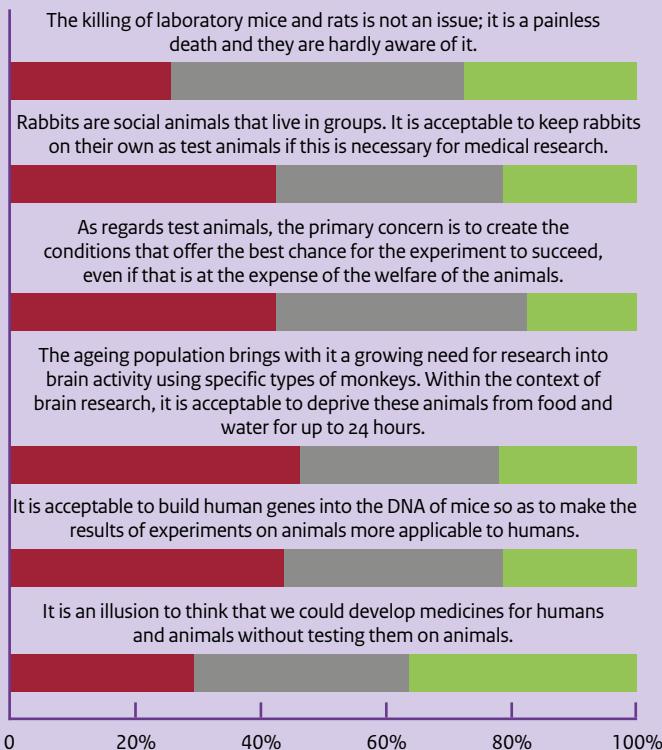
REFLECTION ON TEST ANIMALS

For no animal group is there a more meticulous list of what is and is not permitted than for test animals. Since it was made a legal requirement to promote working practices based on the three Rs (replacement, refinement and reduction), the number of test animals used has been falling over the past decades. Nevertheless, animal testing remains a highly sensitive issue in society, and opinions are strongly divided. Why is that? And are citizens actually aware of the reasons for conducting experiments on animals, and of the many efforts that the government, test animal carers and researchers undertake to minimise impairment of test animal welfare? This chapter discusses all these and other aspects of the welfare of test animals in the Netherlands.



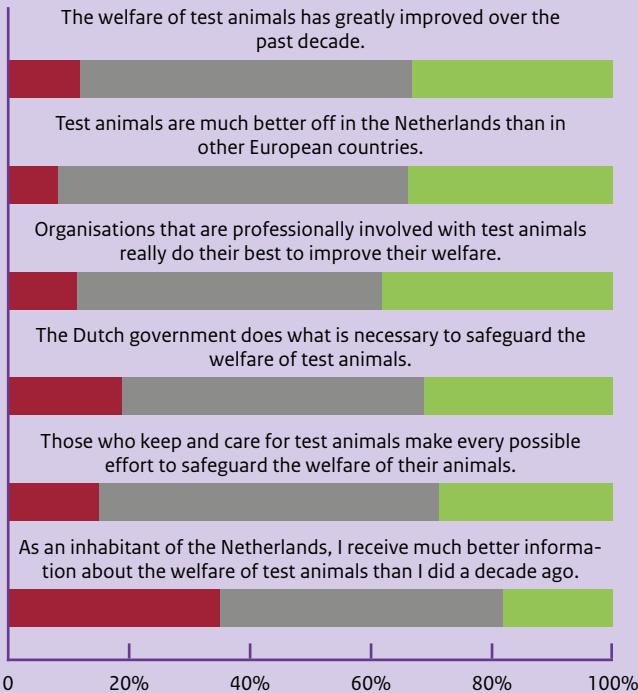
Test animals: animals that are mainly kept for scientific research and for statutory safety testing of consumer products.

Photograph: iStock

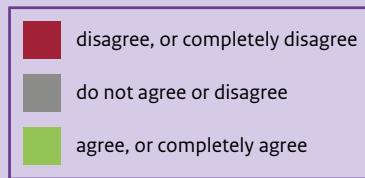


SURVEY RESULTS
What are the views of the Dutch public
on the state of test animals?

What are the views of the Dutch public on the state of test animals?

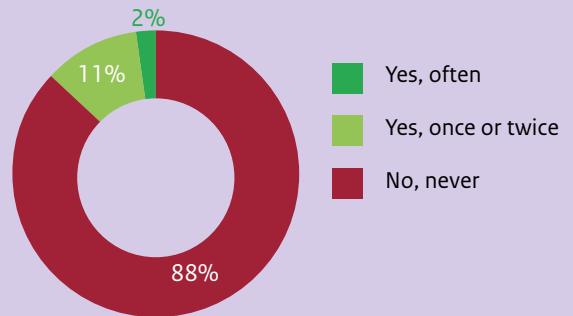


Please consider the statements below, and indicate the extent to which you agree or disagree with them. Base: half of all respondents (n≈1,000)

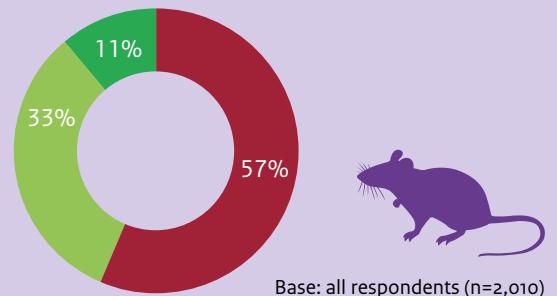


Approximately one tenth (13%) of Dutch residents have protested / expressed their displeasure online regarding the use of test animals.

Have you ever protested against the use of test animals?



When buying products, do you check to make sure they were not tested on animals?



7.1 Definitions and figures

Test animals are protected in the Netherlands pursuant to the Experiments on Animals Act (*Wet op de dierproeven (Wod)*)¹. Whether a test qualifies as an experiment on animals under the Wod, meaning that all the associated obligations must be satisfied, depends on factors such as the species of animal concerned and the degree of discomfort caused by the test – also referred to as ‘impairment of welfare’. According to the Wod, vertebrates and invertebrate cephalopods such as octopuses qualify as test animals if they are used for scientific or educational purposes. A test qualifies as an experiment on animals under the Wod if the animal experiences at least as much pain, suffering, distress or lasting harm as that caused by the introduction of a needle according to good veterinary practice. We will return to this later.

By the end of 2017, eighty institutions in the Netherlands held a permit for conducting animal tests. These included universities, university medical centres, research institutions and pharmaceutical companies. Over half of these permit holders were also licensed to breed or supply animals for animal testing purposes². Collectively they registered 530,487 experiments on animals in 2017 (Figure 1). The most common animal species used for testing are mice, rats, chickens, fish and ‘other birds’ (Figure 2). There is a trend towards using individual test animals for

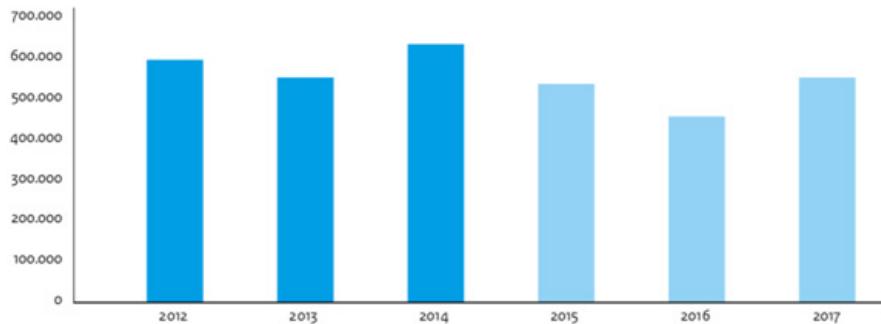


Figure 7.1: The total number of experiments on animals in the Netherlands in 2012-2017². Since the implementation of European legislation in 2014, other definitions and measurement methods have been introduced. The increase in the number of experiments on animals in 2014 can be attributed directly to the new registration method applied.

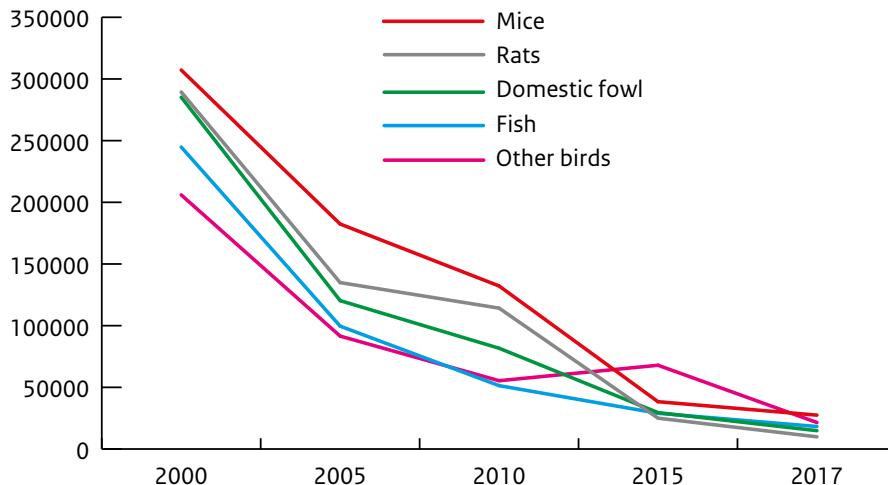


Figure 7.2: The number of test animals for each of the five most common species used for experiments in the Netherlands in 2000, 2005, 2010, 2015 and 2017. Domestic fowl are mainly chickens. Source: NVWA².

multiple experiments, where possible. This is why the number of test animals used is lower than the number of experiments conducted. In 2017, 11,138 experiments on animals were registered that involved re-use of test animals, mostly in experiments for educational purposes².

The principal purposes of experiments on animals are basic scientific research (42%), applied and translational research (27%) and statutory toxicological tests and safety tests (26% of all experiments) (Figure 3). In 2017, approximately 65% of all experiments came in the category 'slight discomfort'. In the other experiments, the discomfort ranged from moderate to serious to terminal (Figure 4). The discomfort induced by experiments (= impairment of welfare) has not demonstrably decreased or increased in recent years.

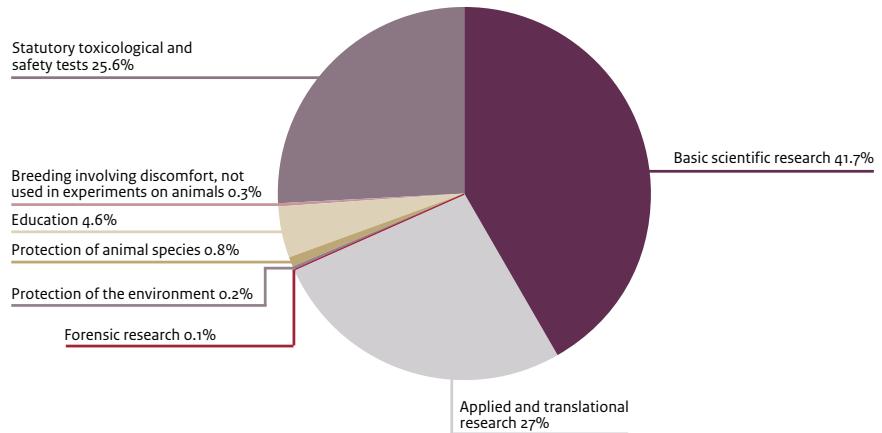


Figure 7.3: Purposes of experiments on animals registered in 2017³.

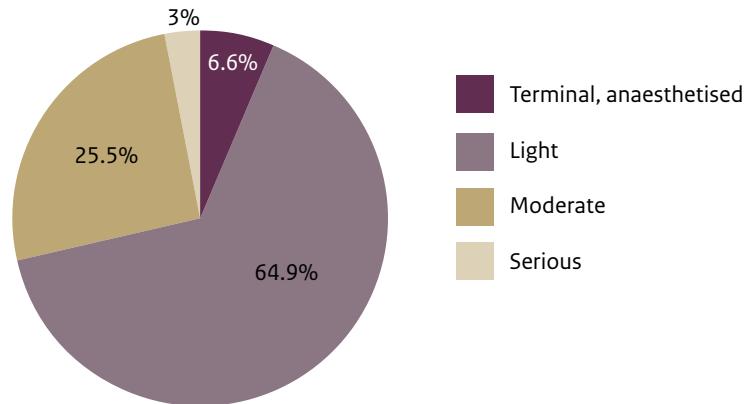


Figure 7.4: Classification of discomfort in experiments on animals in 2017³.

7.2 Socially sensitive

Animal testing is a socially sensitive issue that provokes a great deal of debate and resistance. When asked: ‘What mark between 1 and 10 would you give for the way animals in this group are generally treated in the Netherlands?’, respondents in the public survey⁴ awarded a score of 5.7. This is lower than the scores for all the other animal groups (see chapter 2). The survey also revealed that opinions on animal

testing are strongly divided. For example, 37% of respondents agreed or completely agreed that ‘It is an illusion to think that we could develop medicines for humans and animals without testing them on animals’, while 29% disagreed or completely disagreed. And 19% of respondents agreed or completely agreed that ‘As regards test animals, the primary concern is to create the conditions that offer the best chance for the experiment to succeed, even if that is at the expense of the welfare of the animals’, while 43% disagreed or completely disagreed.

One notable finding in the survey results regarding test animals is that a relatively large proportion of respondents were not outspoken on the issue. About half selected ‘do not agree or disagree’ for the following statements:

- The welfare of test animals has greatly improved over the past decade;
- Test animals are much better off in the Netherlands than in other European countries;
- Organisations that are professionally involved with test animals really do their best to improve their welfare;
- The Dutch government does what is necessary to safeguard the welfare of test animals;
- Those who keep and care for test animals make every possible effort to safeguard the welfare of their animals;
- As an inhabitant of the Netherlands, I receive much better information about the welfare of test animals than I did a decade ago.

Apparently, this is relatively unfamiliar territory for the average Dutch citizen. Another notable finding was that people who have frequent contact with animals in a professional capacity are more positive about the improvement of test animal welfare over the past decade and about the government’s efforts to safeguard it.

There are several reasons why experiments on animals are such a sensitive issue. First of all, using animals for experiments is an instrumental approach to animals that automatically entails welfare impairment. The use of animals for this purpose raises questions once we acknowledge that animals have an intrinsic value and can experience discomfort. The Dutch legislator decided to adopt a ‘no, unless’ approach for good reason. It means that experiments on animals are not permitted unless a number of substantive and procedural conditions are met (see section 7.3). Each

and every experiment must be preceded by a scientific and ethical consideration of whether this use of animals is justifiable. It is not easy to balance the pros and cons, and the resulting tension is reflected in society.

The difficulty is not only caused by the differences between the various interests and moral approaches involved, but also stems from the diversity in the types of experiments performed. And that is a second reason for a public debate. Experiments on animals are very diverse, in terms of research purpose, the degree of discomfort and the numbers and species used. This calls for a fact-based debate in which all aspects are taken into account. In many cases the public domain does not offer enough space for such subtleties, which is why strong emotions and unfounded arguments tend to play a prominent part in the debate.

In addition, some factors in the public debate hardly play any role at all in legislation or science regarding test animals. For example, under the Wod all test animals are equal, but society and studies do distinguish between, say, a fish and a dog. The animal's appeal to humans, our relationship with the animal and the extent to which we can identify with it all play a role in our assessment of animal experiments.

Views on the importance of different types of experiments are divergent and subject to change. As regards the purpose of animal experiments, there is consensus in society that experiments for the purpose of cosmetics are not acceptable. This is why not long ago the EU imposed a ban on experiments on animals for the cosmetics industry. In other cases, such as experiments in connection with livestock farming or smoking and alcohol-related conditions, no such social consensus has yet been achieved. For a balanced public debate it is essential that the participants are sufficiently informed about the methods and reasons for animal experiments, and that broader themes are also involved. These include the relevance of study purposes and the relationship between humans and the animals concerned. We will discuss several important aspects in the following sections.

7.3 Changes in legislation and policy

An experiment on animals is an instrument and a last-resort means of finding an answer to a scientific question. This is why the EU has adopted a ‘no, unless’ policy, meaning that an experiment on animals is not permitted unless the research question is shown to be important and cannot be answered in any other way. Once a permit has been issued for an experiment on animals, every effort must be made to achieve a relevant result using as few animals as possible. The importance of the experiment must outweigh the impairment of the animal’s welfare, which should be kept to a minimum. In other words, the three Rs principle – replacement, reduction and refinement (also referred to as ‘alternatives to experiments on animals’ – must be applied at all times. This should be safeguarded on the basis of statutory procedures and compliance checks by the government. One important decision from the recent past is the EU’s ban on animal experiments for the cosmetics industry. While that decision had no major effect on the numbers of experiments, it did significantly influence views on the importance of such experiments. Interestingly, more and more countries outside Europe are also adopting this ban.

New EU regulations on animal testing came into force in 2010, and were implemented in the Netherlands in 2014. This resulted in further amendments to Dutch legislation on animal testing, which was already among the most stringent in Europe. Notable features are the compulsory species-specific training courses, the obligation to demonstrate one’s competence before working with test animals independently, the adjustment of discomfort scores, authorisation of experiments on animals performed by the government, the phasing out of animal testing experts and the establishment of bodies for animal welfare within institutions with animal testing authorisation.

Animal test authorisation by a single government body (CCD) has resulted in a more consistent assessment of projects. Also note that protocols are now scrutinised by even more people than in the past. The researcher is required to properly substantiate the choice for the animal testing model (animal species and techniques used). In addition, there is strict supervision to ensure that the experiments involve the lowest possible number of animals for a meaningful result, and that efforts are made to minimise welfare impairment through pain control, anaesthesia or euthanasia. It

is too early to determine whether the amended legislation has brought real benefits for the animals concerned, as many procedures are still in the implementation phase.

Other examples of changes following implementation of the European rules:

- Cephalopods (such as octopuses) appear to be less resistant to welfare impairment than previously assumed. Tests on octopuses now also legally qualify as experiments on animals, therefore, and the associated obligations apply. Other invertebrates may follow, including crustaceans;
- The traditional six categories of discomfort have been reduced to four – mild, moderate, serious and terminal. As a consequence, when in doubt researchers and assessors sometimes appear to select a lower category for the level of discomfort involved in a procedure. As a result, that procedure may be admitted more easily than it was in the past. However, this assumption will need to be further investigated;
- Previously, a young animal only qualified as a test animal once it could feed independently. Mammals now already qualify as test animals when they reach the last (= third) stage of their embryonic development. This means that mammals are protected at an earlier stage than other animals subject to the Wod;
- Previously the chance of potential discomfort determined whether a test qualified as an experiment on animals; today, the 'introduction of a needle' applies as an arbitrary measure of discomfort. This has provoked considerable debate, due to the limited comparability of the various procedures involving test animals. Nor has the type of needle been specified, or where exactly it would be introduced;
- Heavier demands have been placed on housing, especially as regards enrichment;
- Another aspect of importance to test animals is the possibility under the Wod to adopt a former test animal – a practice also referred to as 'relocation' – so that the animal will not have to be killed. A number of requirements must be met however. Experience has shown that relocation is a feasible option in particular for larger, cuddly animals. Dogs, cats, pigs, birds and, occasionally, rats or mice can be relocated to households, care farms or children's farms. Most monkeys are relocated to the shelters of Stichting AAP.

While several changes in animal experiment practices are driven by regulatory requirements, many other changes did *not* come about as a result of government influence. In the Netherlands, welcome initiatives are being launched that promote

a bottom-up implementation of laws and regulations and may ultimately result in better living conditions for test animals. One example is the ‘Animal Welfare Authority Platform’, in which all Dutch animal welfare authorities collaborate.

The ‘Transition Programme for Innovation without the Use of Animals’ was recently launched, coordinated by the Ministry of Agriculture, Nature and Food Quality. The programme was drawn up in response to a recommendation⁶ presented by the ‘National Committee for the protection of animals used for scientific purposes’ to the then State Secretary for Economic Affairs, Martijn van Dam. So-called innovation networks are being set up to gather the right experts to help find innovative answers, without the use of animals, to issues for which animal experiments have so far seemed to be the most obvious approach. The Netherlands aspires to become a worldwide leader in innovation without the use of animals by 2025.

7.4 Other aspects and developments

Attention for animal welfare

In parallel to the public debate, a change in attitude has emerged among researchers. They show signs of growing affinity with animals and increasing awareness of working with living, sentient beings. Fostering this change in attitude is a crucial component in many animal testing science courses. The current courses, which are compulsory for people who are about to work with test animals, provide a substantive basis for that attitude. People with a compassionate attitude with regard to test animals are likely to add to this knowledge where and when that is necessary. In addition, mandatory further and refresher training courses have been launched so that people maintain and expand their knowledge.

Generally speaking, attention for the welfare of test animals in the broadest sense is growing. Pain control, anaesthesia and euthanasia are mandatory where possible. Humane endpoints – circumstances in which the impairment of the animal’s welfare must be deemed unacceptable – are being set to determine when the animal needs to be removed from the experiment and killed, if necessary, to prevent further suffering. The improvement of methods to control pain, administer anaesthetics or perform euthanasia is an ongoing concern and often involves the latest insights from veterinary research.

Test animals can obviously experience stress when subjected to certain procedures, such as drawing blood (monkeys, dogs) or weighing (pigs). To reduce or prevent such stress, sometimes it is possible to make animals participate voluntarily by training them with rewards. One clear example is the manual handling of mice. Instead of picking up a mouse by hand, the animal can be trained to enter a small tube. This has been shown to make the experiment much less stressful for them. If the tube is placed in the animal's cage, it also serves as an enrichment feature.

Ability to translate to human environment

In most cases, test animals serve as a model for humans. It is essential, therefore, that the findings regarding the issue in question can be translated to the human environment. This translational phase has attracted more attention in recent years. In the pre-authorisation phase, too, there is a focus on whether the test animal model has been convincingly substantiated. Many experiments on animals failed to produce any direct health benefits for humans, but there are examples of experiments that did produce such benefits⁷.

Logically, veterinary research offers the highest translational potential. Particularly in the final phase of a study, the test animals used are of the same species as the animals for which the new therapy is being developed. However, there is also biological research that directly benefits the animal species that is the focus of the study. Think of research into animal behaviour, for instance. This includes the practice of fitting birds with transmitters to study their migration behaviour. When experiments on animals are performed for purposes in human medicine, the results are often disappointing. Approximately nine out of every ten medicinal products that seemed promising in animal experiments, fail in clinical studies on humans due to safety issues or lack of efficacy⁸. The big question that scientists are grappling with, therefore, is how we can more reliably test the safety and efficacy of a new medicine before testing it in humans.

In vitro systems (cell and tissue culture techniques) and other methods that do not involve the use of animals are only part of the solution. Although we can learn a lot at the level of individual organs, in most cases we still need animal experiments to study interactions between the components of a complete living organism. As a result, the last stage of a great many studies still involves verification in a test

animal. In other words, the current tendency is towards conducting experiments in vitro where possible – e.g. pre-screening of potential medicines – and then verifying the results in animal models and, ultimately, human subjects.

New techniques

In addition to providing alternatives to animal testing, technological progress has given us techniques to enhance the predictive value of test animals for humans. A recent example is CRISPR-Cas – a new gene editing technique that allows scientist to cut and paste DNA in an extremely targeted manner (also see chapter 12). As a result, far fewer animals are needed to mutate a specific gene compared with older genetic modification techniques. One of the things that gene editing enables scientists to do is study the function of specific genes. Transgenesis techniques also allow scientists to introduce human genes in an animal. In some cases, this makes it possible to develop disease models with better predictive value for humans.

On the downside, however, the discovery of CRISPR-Cas has stimulated additional research based on animal experiments, and genetic modification does compromise the intrinsic value of the animal. In our public survey, 22% of respondents agreed that it is acceptable to build human genes into the DNA of mice so as to make the results of experiments on animals more applicable to humans. Twice as many respondents (44%) felt this was not acceptable, or completely unacceptable. Of all respondents, 6% agreed or completely agreed that it should be permitted to modify an animal's DNA to make the animal fit people's wishes, while 75% disagreed or completely disagreed. Apparently, people in the Netherlands find it more acceptable to genetically modify test animals than animals in general.

Technological progress also drives the development of new measurement techniques. Several techniques and tools make it possible to determine physiological values using non-invasive methods, and to chart additional behavioural parameters. Examples include remote sensing, telemetrics, infrared cameras, pressure plates and sensors. Some of these techniques have already been integrated into housing systems, so that the animals no longer need to be handled manually. Some also provide a non-invasive method for obtaining more data from a single animal, which helps to reduce the number of test animals needed. It remains important to ensure, however, that these techniques do not result in a materially greater welfare

impairment of the animal concerned compared with conventional measurement methods. For example, as these research methods make it possible to obtain more data from a single animal, scientists might be tempted to continue testing the animal longer than is desirable.

Ethical considerations

There are many ways in which an experiment on animals can be structured and implemented. This raises questions on scientific aspects – e.g. study structure and statistics – and on aspects in the domains of ethics, animal behaviour and emotion. What, for example, would be more desirable: using 14 dogs or 4,000 zebra fish for an experiment? Dogs and zebra fish are covered by the same legislation and legal protection. Yet in practice they are not treated as equals; also in society at large, an experiment on dogs evokes a different response than an experiment on fish.

This is not just a matter of inconsistency or random preference. Over the past few decades, research has improved our insight into the extent to which, and how, animals can experience discomfort. This has resulted in some species being excluded as potential test animals – e.g. apes – and other species being included. It remains difficult however to establish exactly how our knowledge about animals is to be translated into the choices made between specific animal species. While it may be clear that the cognitive capabilities of apes have a lot in common with ours, pigs are also quite clever but they are not excluded as test animals. It is almost impossible to draw an objective line between the two categories. In many cases other arguments play an important role, such as the reproductive speed, life span and relationship with humans, as well as financial considerations. There is one rule however that applies to all animal species: death as an unanticipated endpoint is not acceptable. A great deal of attention, therefore, is devoted to humane endpoints.

This involves advance agreements to prevent the animal dying in the course of the experiment after unnecessary suffering. Clearly this is a demonstrable improvement for the animal concerned.

Thanks to knowledge of and insight into animal behaviour, the animals' housing is now geared more effectively to their specific preferences. The trend is to keep social animals together and to separate individuals for as short a while as possible – if

required for the experiment – or at least allow them to maintain visual or olfactory contact with the others. While this trend has not yet fully developed, the existing knowledge enables us to make further steps.

7.5 Summary

Legal protection

For no animal category is there a more meticulous list of what is and is not permitted than for test animals. There are several authorities which verify that the use of animals in an experiment is justified by the envisaged purpose and that there are really no alternatives. For a number of animal categories, specific housing and care requirements have been formulated. There is a legal requirement to promote the adoption of working practices based on the three Rs: replacement, refinement and reduction; this has caused the number of test animals to decrease over the past few decades.

Care for health and welfare

Generally speaking, there are extensive facilities to look after the health of test animals; especially during the experiment, but also before and after it. That does not mean, however, that the health and welfare of test animals are necessarily guaranteed. After all, test animals will experience a certain degree of welfare impairment as a consequence of the experiment. When it comes to housing and care, a test animal depends on the efforts of carers and researchers. There are some positive trends in housing for test animals, with increased attention for space, opportunities for social interaction and prevention of boredom.

Raising awareness and assuming responsibility

Attention within the research community for improving the welfare of test animals is growing. Even so, for scientists a publication in a peer reviewed journal remains an important measure of their performance. Due to persistent conservative attitudes regarding test animals in the scientific community, publication in such journals may be hindered if the study did not involve the use of animals or if the animals used were kept in an enriched environment.

Knowledge

The test animal sector is a professional sector which centres around gathering and developing knowledge. There is a great deal of knowledge about the species used in animal experiments. Before starting the experiment, it is important to ensure that the test animal is healthy. There is also a growing body of knowledge about the impact of improved animal welfare on the experiment. A sick or stressed test animal will not provide a good model. It is intrinsic to the nature of research based on animal experiments that the needs of the animals are subordinate to the purpose of the experiment. Yet there are many possibilities to improve the test animal's welfare in terms of housing, care and handling. Not all of those improvements cost money and much of the knowledge concerned is available. To ensure effective implementation of new knowledge in this field as it develops, continuous further training for the people who work with test animals is essential. At present these improvements require additional financial investments, and they still affect the publication potential of test results.

7.6 Conclusion

Generally speaking, the welfare of test animals shows an upward trend. This is because the number of test animals used is falling and more animal species now come within the scope of test animal legislation; cephalopods for instance. At the same time however, other animal species – such as crabs, lobsters, insects and other invertebrates – do not enjoy this type of legal protection. Attention for the welfare of test animals has improved, both from a legal perspective and among the people who work with these animals. This also appears to have positive effects on the test results. The discomfort induced by experiments – impairment of welfare – has not demonstrably decreased or increased. There is a trend however towards increased use of anaesthesia. We may tentatively conclude, therefore, that the number of animals used in experiments has fallen and that attention for the welfare of animals born as test animals has increased, although they still experience discomfort as a result of the experiment.

Actions required on behalf of test animals

- Ensure sustained attention for the housing and care of test animals, during as well as before and after the experiment. There are opportunities here for steps that fit within the current system and will benefit the welfare of the animals concerned;
- Arrange continued education and training (lifelong learning) for all who work with test animals, to ensure that new developments in the field of welfare are incorporated in actual practice;
- Provide incentives to facilitate publication in peer-reviewed journals of test animal-free studies without supplementary animal experiments if such experiments are not necessary;
- Critically consider new technologies that may provide new scientific insights but adversely affect the welfare of test animals or cause their number to grow;
- Critically consider the valorisation potential of results from animal models in a human environment;
- Provide better protection for all animals used in experiments, because animals not covered by current legislation may also experience discomfort;
- Accelerate the implementation of the 3 Rs.

Sources

1. Experiments on Animals Act (*Wet op de dierproeven*): <https://wetten.overheid.nl/BWBR0003081/2019-01-01>. Website accessed on 17 July 2019.
2. Netherlands Food and Consumer product Safety Authority (NVWA). Various *Zo doende* annual reviews (2000, 2005, 2010, 2015 and 2017) of animal tests and test animals, published by the (new) Netherlands Food and Consumer Product Safety Authority NVWA, The Hague.
3. Netherlands Food and Consumer Product Safety Authority (NVWA), 2019. *Zo doende 2017*. Annual Review of Animal Tests and Test Animals published by the Netherlands Food and Consumer Product Safety Authority. NVWA, The Hague, 64 pages.
4. Kantar Public, 2018. The state of the animal in the Netherlands. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
5. RDA, 2018. Animal procedures for the livestock farming sector. On the importance of animal welfare, sustainability and a research chain approach. RDA, The Hague, 43 pages.
6. Netherlands National Committee for the protection of animals used for scientific purposes (NCad), 2016. Transition towards research without the use of animals. On opportunities for the phasing out of animal procedures and the promotion of innovation without laboratory animals. Netherlands National Committee for the protection of animals used for scientific purposes, The Hague, 82 pages.
7. Episode of Focus, 2018. *Mouse saves lives*. NTR, 13 October 2018.
8. Van der Worp, H.B., Howells, D.W., Sena, E.S., Porritt, M.J., Rewell, S., O'Collins, V. and Macleod, M.R., 2010. Can Animal Models of Disease Reliably Inform Human Studies? *PLoS Med.* 30:7(3):e1000245. doi: 10.1371/journal.pmed.1000245.



8. Nature: a fairy tale?!

MORAL FRICTIONS CONCERNING ANIMALS IN THE WILD

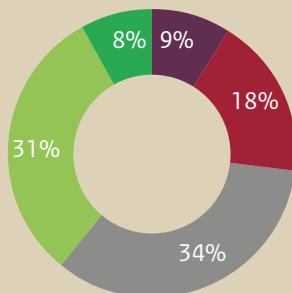
There is no shortage of moral frictions when it comes to the welfare of animals in the wild. Frictions among animals, frictions between animals and humans, but especially frictions among humans. Must nature be managed if it is to survive? To what extent are we responsible for the welfare of animals in the wild? And does it make a difference whether we are talking about deer, seals, geese, mice or caterpillars? Solutions can be found for every issue, but not everybody will choose the same solution. That is where the friction occurs. We will discuss three examples in this chapter.



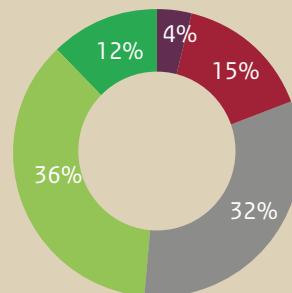
Controversy over the culling of red deer to prevent starvation

There is some controversy over the statement that it is wise to cull red deer to prevent them from starving to death; 39% agree or completely agree, while 27% disagree or completely disagree. There is more general support for the plan to build an expensive corridor to the Veluwe to prevent animals from starvation: 48% of Dutch citizens agree or completely agree with that plan.

To prevent annual starvation among red deer, it is wise to cull a large number of these animals now.



To prevent starvation among animals in the Oostvaardersplassen, it would be better to build an expensive corridor to the Veluwe than to cull red deer.



Please consider the statements below, and indicate the extent to which you agree or disagree with them. Base: half of all respondents (n≈1,000)



Photograph: iStock

8.1 Introduction

The dilemma springs from the fact that different people have different views on nature. Some regard nature the way Jean-Jacques Rousseau did, and believe that humans cannot possibly improve it. That vision holds that nature looks after itself and that human interference will distort the balance. Humans, according to this view, do not form part of nature. A contrasting view is that nature in the Netherlands needs to be managed to ensure its survival. Significantly, Anglo-Saxon countries prefer the term ‘conservation’ over ‘nature management’, while in the Netherlands nature ‘management’ (*beheer*) is a much more common term than nature ‘conservation’ (*behoud*). Nature in the Netherlands is usually confined to small isolated areas that suffer from influences from the surrounding culture landscapes and constitute incomplete ecosystems. This explains why nature in this country usually needs management in order to survive.

8.2 Oostvaardersplassen

In 1988, Frans Vera published a wonderful book on the Oostvaardersplassen reserve (below: OVP)¹, describing the spontaneous development of nature in that area. He was confident that this ‘new nature’ would be able to regulate itself, possibly with some adjustments by the area managers. There were no red deer in the reserve at the time; these were only introduced in 1992 in order to prevent forestation. Vera predicted that the OVP would be able to accommodate approximately 500 red deer.

The problem

It had been known for a long time what happens to deer populations that are not hunted in the absence of large predators². Even so, red deer were introduced in the reserve and the ‘natural management’ approach was continued. The number of deer exploded, occasionally to more than 4,000 animals³. The dry parts of the OVP changed into a treeless steppe. During cold winter periods, many animals died from a lack of shelter and food.

In 2006 and 2010, international committees (ICMO₁ and ICMO₂)^{4,5} issued recommendations on adjustments to the management approach to improve the welfare of the herbivores in the OVP. For example, they recommended creating more shelter

for the animals and adopting ‘(early) reactive management’ practices to prevent animal suffering through starvation. This approach also involved the culling of animals which, due to their poor condition, would not survive the winter anyway. However, the large numbers of animals stood in the way of effective early reactive management. The shelter that was provided proved insufficient and ineffective. The ICMO2’s advice to allow the animals to leave the area in winter was put aside. As a result, starved animals could be found in the reserve in every cold winter period.

The conflict

The public and the media lost confidence in the OVP managers and did not understand why so much animal suffering was tolerated. Farmers were angry, arguing that while they were bound to their duty of care for their animals, Staatsbosbeheer (the Dutch national forest service) allowed its animals to starve and got away with it. Supplementary feeding in winter was widely felt to be a good remedy. However, Staatsbosbeheer rejected this solution given its consequences in the long term, arguing that this would allow the population to expand further and cause even greater problems in the subsequent year. Another argument was that supplementary feeding would distort the natural processes in the reserve.

The OVP is part of Natura 2000, a European network of nature reserves. Biologists openly doubted whether ‘natural management’ was a suitable method to achieve the Natura 2000 objectives. Provincial administrators preferred a park-like landscape to a treeless steppe. Following the high mortality of animals in the winter of 2017-2018, a new advisory committee was established, chaired by Pieter van Geel. The committee advised breaking away from the natural management philosophy and proposed, among other things, to reduce the number of large herbivores to 1,100 in winter and 1,500 in summer⁶. This would reduce the chance of food shortages in winter to a minimum and allow the vegetation to develop into the desired park-like landscape. The Province of Flevoland decided to adopt the recommendations of the Van Geel committee. This however sparked a new conflict on how the population of large herbivores was to be reduced.

The situation in 2019

The provincial authorities are confronted with a diverse range of pressure groups and activists who oppose the culling of surplus animals. The alternative – catching and relocating the animals – is deemed feasible for the Koniks, but not for the red deer. The Council on Animal Affairs' advice to opt for the culling of red deer rather than catching and relocating them⁷ is motivated by welfare considerations, but unacceptable for many of the activists. They propose other solutions, such as supplementary feeding in winter combined with contraception, or replacing all large herbivores by farm animals for summer grazing.

Some activists ignore the fact that the OVP is a nature reserve and that its management will have to contribute to the Natura 2000 objectives. Careful consideration of the feasibility of the proposed alternatives is also lacking in some cases. For example, Tom Stout – Utrecht University professor and engaged by the activists as an expert on contraception of wild animals – has calculated that it would take ten years to reduce the population to an acceptable level with contraception. In addition, when balancing contraception against culling, the disruption of the social structure of the deer population caused by contraception has not been factored into the equation. In the meantime, on 19 November 2018 the court permitted the culling of four-fifths of the red deer population to safeguard the welfare of the remaining one-fifth. To that end, the annual surplus is harvested. With this approach, the annual total of culled animals over a prolonged period will be lower than it would be if the population were not reduced first. Instead of the annual culling of 1,000 to 2,000 red deer with early reactive management, from 2019 only some 250 animals will have to be culled each year.

A possible solution

The Van Geel Committee's advice and the associated decisions by the Province of Flevoland are the products of a well-considered procedure. Since emotions on the issue are running high, a dialogue between Staatsbosbeheer and the provincial executive on the one hand and the campaigning activists on the other has become well-nigh impossible. This is why the arguments in favour of the chosen solution should be communicated by an independent third party comprised of authoritative individuals with a public profile in the Netherlands.

8.3 Seal rehabilitation

The problem

If there is real nature in the Netherlands at all, it can be found in the Wadden Sea and in the Delta area. Interventions in these areas for the purpose of improving the welfare of individual animals are at odds with the principle that animals in the wild should be left to their own devices. But how to fulfil our duty of care when we see animals in the wild suffer?

The care for seals is organised quite effectively in the Netherlands. Currently there are five seal rehabilitation centres. This is where volunteers take seal pups that seem to have been abandoned by their mothers. The pups receive care at the centre until they can fend for themselves. Adult seals may also end up in a rehabilitation centre. This usually involves stranded, emaciated animals with lungworm infection. They are treated with antibiotics and worming agents at the centre and released once they have regained their weight. So on the face of it, the duty of care for seals with health issues is very well taken up in the Netherlands.

Nevertheless, in 2018 an international committee of experts recommended that the rehabilitation system should be changed drastically⁸, based on research showing that most ‘abandoned’ seal pups have not in fact been abandoned at all. In many cases, the mother went hunting in the North Sea and returned later; sometimes after more than 24 hours. It was also found that other mothers suckled pups that were left alone for a while. So removing seal pups if their mother has not been in sight for two hours will not increase the welfare of the pup, or of its mother. Indeed, mothers are likely to continue looking for their pups for up to two weeks.

The practice of rehabilitating adult seals with lungworm infection has not gone unchallenged either. As many as 20,000 seals live in Dutch coastal waters today. Calculations and observations have revealed that the growth of the population is stagnating, which suggests that food has become a limiting factor and that the waters cannot sustain more seals. When a cured seal is released successfully – which is certainly not a given, as the seals that fall ill have a weak immune system – one other seal, on average, will get into trouble due to lack of food. The international committee refers to this phenomenon as ‘zero-sum welfare’.

The solution

The new insights into the behaviour and population biology of seals as presented in the report of the Scientific Advisory Committee on Seal Rehabilitation in the Netherlands⁸ have caused the four largest rehabilitation centres to adapt their policy. The new policy is currently being implemented at the national level, accompanied by information for the general public on how to deal with stranded seals.

8.4 Animals in agricultural areas

The problem

Moral frictions occur when nature encroaches upon the space that we consider to be our exclusive property. Wild geese foraging in fields and farmlands, beavers inundating arable land, wild boars rooting up a golf course – all these animals cause damage. Periodically high densities of field mice can cause local damage to meadows and grasslands. Plant-eating insects reduce the surface of the leaves of crops or inhibit leaf growth. In the past, such agricultural commensals were mostly regarded as an inevitable yield loss. Farmers also knew that damage to agricultural crops does not always result in economic loss. Sometimes plants compensate for damage by growing faster later in the season, developing more shoots or blossoming more profusely. Farmers were prepared to accept a certain amount of damage, and only intervened if it exceeded a specific threshold.

In modern times, damage cause by animals in the wild is barely tolerated any more. Any damage that does occur – for example from geese foraging on winter cereal fields – is to be compensated by the government, since the government is responsible for the high density of geese in the Netherlands. Another example of zero tolerance is the fact that wild boars are only permitted to live in two areas in this country, despite the fact that they are endemic and should in principle be able to live in suitable habitats across the country. The same applies to red deer. So it seems that there is no room in the landscape for certain animals any more, outside the designated reserves. This is problematic, because isolated populations are unable to mix, causing them to lose their genetic variation and eventually decline as a result of in-breeding. For example, a recent study at Wageningen University & Research⁹ has shown that wild boars in the Veluwe live in isolation from the rest of the European population and are unable to exchange genetic material with other populations.

Species run a much higher risk of going extinct if they live in an isolated population. The result is impoverished nature. Moreover, the effects of modern agriculture are not limited to the farmland itself, but spill over into protected areas. This concerns the effects not only of fertilisation, but also of pesticides that end up in nature through a series of cycles. All these influences are also reflected in the welfare of animals in the wild. Certain pesticides impair the cognitive skills of insects, and eutrophication of nature due to overfertilisation results in scarcity of food resources for many organisms. The alarming decline of insects by up to 76% in 27 years was observed in nature reserves, not in agricultural areas¹⁰.

The solution

So agricultural land constitutes an important link in the management of biodiversity, and nature and agriculture cannot be spatially separated. This is why zero tolerance for animals on agricultural land will inevitably have harmful effects on biodiversity. Our agricultural system should adapt to this reality. This insight has promoted the development of a circular agricultural economy. In addition, in society at large there is growing awareness that ecosystem services such as pollination are crucial for the agricultural economy. Once these principles can be translated into applied policies, there will be a basis for resolving the conflict. The question remains whether policy adjustments will suffice – perhaps it is also possible to devise new earning models for those who use the land.

8.5 Conclusion

The examples in this chapter illustrate the fact that different people can have very different views of nature. Some tend to romanticise nature as something untouched (as yet) by human interference. Others are of the opinion that nature in the Netherlands must be managed in order to survive. The fact is that in this small country, nature and culture overlap and strongly depend on each other. Nature pervades our culture landscapes, just as culture pervades our natural landscapes. In most cases, nature in the Netherlands cannot survive without management because it is found in small and fragmented areas that comprise incomplete ecosystems. However, nature management is prone to encounter conflicting interests. The welfare of individual red deer may clash with that of others and with the welfare of other animal species in the Oostvaardersplassen. Well-intentioned efforts to rescue

stranded seals appear to harm the interests of other seals. And where animals enter agricultural land, the interests of humans and animals will clash. Fortunately, there is growing support for the view that a healthy agricultural sector also depends on biodiversity and that insects are not just a pest, but actually play an important role in crop pollination and biological pest control.

Sources

1. Vera, F., 1988. De Oostvaardersplassen: Van spontane natuuroitbarsting tot gerichte natuurontwikkeling IVN/Grasduinen, 168 pages.
2. Rasmussen, D.L., 1947. Biotic communities of the Kaibab Plateau, Arizona Ecol Monograph. 11(3), 231-275.
3. Staatsbosbeheer, 2018. Many large herbivores in Oostvaardersplassen culled in March. *Staatsbosbeheer Nieuws*, published on 5 April 2018.
4. ICMO, 2006. Reconciling Nature and Human Interest. Report of the International Committee on the Management of large herbivores in the Oostvaardersplassen (ICMO). Wageningen UR- WING report 018, The Hague/Wageningen, 24 pages.
5. ICMO2, 2010. Natural processes, animal welfare, moral aspects and management of the Oostvaardersplassen. Report of the second International Committee on the Management of the Oostvaardersplassen (ICMO2). WING report 039, The Hague/Wageningen, 92 pages.
6. Van Geel, P., 2018. Advies beheer Oostvaardersplassen. Kaders voor provinciaal beleid Provincie Flevoland. Report of the Oostvaardersplassen external guidance committee, 78 pages.
7. RDA, 2018. Dierenwelzijn bij herplaatsing grazers Oostvaardersplassen. RDA, The Hague, 7 pages.
8. Van der Zande, A.N., van Alphen, J.J.M., Goodman, S.J., Meijboom, F.L.B., Stegeman, A.J. and Thompson, D., 2018. Advice of the Scientific Advisory Committee on Seal Rehabilitation in The Netherlands. Wageningen Environmental Research, Wageningen, 86 pages.
9. De Groot, G.A. and Jansman, H.A.H., 2018. Hernieuwde uitwisseling bij de Veluwe zwijnen werpt vruchten af. *Zoogdier*. 29 (2018)3, ISSN 0925-1006, p. 3-5.
10. Hallmann, C.A., Sorg, M., Jongejans, E., *et al.*, 2017. More than 75 percent decline over 27 years in total flying insect biomass in protected areas. *PLoS One*. 12, 18-22.



9. Licence to kill

MORAL FRICTIONS CONCERNING THE KILLING OF ANIMALS

According to half of Dutch citizens, humans do not have the right to kill animals of all species, even if death is quick and painless

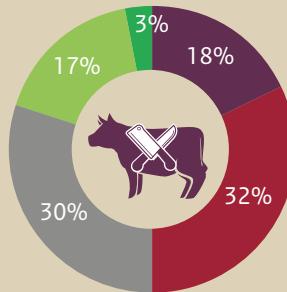
Half of Dutch citizens (50%) are of the opinion that humans do not have the right to kill animals of all species, even if death for the animal is quick and painless.

There are arguments though that can justify the killing of animals. The main arguments are the following:

- if the animal poses a threat to humans (84%);
- if the animal's suffering is serious and there is no prospect of improvement (83%).

The argument that it is justifiable to kill an animal 'for food' comes in third position (45%).

Humans have a right to kill animals of any species, if it is quick and painless.



Please indicate the extent to which you agree or disagree with this statement.

Base: all respondents (n=2,010)

Important arguments to justify the killing of animals

If animals pose a threat to humans (e.g. if they are aggressive or transmit diseases)

84%

If the suffering of an animal is serious without any prospect of improvement

83%

For food

45%

If animals damage the property of humans (e.g. geese, musk rats, mice)

32%

When hunted to control populations

12%

For medicinal studies

12%

Other

1%

Please list what you believe to be the three most important justifications for killing animals, in order of importance. Base: all respondents (n=2,010)

SURVEY RESULTS

Photograph: Shutterstock

Respondents seem to be more tolerant of the killing – without a reason – of test animals and small animals in the wild than of other animal groups

Views on the killing of animals also depend on the animal group involved. People in the Netherlands are more likely to disagree than to agree to the killing of production and leisure animals when the animals are old, there is no place for them or they cause a nuisance. Test animals and animals in the wild appear to belong to a different category: for example, 29% of Dutch citizens agree or completely agree that it is no problem to kill laboratory mice and rats.



Please consider the statements below, and indicate the extent to which you agree or disagree. Based on half of all respondents (n≈1,000)

The killing of animals raises a lot of questions, confusion and assumptions – as well as strong emotions. In some situations the killing of animals is widely accepted, for example when a suffering animal is euthanised. The issue is much more sensitive however in other situations, such as the culling of healthy animals to control a veterinary disease. In addition to that, we are not consistent. We do not always give the same treatment to different animals, or indeed to the same animals in different sectors. How much of a problem is that? In this chapter we will discuss several dilemmas surrounding the killing of animals and try to get a handle on the most important troublespots.

9.1 End of life

Before discussing this moral friction, we will first have to answer a number of questions. What does ‘dead’ actually mean, exactly? Do animals envisage death as their future state? And who should be permitted to kill animals, and on the basis of which criteria?

What does ‘dead’ mean?

Death may be a certainty in our lives, but we know relatively little about it. We may fear it, see it as a transition to an afterlife or consider it in the context of religious experience. Whatever the case may be, we do not really know what to expect. According to a definition on Wikipedia, ‘dead’ is an irreversible state in which an organism that was previously alive no longer grows and all metabolism or other active life functions have ceased¹. Significantly, this definition assumes that only *living* organisms can die. Rocks, therefore, are not dead for they have never lived.

In humans we distinguish between several different definitions of being dead, such as clinically dead, biologically dead and brain dead. There is also such a thing as legally dead. To illustrate the complexities involved, think of a person who is brain dead (flat EEG, so legally dead) but is kept ‘alive’ artificially on a heart-lung machine in order that his or her organs may be removed for transplantation. Another example is that of a missing person who has been declared legally dead, even though it is not certain that this state is irreversible. We do not apply these descriptions of ‘dead’ to animals. For example, the Animals Act (*Wet dieren*)² does not distinguish between legally dead and biologically dead.

Death as a vision of one's future state

Animals appear to long for death just as little as humans generally do. For example, suicide does not seem to occur among animals, not even when their welfare is severely impaired. There are stories though about animals that kill themselves, such as dolphins that drown themselves in captivity. Does that qualify as suicide? As regards those who think it does, biologist Midas Dekkers gave the following explanation (in an article in *NRC* newspaper, 2012³): 'I think people find some consolation in seeing their own shortcomings reflected in the animal kingdom'. According to Dekkers, the term 'suicide' implies that the aim of this behaviour is to achieve one's own death. For that to be the case, animals would have to be aware what death is and also that it is a state they can achieve of their own accord. In the same article, ethologist Jan van Hooff gave the following example: 'When a bee tears its own body apart by stinging, does it actually want to kill itself? No. Rather it is a fatal consequence of instinctive defensive behaviour of which the animal is not aware.' Even so, Van Hooff continues, we certainly have indications that primates and elephants have an awareness of death. 'They can be upset when a member of their species dies. That does not mean, however, that they are aware that the same thing could and indeed will also happen to themselves.' According to Antonio Pretti in his article 'Suicide among animals: a review of evidence'⁴, there is no real evidence that animals commit suicide, although he adds that it is also difficult to gather high-quality – scientifically sound – data on the subject.

Decisions about killing

Decisions about who is permitted to kill *humans*, and on what grounds, have been laid down in the law. However, besides legislation, ethical and social aspects play a role. In 'The end of animal life: a start for ethical debate'⁵, Frans Stafleu said that there is a taboo surrounding the killing of humans, but less of a taboo, if any, surrounding the killing of animals. According to Stafleu, there is an important social-ethical rule that says that people should not be killed; a kind of evolutionary dogma that prohibits the killing of members of one's kind. The complex legislation on euthanasia in the Netherlands reflects the sensitivity of the issue of killing people. Several groups have already gone to court to enforce clarification of the act. It should be pointed out that in most countries euthanasia is forbidden by law. We try to regulate the killing of people even in times of war, witness the existence of the laws of war, and the Geneva Convention that describes an acceptable way of dealing with captured

soldiers. The purpose of all those efforts is to prevent people from being killed without a proper reason. While there is legislation for animals, it definitely does not cover all aspects. The law clearly describes when it is justified to kill animals of specific species, for example in the event of immediate danger to humans (Section 1.10 of the Animal Keepers Decree) or for the commercial production of animal products (Section 2.10 of the Animals Act). There are other, less clearly defined but legally accepted reasons for killing animals, for example in the case of pests. The reasoning is much more nuanced in the case of humans. While it may be deemed acceptable to kill a terrorist during an attack, the death penalty was abolished in the Netherlands a long time ago.

Neither are all animals equal within the law. There is separate legislation for dogs, cats and captive geese, which rules that such animals may only be killed by veterinary surgeons, and only to prevent suffering⁶. Other animal species however may be killed by anyone as long as the ‘killer’ is an expert and the animal is killed in as animal-friendly a manner as possible, with minimum suffering. We are allowed to kill some animal species for food, but not others – pigs versus dogs. The animals with the fewest rights are those that are considered pests, but even for this group legislation is being created, particularly as regards expertise in fighting them and the methods used – with limitations on the use of chemicals or certain mechanical methods.

9.2 Accepted reasons for killing animals

Euthanasia as an animal welfare measure

The prevention of suffering is usually considered to be a justified reason for killing animals. Indeed, much of the literature suggests that arrangements for this for animals are better than those for humans. For example, Stafleu⁵ discusses the case of a livestock farmer who has an incurable disease but does not qualify for euthanasia. He quotes the farmer as saying to the doctor: ‘Even a cow would be killed in this situation, but we let our fellow human beings suffer’. Our public survey⁷ included the following question: ‘Please list what you believe to be the three most important justifications for killing animals, in order of importance.’ A clear majority, 83%, selected ‘If the suffering of an animal is serious without any prospect of improvement’ as one of the three most important justifications. In the context of companion animals, the phrase ‘end the animal’s suffering’ is used more often than ‘euthanasia’.

In this day and age, people and companion animals can be said to have concluded a special ‘contract’. The animals provide companionship for humans, some would even call it ‘love’, while the animals are rewarded with food, care and attention, again sometimes referred to as ‘love’. Needless to say, the humans drew up this contract without consulting the animals. In many cases the duty to perform certain tasks, such as protecting the yard or pulling a cart, has been dropped from the contract and replaced by the task of providing companionship. But what does that entail when our beloved companion begins to ail, or to suffer? The first response, usually, is to provide medical care. Thanks to the development of veterinary medicine, such care can indeed be provided, and of excellent quality. However, sooner or later aspects such as suffering, quality of life, expected remaining years of survival and the costs of veterinary care will need to be considered. While these depend in part on the animal concerned, they are also heavily influenced by the tendency to attribute human characteristics to animals (anthropomorphism). Other considerations will also weigh in, such as the owner’s financial and social situation, pressure from the environment and such things as an approaching holiday or planned pregnancy. All of these will strongly influence the decision on when to intervene, to the extent that the animal’s suffering may no longer be the primary determinant.

In his aforementioned book ‘The end of animal life: a start for ethical debate’, Joost van Herten⁸ provides some in-depth comments on the killing of animals to end their suffering. According to Van Herten, humans and animals do not experience suffering in the same way. Humans can envisage interests or concerns beyond the suffering. For instance, elderly people sometimes take their physical suffering for granted because they dearly want to see their grandchildren grow up. Animals probably lack that mental capacity; they only suffer in the present. We humans tend to decide on behalf of our pets what quality of life means for them. The suffering of an animal has thus become the joint suffering of humans and animals, and it depends on the given context: an animal in a shelter gets a different assessment from an animal in a family situation. As a result, some animals are euthanised too late, or too early. Vets may be confronted with an owner that is ‘suffering’ while the animal is not, such as when the cat is incontinent. In such a case, euthanasia obviously has little to do with ending the animal’s suffering.

Farm animals and horses are also euthanised. In such situations, and especially in the livestock sector, context – think of economic return, or the financial value of the animal – often carries more weight than animal suffering. In legislation on euthanasia on humans, the moment at which the person concerned asks for euthanasia takes centre stage. An expert will then assess whether that is actually the right moment. No animal will ever indicate the right moment for euthanasia. In other words, should the legislation for euthanasia on humans be made to apply to animals, euthanasia on animals would become impossible.

Killing animals for food

Another legally justified reason for killing animals is to do so for food, if the animal concerned is a farm animal. In fact, thousands of animals are killed for that reason every day. In our public survey, 45% of respondents selected ‘for food’ as one of the three most important justifications for killing animals. Before discussing ‘for food’ as a legitimate reason for killing, we will consider the manner in which farm animals are killed.

The law states that farm animals must be killed by an expert, ‘with minimum suffering’. The method used to that end is letting the animal bleed to death by severing its carotid artery, so that the blood can flow out quickly. The animal will then die of anaemic shock. In addition to being a simple way to kill an animal, it is also an efficient way to remove the blood from its body. This has a positive effect on the quality of the meat and on food safety.

To minimise the suffering of the animal, the law states that the animal must be stunned before bleeding. This can be achieved using gas, electricity or a slaughtering mask. By way of exception, bleeding without first stunning the animal is permitted within the context of ritual or religious slaughter. This practice has been the subject of debate in the Netherlands for more than a century, and was discussed in the Lower and Upper Houses of Parliament in 2013. In the end, the Upper House allowed the freedom of religion, as enshrined in the Constitution, to weigh more heavily than the assumed suffering of the animals subject to ritual slaughtering. Incidentally, stunning is no guarantee for a peaceful death. The risk of suffering remains, for instance due to suffocation when gas is used, or to stress in the case of an electric shock to individual animals.

Let us now move back to consumption as a justification for killing animals. In our public survey, 48% of respondents agreed or completely agreed that in the Netherlands, meat consumption is a basic need that justifies the slaughtering of animals. Society has long accepted the killing of animals to satisfy the desire of humans for meat, but this is now becoming more and more controversial. Media coverage of animal slaughtering and abuses in the sector arouses strong emotions. The average consumer also prefers not to be confronted with (pictures of) dead animals. Most consumers like to see meat nicely packaged in the supermarket; the fact that animals have to be killed for that should preferably remain invisible to them. These contradictory feelings could be seen to play a role in the upheaval caused when pig carcasses at an abattoir in IJsselstein were visible from the public road⁹.

There are historical explanations for the craving of humans for meat. In 'The end of animal life: a start for ethical debate'¹⁰, the author quotes Walter Burkert describing meat as something more than food; many people associate it with strength, wealth, celebration and luxury. If meat, like vegetables, is purely seen as a nutritional component, the increasing availability of high-quality meat analogues should logically cause meat consumption figures to fall. After all, in such a situation it would no longer be socially acceptable to kill animals for that specific component of our diet.

People who eat meat often say they do so simply because they like meat and are used to eating it – meat as a historically accepted stimulant. Other people associate meat with damage to the environment, sub-optimal welfare among farm animals and the need to kill animals. Perhaps it is the keeping rather than the killing of farm animals that causes the greatest moral friction. During the RDA conference in February 2019, participants in the break-out session on the killing of animals concluded that the current livestock farming system is a source of tension between the intrinsic value and the economic value of an animal. For example, livestock farmers are forced to kill weak young animals because, due to economic constraints, there is no time and energy to look after them. The killing of those animals may lead to welfare issues, e.g. if the animal is not stunned before being killed, if illegal methods to kill the animal are used if the legal method is not properly carried out.

Test animals

One legally and ethically accepted and carefully described reason for killing animals is in the context of experimental research. This is often described as a ‘necessary evil’. In our public survey, 29% of respondents agreed or completely agreed that ‘It is no problem to kill laboratory mice and rats; it is a painless death and they are hardly aware of it’. As we shall find out below, however, the killing of test animals does involve certain dilemmas, such as those described by Fentener van Vlissingen¹¹ and Franco and Olsson¹².

Test animals can be killed for various reasons during or after an experiment. Many test animals are killed as a matter of course once the experiment is over. It may be the case that this is done in the interest of the animal, so as to end its suffering. However, the experiment itself may require the test animal to be killed, for example to enable a morphological or pathological study of its organs or to collect blood. A third reason for killing test animals is to eliminate surplus animals, for instance when only male animals are needed for an experiment or when animals have been bred but will not be used for the experiment.

The first two reasons appear to be justifiable both from a scientific and ethical viewpoint. However, an animal does not necessarily have to be killed in order to collect its blood; the researchers could opt to use more animals in the experiment and draw a little blood from each. This would give rise to the difficult question of whether using many test animals and keeping them alive is preferable to using a few and killing them. The practice of killing test animals at the end of the experiment, no matter in how animal-friendly a manner that is done, also requires further examination. Could the animals be re-used in another experiment, or would that in itself be ethically unacceptable? Again, the question is whether to opt for using many animals and subject them to limited welfare impairment and subsequent death, or using fewer animals and subject them to repeated welfare impairment because they stay alive. In the past, relocation after the end of the experiment was done in the case of apes, for example, by housing them at Stichting AAP. The same practice might perhaps be applied to cats and dogs after their use as test animals, but it will be much more difficult in the case of rats and mice.

When a test animal is killed in order to end its suffering, this is regulated with reference to the concept of ‘humane endpoints’. In the case of progressive illnesses or unanticipated welfare issues that require immediate intervention, killing the animal is generally seen as the best choice. Indeed, in many cases it is a legal requirement. In contrast, the final reason for killing animals – because the ‘surplus’ animal has not been or cannot be used – has become controversial since it was denounced by several animal protection organisations.

Incidentally, not all surplus animals that are killed are test animals. The practice is also applied to surplus farm animals and zoo animals, usually males. Examples include male broilers in the egg sector, young he-goats in the milch goat sector and young males in zoos that do not tolerate other males in their territories. Society calls for solutions from the sectors concerned. For example, the goat farming sector is trying to create a market for goat’s meat, for which purpose the young he-goats could be kept and fattened. However, if the sector fails to create good living conditions, this might actually result in more (long-term) animal suffering than would have been caused by killing the surplus he-goats.

9.3 Controversial reasons for killing animals

Generally speaking, the practice that understandably generates the most resistance is that of killing healthy animals without any clear reason. Again, however, this also depends on the animal species concerned.

Culling of farm animals

The culling of healthy farm animals to control a contagious veterinary disease is controversial. Recent examples include the culling of healthy cows in the fight against foot and mouth disease, and of healthy pigs to control swine fever. In both cases, many citizens, interested parties and experts simply failed to see why culling was necessary. Killing healthy animals for economic reasons is highly controversial, all the more so when the good alternatives that exist seem to be blocked by arguments arising from international politics or trade. One example is the non-vaccination decision for foot and mouth disease, or the culling of cattle vaccinated with a marker vaccine. The culling of chickens in connection with avian influenza appears to be less controversial. This may have to do not only with the fact that

chickens are less cuddly animals, but also with the risk of the avian influenza virus mutating into one that is highly dangerous to humans. After all, people appear to find the culling of healthy animals easier to accept if it is done to avoid risks for human health. Think of goats and the Q fever virus. In the public survey, no less than 84% of respondents selected 'If animals pose a threat to humans (e.g. if they are aggressive or transmit diseases)' as one of the most important justifications for the killing of animals. However, the animals themselves would certainly disagree.

Nuisance animals

The killing of nuisance animals has already been discussed to some extent in chapter 3. Opinions are divided on the issue. In the public survey, 25% of respondents agreed or completely agreed that 'If birds and mammals in nature cause a nuisance to people, it is justified to intervene and kill them', while 34% agreed or completely agreed that 'Mice are a real nuisance, so poisoning them is OK'.

The killing of nuisance animals was the topic of a break-out session during the RDA conference on 14 February 2019. The statement 'When killing nuisance animals, effectiveness is more important than animal welfare' evoked some strong responses from participants. While the majority supported the statement, even the proponents felt that animal welfare considerations should play a more prominent role in decisions on pest control. Those who opposed the statement argued that far more attention should be given to animal-friendly alternatives such as relocation of animals or making alternative habitats more attractive to them.

Nuisance may also occur in the form of environmental damage or environmental stress.

And environmental stress may act as a secondary cause of welfare issues among animals. Ben Mepham¹³ mentions the example of the culling of elephants in South-Africa. In certain parts of that country, the elephant population had grown to such an extent as to give rise to environmental issues. Botswana is facing similar problems at the moment. In May 2019, the government of Botswana announced its intention to lift the five-year-old ban on elephant hunting, due to the increasing number of human-animal conflicts¹⁴. Opponents of the hunting ban argue that the elephants cause problems on farms, for example by destroying harvests. People regularly get injured during confrontations, and several fatalities have been known to occur. As

discussed at length in chapter 3, in situations of this kind the rights of individual animals (in this case, the elephants' right to live) should be considered in a broader ecological context (the interests of other animals and plants) and weighed against the interests of human local residents (food issues and damage to agricultural land). In South-Africa, the situation sparked a debate on ethical aspects and clear alternatives to the killing of animals, such as contraceptive measures and the relocation of animals. However, those measures proved infeasible at the time.

Humans sometimes kill animals preventively in order to reduce the risk of a veterinary outbreak. For example, wild boars in the Netherlands are only permitted to live in designated areas. A poignant consequence of that was seen when, in Limburg province, two wild boars were rescued from drowning with considerable effort, only to be shot by a gamekeeper the next moment because they happened to have ended up on the wrong side of the water, in an area where wild boars were not permitted to live.

Hunting

Killing animals by hunting them causes moral friction. Originally a past-time for nobles and kings (which it still is, to a certain extent), hunting has largely developed into a regular wildlife management activity. During the hunting season, people with a hunting permit are allowed to hunt a number of animal species designated for that purpose in the law: hare, partridge, wild duck, pheasant and rabbit. Other species may only be hunted if the provincial executive grants a permit to that effect for the purposes of wildlife management. There are exceptions, however. Black rats, brown rats and house mice qualify as vermin that can be killed.

Wildlife management intervention is permitted in the event of danger – e.g. public health risks or disturbance of public order – or potential damage to crops, livestock, flora and/or fauna. The provinces draw up the wildlife management plans, specifying for each area and animal species how many animals the area could support at maximum without the risk of danger or damage. The number of animals of a particular species (the game population) is determined for each area. In many cases, such counts are performed by hunters and counters, and organised by game management units in collaboration with wildlife management units. If there are too many individuals of a particular species, permission for hunting them will be granted.

Wildlife management units are joint bodies that may include representatives from farmers, landowners, hunters, land management organisations, municipalities, animal protection groups etc. As such, wildlife management is highly democratic in nature. The moral friction is caused by the fact that in many cases it is the hunters themselves who do the counting. Critics have also expressed doubts about the accuracy with which the number of animals is determined that a particular area can support. However, a recent comparison of regular field-observation counts for roe deer in a relatively small nature reserve and counts performed by means of a drone fitted with a thermographic camera showed that the regular field-observation counts significantly *underestimated* the number of animals in the area, and also that they could not be reproduced effectively¹⁵.

In addition, there is considerable debate as to whether the problems can actually be solved at all by shooting animals, and whether alternative methods have received sufficient attention¹⁶. Doubts have also been expressed as regards the damage. The argument often put forward for the culling of wild boars and roe deer, for instance, is that they damage crops, livestock, flora and/or fauna. In woodland areas, however, the question remains how serious the damage to the trees really is, or whether it is part of the natural balance. Perhaps the real problem is not the damage to the flora, but the economic damage if the earning model for the area depends on timber harvesting. And while farmers no doubt incur economic damage when wild boars have ploughed up their cornfields, they could perhaps have prevented that damage by installing proper fencing.

Provincial authorities also frequently cite road safety as an argument for limiting the number of animals in a particular area. A collision with a large wild animal may cause considerable damage and potentially has serious consequences for car drivers, but most fatalities are animals, not humans. People who oppose hunting argue, in contrast, that accidents can occur because the disturbance caused by hunters makes the animals flee in a panic. They promote alternatives, such as building fences along roads. The Dutch Society for the Protection of Animals agrees that alternatives to hunting are not given sufficient attention. For instance, instead of culling hundreds of thousands of geese, they say it would be more logical to make the areas where we do not want them unattractive for geese, and lure them to other areas. Regulation

of animal populations in nature will remain necessary, especially in areas where there are no top predators (also see chapter 3).

It is the Council's opinion that the killing of animals – including by hunters – is unacceptable if there is no reason (any more) to justify it. Another aspect of this issue that must be taken into account is that hunting is also a money-making business. Not so much so in the Netherlands, perhaps, but in parts of Africa hunting for wild animals (including protected ones, sometimes) is a major source of income. Indeed, wild animals are specially bred there and released only to be shot by hunters who pay through the nose for a permit. This is an earning model for the local population to keep hunger and poverty at bay, and it may be inevitable as a means to maintain game reserves. People all over the world sense the moral friction here, witness the outrage sparked by a picture of the Spanish king Juan Carlos beside an elephant he had just shot in Botswana, and another picture of an American dentist beside the dead lion Cecil.

Much of the Council's solicited and unsolicited advice over the past 25 years concerned the killing of animals. A quick scan of advisory reports on the Council's website also shows that the majority are related in some way or other to the killing of animals¹⁷⁻²⁹. Unfortunately, however, all the Council's efforts have not yet resulted in a definitive solution for – let alone full acceptance of – the issues in this area causing moral frictions. Indeed, the frictions may actually have increased. Examples include political campaigns initiated by the Party for the Animals, by pressure groups such as 'Wakker Dier' or 'Varkens in Nood' and by countless committed citizens – fuelled by sensational reports on social media.

All of this will encourage many groups and individuals to continue causing friction in the future. We will probably never live in an ideal world without animal suffering. The Council will continue to help in placing these issues on the agenda. In addition, developments such as climate change, exponential population growth and the rising popularity of cultured meat call for renewed consideration of issues surrounding the killing of animals. One such issue is the construction of wind turbines to reduce the consumption of fossil fuels. Wind turbines kill birds and aquatic animals. Indeed, this is a potential subject for a future advisory report: 'Climate Policy and the Killing / Suffering of Animals'.

Sources

1. Wikipedia page about death: <https://nl.wikipedia.org/wiki/Dood>. Accessed on 1 December 2018.
2. Dutch Animals Act (*Wet dieren*): <https://wetten.overheid.nl/BWBR0030250/2018-11-01>. Accessed on 1 December 2018.
3. Rueb, T., 2012. Does suicide occur among animals? Article posted on NRC.nl on 1 June 2012. Accessed on 1 December 2018.
4. Preti, A., 2007. Suicide among animals: a review of evidence. *Psychol Rep.* 101(3), 831-848.
5. Stafleu, F.R., 2016. Even a cow would be killed...: about the difference between killing (some) animals and (some) humans. In Meijboom, F.L.B. and Stassen, E. N. (Red), *The end of animal life. A start for ethical debate*. Wageningen Academic Publishers, Wageningen, pp. 103-114.
6. Dierenwelzijnsweb, 2014. Killing dogs, cats and gees to become a punishable offence. News release published on 30 June 2014. Accessed on 1 December 2018.
7. Kantar Public, 2018. *The state of the animal in the Netherlands*. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
8. Van Herten, J., 2016. Killing of companion animals: to be avoided at all costs? In Meijboom, F.L.B. and Stassen, E. N. (Red), *The end of animal life. A start for ethical debate*. Wageningen Academic Publishers, Wageningen. pp. 203-224.
9. Hotse Smit, P., 2018. Pig slaughterer from IJsselstein on a quest to make conservative pig farming industry more sustainable. *De Volkskrant* newspaper, 14 April 2018.
10. Grimm, H. and Huth, M., 2016. The 'significance of killing' versus the 'death of an animal'. In Meijboom, F.L.B. and Stassen, E. N. (Red), *The end of animal life. A start for ethical debate*. Wageningen Academic Publishers, Wageningen, pp. 79-102.
11. Fentener van Vlissingen, J.M., 2003. In Koolmees, P.A., Swabe, J.M. and Rutgers L.J.E. (Red), *Het doden van dieren. Maatschappelijke en ethische aspecten*. Wageningen Academic Publishers, Wageningen, pp 67-72.
12. Franco, N.H. and Olsson, I.A.S., 2016. Killing animals as a necessary evil? The case of animal research. In Meijboom, F.L.B. and Stassen, E. N. (Red), *The end of animal life. A start for ethical debate*. Wageningen Academic Publishers, Wageningen, pp. 187-202.
13. Mephan, B., 2016. Morality, morbidity and mortality: an ethical analysis of culling nonhuman animals. In Meijboom, F.L.B. and Stassen, E. N. (Red), *The end of animal life. A start for ethical debate*. Wageningen Academic Publishers, Wageningen, pp. 115-136.
14. Molijn, C., 2019. Botswana lifts ban on elephant hunting. NRC.nl, 23 May 2019.

15. Oral announcement by P. van den Brandhof, Brandhof Natuur en Platteland.
16. Groenfront, 2015. Alternatives to hunting rarely used. News release published on 18 July 2015. Accessed on 10 December 2018.
17. RDA, 1997. Scenarios for contagious diseases (MKZ and NCD/AI). RDA, The Hague, 3 pages.
18. RDA, 1999. LNV scenario for classic swine fever. RDA, The Hague, 3 pages.
19. RDA, 1999. Policy measures on foot and mouth disease (MKZ). RDA, The Hague, 3 pages.
20. RDA, 2018. Culling and vaccination policy on veterinary outbreaks. RDA, The Hague, 24 pages.
21. RDA, 2012. Guidelines on Geese Culling RDA, The Hague, 26 pages.
22. RDA, 2005. Implications of EFSA opinion on the stunning and killing of the main categories of farm animals. RDA, The Hague, 26 pages.
23. RDA, 2018. The welfare of fish. RDA, The Hague. 55 pages.
24. RDA, 2018. The Emerging Insect Industry. Invertebrates as farm animals. RDA, The Hague, 67 pages.
25. RDA, 1996. Oostvaardersplassen. RDA, The Hague, 2 pages.
26. RDA, 1999. Animal mortality in winter in the Oostvaardersplassen, 1998-99. RDA, The Hague, 1 page.
27. RDA, 2000. Large Herbivores Guideline. RDA, The Hague, 2 pages.
28. RDA, 2005. Mortality among large herbivores in the Oostvaarderplassen in the winter of 2004-2005. RDA, The Hague, 21 pages.
29. RDA, 2018. Animal welfare in relocation of herbivores from the Oostvaardersplassen. RDA, The Hague, 7 pages.



10. Godwits or cows

MORAL FRICTIONS IN ECOLOGY AND TECHNOLOGY



Photograph: BuitenBeeld

SANDER WARMERDAM: IN THE EYE OF THE STORM

Interview with Sander Warmerdam, editor-in-chief of the *Leeuwarder Courant*

In July 2018, the LTO Noord Federation of Agricultural and Horticultural Organisations wrote an angry letter to the Executive Board of the University of Groningen. In its letter, LTO Noord criticised an article in the *Leeuwarder Courant* on 23 June 2018 on the problems of godwits in the province of Friesland. In that article ('Message from the front line', published online under the title 'Researcher Egbert van der Velde: "Meadow bird management should be a matter of the heart"'), godwit researcher Egbert van der Velde of the University of Groningen tells about the ongoing decline of meadow bird populations. His conclusion is that 'farmers and birds no longer go together'. While Van der Velde's story received a great deal of support, it also elicited some angry responses and led to questions for Minister Schouten of Agriculture, Nature and Food Quality in the Lower House of Parliament. A few days later, editor-in-chief Sander Warmerdam wrote an editorial on the issue, entitled 'The newspaper describes changes, even where frictions occur in the debate'. In other words, a true moral friction hot off the press.

Reason enough for an interview with Sander Warmerdam to learn from his experiences. The response to 'Message from the front line' did come as a bit of a surprise to the editors of the *Leeuwarder Courant*, says Sander. 'We had of course tried to publish a balanced story, but a number of readers clearly felt we had not succeeded.' Several livestock farmers were genuinely upset and cancelled their subscriptions. 'I contacted every single person who had sent in an angry response,' says Sander. Eventually they all renewed their subscription. Sander: 'Those talks served to let off steam'.

As editor-in-chief, he took a fairly unusual step by organising debate sessions at the newspaper's office and three other sessions elsewhere in Friesland. These sessions were organised

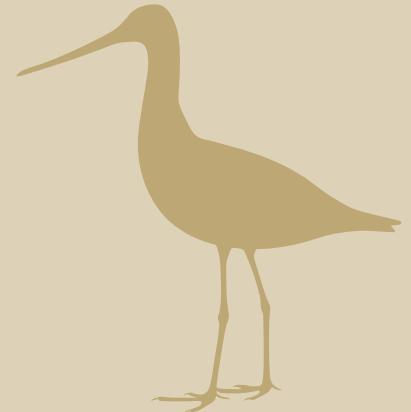
in collaboration with Kening fan'e greide¹ and a number of young livestock farmers. Sander made it clear to the speakers that mud-slinging would not be tolerated. That worked, he added. 'Of course, as a newspaper we try to cover all perspectives, but that's easier said than done in a society that is polarising as fast as ours. Just think of the debate on vaccination. Many participants in such debates are simply not reasonable.'

Warmerdam points out that it is not easy to find solutions that everybody can agree with. There are no simple solutions. While many livestock farmers are quite prepared to contribute to the search for solutions, they are held back by regulations, the phosphate issue and economic constraints. Nor are they always convinced that changes could be effective. Many livestock farmers believe that predation of eggs and chicks is another important cause of the decline in breeding success rates.

'What often emerged from the debates,' Sander noticed, 'is that we really need the entire dairy chain to change.' If consumers are prepared to pay more, retailers will be able to pay a better price to cooperatives, which in turn will be able to impose extra conditions on land use at member farms. In reality, however, there is a huge difference between the citizen who voices an opinion on livestock farming and the consumer who buys the products. 'Perhaps we need a godwit tax if we as a society truly believe that we need more biodiversity.' It was also pointed out in the debate sessions that while milk and dairy products would gain in emotional quality, the sector would also see lower production and lower export volumes of milk products.

Even though this public debate on a moral friction did not yield any simple solutions, the participants certainly felt that talking helps a lot. The debates in which Sander was involved reflected a considerable willingness to change, but change is not as easy as it sounds. This is because livestock farmers are currently bound by constraints that impede fast changes, but also because meadow bird ecology is rather complicated. It is true that predation is a major cause of bird mortality, and one that is not particularly easy to solve. Many predators themselves are protected animals and their populations are growing: 'In a way, that's a paradox in organic farming'.

¹ Kening fan'e greide is a citizens' initiative in Friesland committed to the preservation of the meadow landscape, the identity of the associated regions, and the animals and plants that live there – especially meadow birds such as black-tailed godwits.



Over the past three decades, the number of godwits in the Netherlands has declined by over 60%. Is their decline a consequence of intensified farming or largely attributable to the success of predators? Are the production volumes we demand from agriculture compatible with the need for a healthy biodiversity and with the welfare of animals in the wild? Is nature-inclusive agriculture the solution, or, in contrast, should we look for a solution in further intensification of agriculture and create separate spaces for nature? In this chapter we will discuss these burning questions on the tensions between nature and agriculture.

10.1 Dramatic decline

The immediate cause of this article is the continuous decline in the number of godwits over the past decades, and the possible role of intensive dairy farming as a factor contributing to that. In the debate on this issue, emotions are sometimes running high, with parties hurling reproaches at one another: a fine example of moral friction. This mainly concerns *populations* rather than individual animals, although of course welfare or health issues may arise among individual birds or cows.

The Ecological Monitoring Network gathers long-term data on populations of animals in the wild¹. Figure 1 presents the decline of waders – including lapwings and godwits – over the past three decades. In this chapter the main focus is on the decline of lapwings and godwits. The black-tailed godwit, which has recently been elected the Dutch national bird, is also referred to as the ‘king of the fields’, or *kening fan’e greide* in Frisian. Over the past three decades, the population of lapwings in the Netherlands has fallen by approximately 40%, and the population of godwits by more than 60%. Incidentally, geese populations have hugely increased over that same period.

Ecologists attribute the declining populations of these meadow birds to a combination of factors. The principal causes they identify are predation, farming activities and changes to the ecosystem brought about by factors such as falling groundwater levels.² The decline seen among meadow birds is not observed in the main predators of these birds. This is shown for several species of birds of prey in Figure 2: most populations of winged predators have either remained unchanged or grown over the past three decades. The growth of the number of common buzzards in particular is

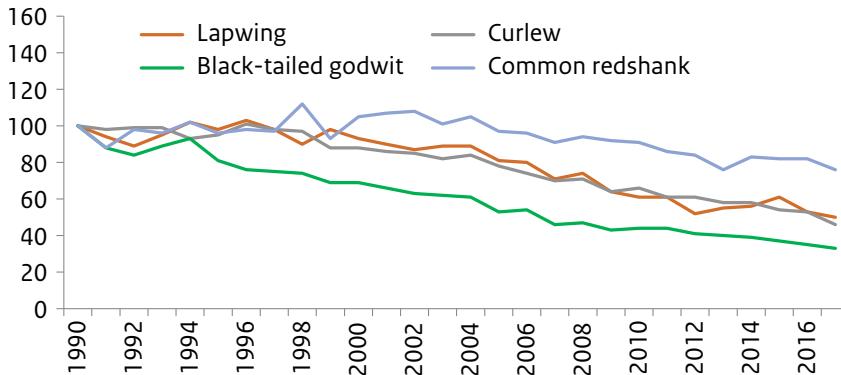


Figure 10.1: Index (1990=100) of meadow birds in the Netherlands over the 1990-2017 period. Data supplied by the Ecological Monitoring Network (NEM, Sovon, Statistics Netherlands, provinces). The numbers vary per animal species. The coloured lines reflect the increase or decrease in percentages since 1990.

striking. The increase in the number of storks has not been included in Figure 2. By 1990, storks had almost entirely disappeared from the Netherlands, but their number has grown tremendously over the past thirty years. The numbers of mammals that hunt meadow birds seems to have been monitored rather less meticulously. Overall, these mammals have done quite well over the past thirty years. Foxes in particular, but stone martens too, show a considerable increase in numbers. Other factors are at play besides the increase in predator populations. These include the decrease in meadowland area due to construction of buildings and roads, and the decline in the populations of insects that serve as food for young birds.

10.2 Predators or agriculture?

As indicated above, multiple factors are likely to have contributed to the decline in meadow bird populations. These include the success of predators, intensification of dairy farming, changes in the ecosystem and reduction of the meadowland area available². Livestock farmers and bird protection activists strongly disagree on which of these factors are the most important and how they interrelate. In this debate, emotions are sometimes running high, as shown for example in an article published

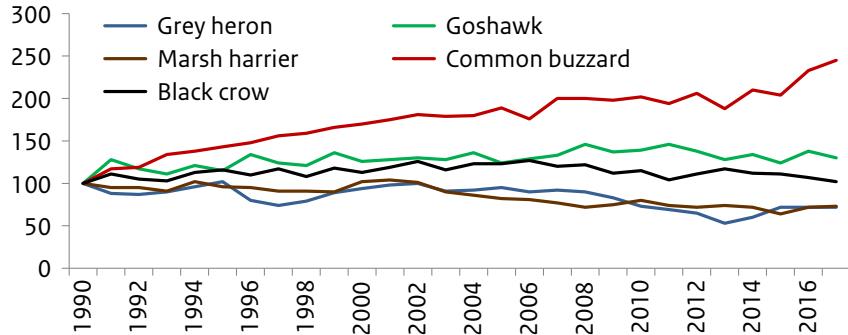


Figure 10.2: Index (1990=100) of the principal winged predators in the Netherlands over the 1990-2017 period. Data supplied by the Ecological Monitoring Network (NEM, Sovon, Statistics Netherlands, provinces). The numbers vary per animal species. The coloured lines reflect the increase or decrease in percentages since 1990.

in the *Leeuwarder Courant* of 23 June 2018³ (also see the interview with Sander Warmerdam, editor-in-chief of that newspaper, at the beginning of this chapter).

In 2003-2005, researchers studied the fortunes of chicks that had been equipped with a transmitter (Figure 3) in the meadows of Friesland. Of a total of 365 godwit chicks, it was found that approximately 15% survived, approximately 40% were lost to predators and around 8% fell victim to agricultural activity. And of a total of 297 lapwing chicks, approximately 25% survived, 35% were lost to predators and less than 5% fell victim to agricultural activity.

While they are not unwilling to protect meadow birds, many livestock owners do point to the high levels of predation. It appears that protected animals of prey such as the common buzzard, marten, fox and – a recent addition – the wolf are growing in numbers and quite successful as species. As a consequence of their success, predation of the nests of meadow birds is common. Note however that while wolves do not at present threaten meadow birds, they do serve as a symbol of the success of predators.

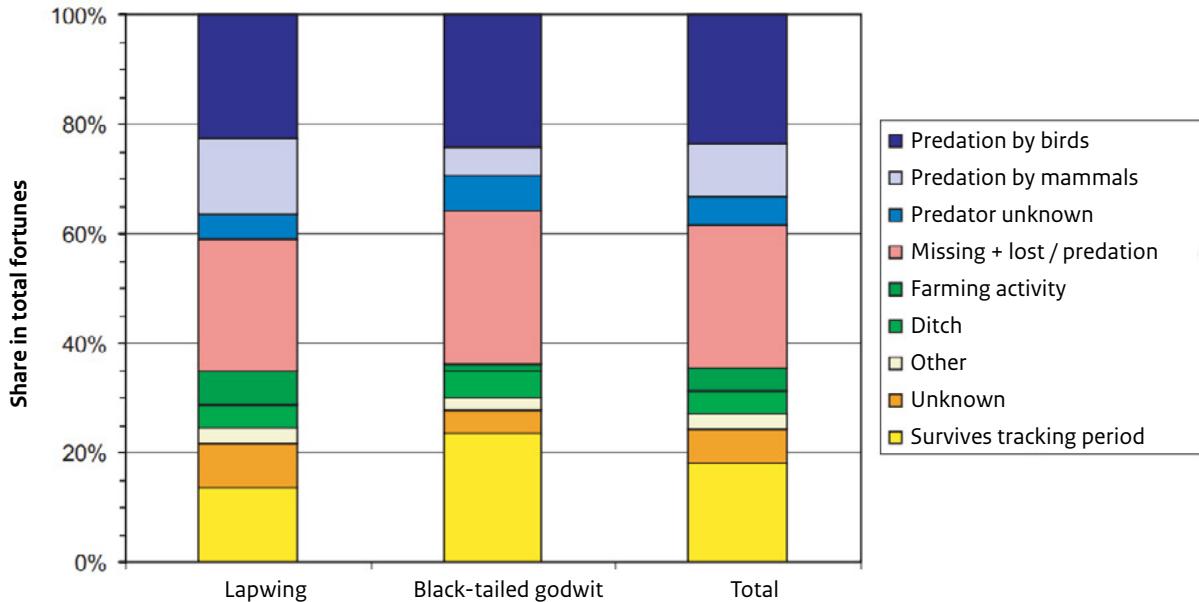


Figure 10.3: Overview of the fortunes of transmitter-tagged lapwing and godwit chicks, summary of all research areas in 2003-2005. In total, 365 godwit chicks and 297 lapwing chicks were transmitter-tagged. Source: Teunissen *et al.* 2005⁴.

10.3 Possible solutions

While it is possible to think of solutions to halt the loss of meadow birds, not everybody will choose the same solution. That causes friction. One option is to combine extensive or organic farming with nature management. A second option is to segregate nature and agriculture as much as possible, with separate areas designated for nature and focus areas for intensive and highly productive technological agriculture. As a third option, some have called for a fusion of ecology and technology in sustainable, nature-inclusive agriculture.²

Ecological agriculture

The plea of the proponents of ecological agriculture runs approximately as follows: As livestock farming is becoming more and more efficient, it is undermining the ecosystem that is necessary for meadows birds. Farmers are mowing their grasslands

too early, causing both clutches and young birds to be destroyed and killed by large agricultural machines. In addition, the farmers' practice of draining the soil causes insects to move deeper down into the soil and thus become much more difficult to reach by foraging meadow birds⁵. The use of synthetic fertiliser results in a uniform growth of grass and a lack of herbs and diversity. Also note that those uniformly green grasslands provide easy access for predators to meadow birds' nests. The development of these 'bilious' green fields is one example of what journalist Jantien de Boer³ refers to as 'landscape ache'.

Below are a few quotes from the article in the *Leeuwarder Courant* of 23 June 2018: 'The Noedpolder has now been drained. Through pipes, the water drips into low ditches. You don't even have to wear rubber boots after rain. Henk Waterlander imitates the noise that used to rise from the soil when walking on it. Sssllllppp, sllllllp – that's what you heard. A very wet noise. He used to mark the nests with little sticks, so that the farmer could steer clear of them. Today, the soil has become so hard he almost needs a rubber tent stake hammer to drive the sticks into the ground. Dejected: "But it no longer matters, really. There are hardly any nests left to mark"'.

Researcher Egbert van der Velde: 'A colleague of mine from another area had a quarrel with a dairy farmer. He'd just been ringing some chicks and was now seeing to the parent birds. When he walked back to the nest to release the parent, on came the farmer in his machine. With a broad smile on his face and looking my colleague straight into the eyes, he mowed right over the nest with the chicks. Some people won't stop anywhere. The whole issue is polarising'.

Technological agriculture

Between 1970 and 2018, over half a million hectares of agricultural land were repurposed, mainly for urbanisation and transport functions. Every year, around 7,500 hectares of agricultural land disappear, while the area that remains is used more and more intensively for food production. In this chapter, we use the term 'technological agriculture' to refer to this intensification of land use that results in high yields per hectare and incorporates all the latest technological advances. Proponents of technological agriculture argue that the current area of land available for farming is sufficient to feed even a growing world population, provided that the yields per hectare are substantially increased.

An argument often heard in the agricultural sector is that consumers expect to find safe and affordable food on the shelves. Consumers tend to romanticise agricultural practices of 35 years ago, but the reality is that milk now fetches the same selling price as *before* 1980, while production costs are at the 2019 level⁶. Neither should we forget that dairy cooperatives have made a great effort to improve the welfare of dairy cows (also see chapter 4). The animals now have much more space in their modern stables with cubicles, and outdoor grazing has become the standard. The only way for farmers to generate sufficient income in the current economic situation is to increase the number of cows per employee. As such, technological developments in agriculture have become essential in order to achieve economies of scale.

Combination

Nature and agriculture are difficult to combine on high-yield hectares. However, assigning nature to separate areas will not provide a simple solution for many meadow birds, because they need meadows that are tended and kept free of shrubs and other plants. A solution may be found in locating high-production farms next to green biodiversity farms. In such an arrangement, the high-production farms could focus on efficient production and the green biodiversity farms on nature-inclusive practices. An important argument in this regard is that efficient production will greatly reduce the need for animals and land, so that more land may become available for nature.

10.4 Concluding discussion

By pitting cows against godwits, we create a contradiction that does not really exist. After all, it appears to be possible to find a solution that will benefit both. Meadow birds and cows both need meadows and grazing practices. By formulating joint objectives, it will be possible to resolve the contradiction between technology and ecology. The need to restore biodiversity in the Netherlands, and to involve the agricultural sector in that effort, was highlighted once again at the end of 2017, when a range of organisations (including LTO Nederland) signed a declaration of intent entitled 'Delta Plan for Restoring Biodiversity in Green Spaces in The Netherlands'.

To support this effort, the Netherlands could focus on innovation to promote successful nature-inclusive practices in various fields. This should result in the

production of sufficient quantities of food with a good balance between ecology and technology. This is also consistent with Minister Schouten's vision for a more circular agriculture, and it definitely offers opportunities for striking the desired balance between ecology and technology. This process will cause the main goal of agriculture to shift from yield maximisation to system optimisation (also see chapter 4). As pointed out in the interview with Sander Warmerdam, this will require modifications to the chain. In the end, livestock farmers will have to be paid for the time invested and means of production used. Livestock farmers will not be able to switch to nature-inclusive farming unless they receive a reasonable compensation for their labour and investments.

As stated above, the current area of agricultural land available is sufficient to feed even a growing world population if a number of conditions are met. The most important of these are higher yields per hectare, reduction of food waste and a more balanced diet. That higher yield will have to be combined with more nature-inclusive farming practices. To achieve that, one realistic option would be to create a business model with a systemic perspective, and to allow the agricultural industry to adopt it step by step. In addition to producing milk, meat and vegetable products, activities such as generating electricity, processing residual flows and preserving biodiversity in the landscape would be part of the new earning model for farms. Indeed, biodiversity itself could turn into a livestock farmer's earning model. This would help restore meadow bird populations as part of a realistic win-win situation. A large number of interesting initiatives in this area have already been launched in the Netherlands, such as those by Stichting Doornik Natuurakkers⁷ and Buijtenland van Rhoon⁸.

However, even if the agricultural sector is successful in creating more space for nature and enhancing biodiversity by adopting a systemic perspective, there is no guarantee that the number of meadow birds will increase. After all, enhanced biodiversity means that the populations of other animals, including predators, will also be able to grow. The most feasible solution, it seems, is one that promotes an ecosystem which allows us to balance the welfare of various populations of wild animals – an ecosystem which is ultimately managed by humans. That new moral frictions will arise as we perform this balancing act, seems obvious...

Sources

1. Website of the Ecological Monitoring Website: <http://www.netwerkecologischemonitoring.nl/>. Accessed on 17 July 2019.
2. De Snoo, G.R., Melman, Th.C.P., Brouwer, F.M., van der Weijden, W.J. and Udo de Haes, H.A. (Red), 2016. *Agrarisch natuurbeheer in Nederland. Principes, resultaten en perspectieven*. Wageningen Academic Publishers, Wageningen, 384 pages.
3. De Boer, J., 2018. Researcher Egbert van der Velde: 'The management of meadow birds should be a matter of the heart'. *Leeuwarder Courant*, 23 June 2018.
4. Teunissen, W.A., Schekkerman, H. and Willems F., 2005. Predatie bij weidevogels. Op zoek naar de mogelijke effecten van predatie op de weidevogelstand. Sovon research report 2005/11. Sovon Bird Research, the Netherlands, Beek-Ubbergen. Alterra-Document 1292, Alterra, Wageningen, 136 pages.
5. Van der Wal, J. and Teunissen, W., 2018. Boerenlandvogels en predatie: een update van de huidige kennis. Sovon report 2018/31. Sovon Bird Research, the Netherlands, Nijmegen, 44 pages.
6. Van der Boon, F., 2019. Dutch farmers have become victims of their own success. *Het Financiële Dagblad*, 16 April 2019.
7. Website of Doornik Natuurakkers: <http://www.doorniknatuurakkers.nl/>. Accessed on 17 July 2019.
8. Website of Buitenland van Rhooon: <https://www.buitenland-van-rhooon.nl/>. Accessed on 17 July 2019.



11. Animals are just like humans

MORAL FRICTIONS SURROUNDING ANTHROPOMORPHISM

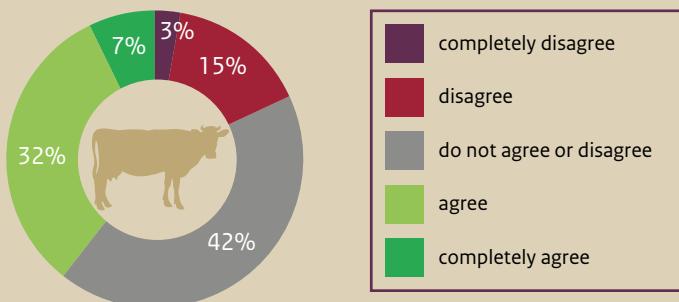
Humans and animals are equal 24%

Humans are superior,
but there are borderline cases 36%

Humans are superior to animals 40%

Select the answer that most closely reflects your own opinion. Base: all respondents (n=2,010)

Rather than impose our own human standards, it is crucial that we focus on the needs of the animal.



Please consider the statements below, and indicate the extent to which you agree or disagree. Base: all respondents (n=2,010)

People attribute human characteristics to animals so as to predict their behaviour and enter into relationships with them. It is in our nature to do so. Do the animals with which we maintain affective relationships actually benefit from our tendency to project ourselves onto them? If so, in what sense do they benefit? Where do the problems arise? In what ways may ethology and ecology correct us, if necessary? And won't the animals we do not bond with face a grim fate if ethology and ecology are not there to support them? In this chapter we will discuss these and other issues surrounding anthropomorphism.

11.1 Anthropomorphism is in our genes

Humans are social animals that have a natural instinct to connect with others. That includes other animals, and even objects. Humans attribute human characteristics to animals so as to predict their behaviour and enter into relationships with them. Council chairperson Jan Staman gives an example that most people will be able to identify with: 'One day, long ago, there was a tiny spider on the ceiling right above our dinner table. The kids were afraid of it, until I told them its name was Tommy, just Tommy. They forgot their fear immediately and actually objected when we wanted to move Tommy, not to mention vacuum it away.'

We attribute a level of consciousness to animals and regard them as sentient beings. But that is not all. We are also increasingly inclined to attribute a will to animals. Not only do we assume that animals pursue certain objectives and that they can suffer, we also assume that animals want to lead a happy life, aim to complete their life cycle, have expectations about their future and hold views about the here and now. That is a lot to assume. These are characteristics that children assign to their dolls, and adults to their computers. 'It's refusing once again.' Even a programmer (who knows better, really) assigns such characteristics to a computer the moment he uses it¹. Our tendency to so generously assign human traits to animals and objects is in stark contrast with the obvious lack of scientific evidence for that – although in the case of animals that is perhaps not so obvious for us.

11.2 Carrying anthropomorphism too far

Views on the relationships between humans and animals in the Western world are shifting from the notion that animals are subordinate to humans to the idea that they are in fact equals. In this process, many people assign human characteristics to animals (anthropomorphism); they increasingly regard animal as humans. Sometimes this tendency is carried very far. Think of the commercials recommending tins of bouillabaisse for cats. Effective though they may be, such commercials entirely fail to recognise the essence of the animal. In this particular example, the cats are unlikely to be bothered; indeed, most will be unable to resist this 'soup for cats'.

Things are different, though, in commercials or films featuring short-muzzled dogs in human-like roles. With their broad round faces and stocky build, these dogs easily endear themselves to humans. That is because these particular characteristics stimulate relational mirror neurons in our brains. The fact is, however, that dogs of races such as the pug and French bulldog seriously suffer from these external features. Many are chronically short of breath, because their short muzzle blocks the respiratory tract². The stocky build and wide head also cause serious health problems.

In our public survey³, 40% of respondents were of the opinion that humans are superior to animals by definition, and 36% believed that while humans are superior, there are borderline cases where no strict distinction can be made. Twenty-four percent said that humans and animals are equals. By taking a legalistic approach, some advocates of animal rights manage to eliminate practically every biological and moral difference between humans and animals. They will not be satisfied until animals are recognised as the equals of humans under the Constitution. This will of course generate a whole range of moral frictions – if a dog acquires constitutional status, then why not the flea in its coat?

11.3 An ethologist's view

Ethology (behavioural biology) has always been extremely reluctant to assign human characteristics to animals. It prefers the realm of empirical reality, using 'Occam's razor' principle. According to that principle, when different hypotheses are equally successful in explaining a phenomenon, we should select the hypothesis that includes the fewest assumptions and assumes the fewest entities. In other words: when trying to explain animal behaviour, we should give preference to the simplest solutions.

However, among behavioural researchers a school has developed which considers that approach to be inadequate. Members of that school argue that theories on animal behaviour should also take account of the role of emotions and other subjective elements. We cannot understand hierarchy-related fights among piglets or territorial fights among cats without resorting to such concepts as aggression, fear, insecurity, dominance etc. This research – as conducted by, for instance, Frans de Waal⁴ – has hugely contributed to the theoretical enrichment of ethology. In addition, it has promoted the moral reevaluation of animals, and of apes in particular.

There is no longer any serious doubt that animals are sentient, conscious creatures. They can experience suffering and often have a personality of their own. Several species are known to use language – and, surprisingly, much more precisely than we ever thought possible. In addition, the moral distinction between animals and humans is no longer determined solely by whether or not the animal has an advanced nervous system. In the past, researchers relied on analogies between neuroanatomical systems: people can suffer, so for an animal species to be able to suffer too, its brains should look pretty much like ours. However, this is no longer convincing; we now know that even animals with a primitive nervous system can feel and suffer. Animals are not ‘sentient robots’, unless we regard humans themselves as robots.

11.4 Where the moral friction occurs

Regarding the phenomenon of anthropomorphism, we can distinguish two extreme views. On the one hand, there are people who essentially regard animals as creatures that live according to the laws of nature. They are convinced that this view does the most justice to animals. According to this view, living in nature should solely be subject to the natural environment. Take, for example, the managers of the Oostvaardersplassen reserve, who argued that the starving red deer were ‘entirely natural’ (see chapter 8). This attitude can be seen among many people who work with animals, such as ethologists, animal keepers, veterinary surgeons and scientists that conduct animal tests. They do not deny for a second that animals are conscious and sentient beings and that they can suffer. And they too form relationships. Indeed, a vet who does not relate to the dog he is treating is guaranteed to lose some fingers. And a horse keeper should expect to be badly kicked.

On the other hand, there are people, generally private individuals, who recognise no limits in assigning human characteristics to their dogs, cats or horses. The consciousness and sensitivity they assign to their animals equals their own. We have seen several examples in chapter 5: Father Christmas hats for cats, pants for dogs in heat, panty shields and jewellery for pets. This becomes problematic once the animal can no longer be an animal; when the dog is kept away from a muddy path because the dirt would spoil its cute little jacket. Some of these people will not accept that animals can also be viewed from a different perspective. Through social media, people in this group potentially have a huge influence on public opinion and policy.

People at both ends of this spectrum risk taking things too far. People who treat animals as humans assign too many of their own characteristics to animals. That is not a solid basis for determining the animal's moral and legal status. Animals are not humans. On the other hand, problems will arise if we strictly view animals as creatures that live according to the laws of nature. People in this group run the risk of ignoring that they themselves are the cause of some problems. As such, they evade their moral responsibility to protect animals.

The worst thing that a person can be accused of in relation to animal welfare, is cruelty. The term is associated with deliberate malice, sadism, moral bankruptcy, emotional poverty and a personality disorder. Those who regard animals as creatures that live according to the laws of nature will regularly expose themselves to charges of cruelty. And indeed, environmentalists, professional keepers of animals and researchers that animals them in experiments – they have all been accused of cruelty. In actual fact, though, cruelty is mostly a product of indifference and negligence. That indifference has cultural roots: people can be excessively cruel to animals 'simply because that's how we treat them here'.

In addition, cruelty is reinforced by our language and by narratives in which we frame animals as robots and as insentient, primitive and dangerous creatures. Language can be a real killer here. We refer to dogs and cats as members of the family, friends or playmates – or indeed as our children. Today, we feel that dogs and cats should only be killed if that is necessary to end their suffering. Many of us take an entirely different view, though, when it comes to mosquitoes, rats, spiders, crocodiles and pigs. Mosquitoes are a pest, rats are vermin, spiders are creepy-crawlies, crocodiles are murderers and pigs are filthy. And we have even fewer moral concerns about animals killing other animals according to the laws of nature. Except, perhaps, when the cat catches a bird and plays its cruel games with it. These double standards cause moral friction.

11.5 What may companion animals hope for?

(As the reader will observe, this heading shows that we, like everyone else, are guilty of anthropomorphism.)

Of all animals, companion animals are the ones that we most readily establish relationships with. They would hugely benefit if we took it upon ourselves to build those relationships on knowledge of their consciousness, emotions and behaviours. And of their essential and non-essential preferences, and their behaviour when they get frustrated. It would also help tremendously if we properly recognised their signals, and their responses to our own behaviour, mood, body language and spoken language. Ethologists and ecologists can help us achieve that. Anyone who is planning to buy a dog, for example, should first look around for information about dog behaviour, dog body language and the principles of hierarchy among dogs.

The main issue is that we should regard and respect the animal as an animal. Relational creatures as we are, we need ethologists and ecologists to help us see animals for what they are, and use that as a basis for our relationship with them. We need those professionals to distinguish facts from fables, to learn about the principles of the moral status of animals and to find a proper place for animals within our legal system. After that the philosophers, ethicists and legal experts can set their teeth in it – not the other way around.

11.6 What may other animals hope for?

Animals we do not bond with, but that we do recognise and respect, may hope that those who keep and protect them do not place their welfare second to the system and to the laws of nature. A person who believes in nature will assume that animals will always be better off in nature than with humans. However, people who keep and protect animals and recognise their sensitivity to welfare and suffering feel that that a consequentialist approach alone no longer suffices. Ideally, they will increasingly identify situations where they believe an animal's suffering becomes excessive, and will adopt alternative assessment frameworks in addition to the utilitarian approach. Not to put nature 'in its moral place', but quite simply because we are part of the cause of that suffering and have the option to prevent and end it.

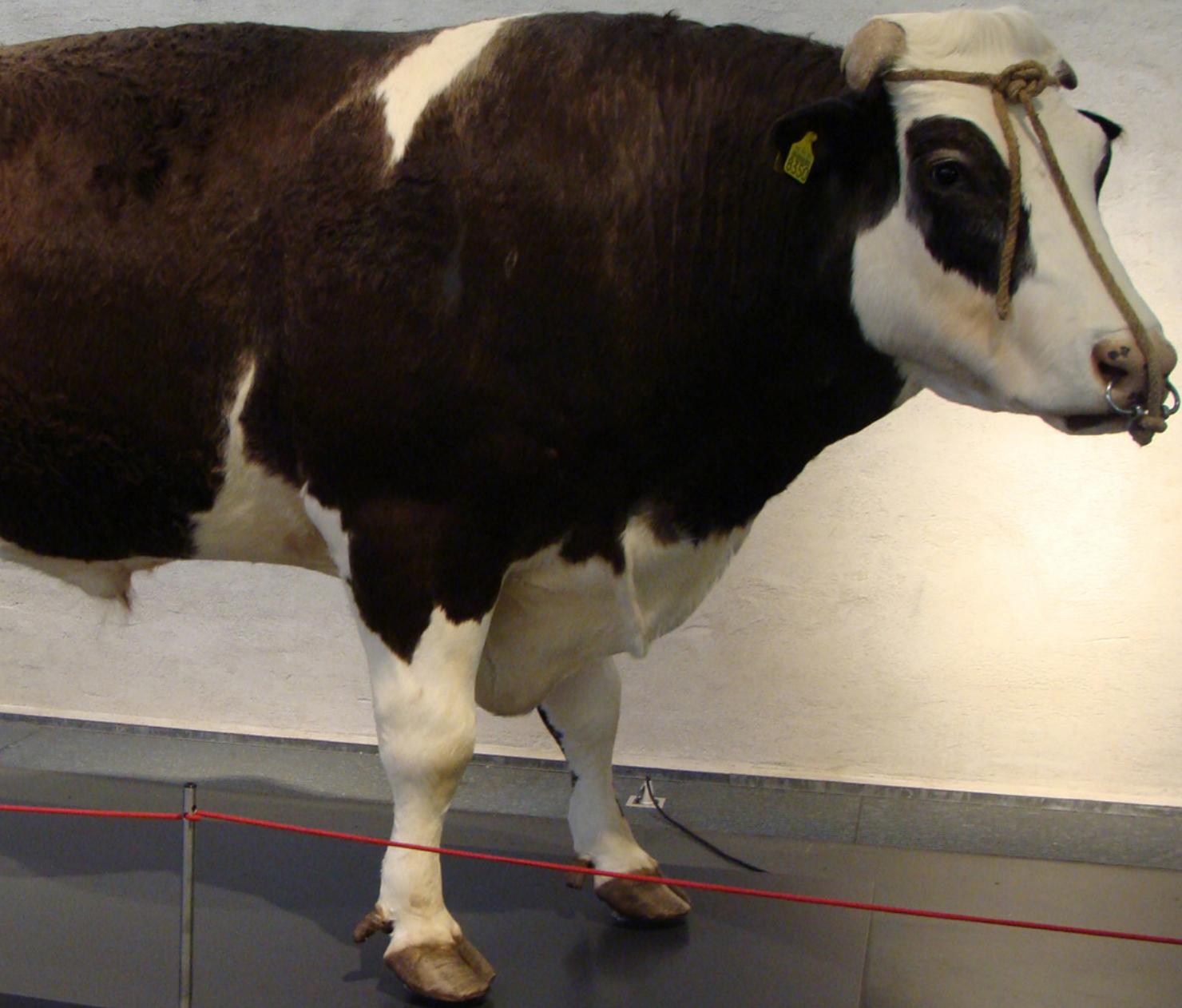
People who keep animals in a professional capacity and researchers who work with test animals tend to justify poor living conditions and aggravating experiments by referring to a higher purpose. Example: ‘These animal experiments will eventually enable us to develop medicines for people who are gravely ill, and there is no other way to achieve that.’ We are legally required to weigh the ultimate goal (the benefits) against the burden on the animal. However, major innovations that would result in radical improvements in animal welfare have not been forthcoming. What animals should hope for, then, is that the State will move to bring about huge and meaningful transitions. Change has already been initiated as far as test animals are concerned. As regards farm animals, circular agriculture offers great prospects for major change and promising new earning models in livestock farming that do justice to the interests of our animals – but only if animal welfare is granted sufficient priority in these developments. Indeed, this should be the central question in our dialogue: how to ensure that, in the debate on circular agriculture, animals are given the central position they deserve?

11.7 Summary

People attribute human characteristics to animals so as to predict their behaviour and enter into relationships with them. It is in our nature to do so. This chapter has shown us that this tendency to humanise animals is not always conducive to their welfare. Animals would benefit if we took it upon ourselves to build those relationships on knowledge of their consciousness, emotions, behaviours and needs. On a spectrum that ranges from excessive anthropomorphism to indifferent negligence, we may decide to choose the middle road. When doing so, we could ask ethologists and ecologists to help us see animals for what they are and use that as a starting point for our relationships with animals, recognising their feelings and intrinsic value.

Sources

1. Dennett, D., 1991. *Het bewustzijn verklaard (Consciousness explained)*. Atlas Contact publishers, Amsterdam, 571 pages.
2. Royal Dutch Society for Veterinary Medicine (KNMvD), 2017. *KNMvD standpoint on harmful racial features in dogs and cats with extremely short muzzles*.
3. Kantar Public, 2018. *The state of the animal in the Netherlands*. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
4. De Waal, F., 2019. *Mama’s Last Hug. On animal emotions and what they tell us about ourselves*. Atlas Contact publishers, Amsterdam, 368 pages.



12. Tinkering with animals

MORAL FRICTIONS CONCERNING GENETIC MODIFICATION IN ANIMALS

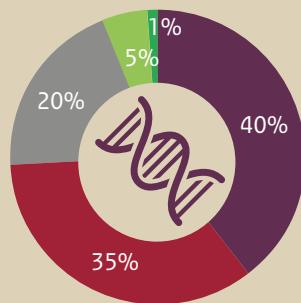
Resistance to genetic modification in animals

Three quarters (75%) of Dutch citizens do not agree that it should be permitted to modify an animal's DNA to make the animal fit people's wishes.

There is somewhat less resistance to genetic modification if it is done for other reasons. For example, 19% agree or completely agree that it is acceptable for pigs to undergo genetic modification so as to make them resistant to serious infectious diseases, and 22% declare it is acceptable to build human genes into the DNA of mice so as to make the results of experiments on these animals more applicable to humans.



Modifying an animal's DNA should be permitted to make the animal fit people's wishes.



Please consider the statements below, and indicate the extent to which you agree or disagree. Base: all respondents (n=2,010)



It is acceptable to build human genes into the DNA of mice so as to make the results of experiments on animals more applicable to humans.

agree, or completely agree: 22%



It is acceptable that pigs undergo genetic modification (i.e. changes their DNA) so as to make them resistant to serious infectious diseases.

agree, or completely agree: 19%

Please consider the statements below, and indicate the extent to which you agree or disagree. Base: half of all respondents (n≈1,000)

Photograph: Stier Herman
Peter Maas/Wikipedia

Recent developments in the field of genetic modification, including the discovery of CRISPR-Cas, have sparked a heated debate. As far as livestock is concerned, the applications of these techniques are an extension of current breeding practices: more efficient production, higher product quality and better resistance to diseases. However, these techniques also make it possible to adapt companion animals or test animals to our wishes. So does the end always justify the means? What impact will this have on the animals concerned, and how do we deal with animal integrity? How far are we prepared to go? Should the debate focus on the process or on the end result of the modification? In this chapter we will explore the moral frictions associated with the genetic modification of animals.

12.1 Introduction

New techniques typically bring a whole range of potential applications. This regularly provokes heated debates and a wide diversity of opinions. Recent developments in the field of genetic modification are a case in point. Genetic modification involves the alteration of the genetic material of organisms using advanced techniques such as CRISPR-Cas. Since these techniques allow us to bring about highly targeted changes to the genome of the organism, this type of genetic modification is often referred to as 'genome editing'. The previous chapters have already shown that views of nature and the way people use nature can vary considerably from person to person. Some argue that the use of techniques such as CRISPR-Cas will further degenerate animals into mere utensils that humans can alter at will. In contrast, others point to the opportunities that these techniques provide to improve animal welfare. The targeted modification of the genome of animals, therefore, entails a variety of moral frictions. Before discussing these in further detail, let us first examine how humans adapted animals in the past and what additional opportunities new techniques such as CRISPR-Cas actually offer.

12.2 A rich history

People began domesticating animals some ten thousand years ago. Over thousands of years, we applied targeted selection to create a variety of breeds with an enormous range of characteristics. This includes both livestock (such as cattle, chickens and turkeys) and companion animals (such as dogs, cats and pigeons). Selection

in animal breeding is a method by which we genetically adapt animals to our preferences. So this too qualifies as a form of genetic modification. The main difference with new techniques for genetic modification is that in animal breeding we use natural mutations and, through a process of targeted selection, combine them within a single animal. In the 1980s and 1990s, scientists developed various genetic modification and cloning techniques. However, these were intended almost exclusively for use in scientific research and only to a very limited extent for commercial applications (the transgenic salmon produced in Canada being the most important exception).

More recent developments over the past five years, such as the discovery of CRISPR-Cas, have made it possible to bring about small but extremely targeted changes to an animal's genome. In many cases, those changes are indistinguishable from natural mutations. The debate on these techniques does not centre around the purpose of the modification, but often focuses on the process (method) rather than the result of the modification.

12.3 Three categories

Genome editing techniques in animals can be divided into three categories. The first category involves the introduction in an animal, by humans, of a mutation from a different breed. This is a mutation that already occurs naturally within the species concerned, though not in the population or the breed that we want to modify. One example frequently encountered in the media is that of hornless cows. Cows can injure other cows, or the farmer, with their horns. Three different natural mutations of the POLLED gene are known to occur in cattle which prevent the animal from developing horns. However, these mutations are extremely rare within the Holstein Friesian breed – the most common breed of dairy cattle. To introduce the POLLED mutations in the Holstein breed through conventional breeding practices would mean also introducing a range of genetic variations with an adverse effect on milk production. Modern genome editing techniques however have made it possible to introduce such a mutation in Holstein bulls with a high breeding value for milk production¹.

The second category of genome editing involves the introduction in an animal, by humans, of a mutation from a different species. A mutation whose effect is known in a different species is introduced to a related species in which that mutation does not naturally occur. One example is the double-muscle mutation in the Belgian Blue breed of cattle. This is a mutation in the myostatin gene that results in excessive muscle growth and, ultimately, a high yield. Several research groups are now trying to introduce the same mutation into sheep, goats and pigs using the CRISPR-Cas technique. Another example is the modification of the RELA gene in pigs so as to make it resemble the same gene in African warthogs. This African pig species is closely related to domesticated pigs and wild boars, and is naturally resistant to the African swine flu virus. This virus, which causes extremely high mortality rates (up to 100%) in domesticated pigs and wild boars, has spread from Africa into Eastern Europe and Asia. By modifying the RELA gene in domesticated pigs, researchers hope to make these animals resistant to infection by this deadly virus.

The third category of genome editing involves creating new mutations. CRISPR-Cas enables us to create a mutation that does not naturally occur but whose function suggests that it will have a positive influence on a particular feature. Using this approach, researchers in the United States and Scotland have produced pigs that are immune to the PRRS (Porcine Reproductive and Respiratory Syndrome) virus^{2,3}. Respiratory infections caused by this virus result in reduced growth, fewer piglets per litter and increased mortality. The PRRS virus is endemic in most pig-producing countries, and vaccines have proved to be ineffective in halting its spread. PRRS infections seriously affect the welfare of the animals concerned and cause billions of dollars' worth of damage in the pig sector worldwide. In addition, the PRRS virus has a major effect on the use of antibiotics in the sector. Using CRISPR-Cas, the researchers have managed to remove a tiny bit of the CD163 gene; as a result, the virus can no longer infect the animals.

12.4 Applications of genome editing in animals

There are countless potential applications for CRISPR-Cas in animals. These not only include the high-profile examples among farm animals that we discussed in the preceding section. The Genetic Modification Committee (COGEM) has recently published an extensive report on the many applications of CRISPR-Cas

in animals and the associated ethical and social implications⁴. Upholding the intrinsic value of animals as its guiding principle, the Dutch legislator has opted for a ‘no, unless’ approach and does not, at present, permit any commercial applications of CRISPR-Cas. That explains why most of the applications mentioned in this chapter have either been developed abroad or within the context of scientific research. Incidentally, legislation on modifying the genome of animals is not always consistent. For instance, while the use of CRISPR-Cas is governed by legislation on genetic modification, chemical mutagenesis using chemical substances such as N-ethyl-N-nitrosourea (ENU) is not. This type of chemical mutagenesis, which results in thousands of mutations in random parts of the animal’s genome, has been used for decades as a technique for effecting mutations in test animals such as mice and rats.

Among livestock, CRISPR-Cas is only used for research purposes at present; no ‘treated’ animals have been permitted for human consumption anywhere in the world so far. In this group of animals, most applications are an extension of current breeding practices: more efficient production, higher-quality animal products and better resistance to diseases. We should bear in mind however that these features are determined by the complex interactions of hundreds or even thousands of genetic variations, whose individual effects are small and also largely unknown. As a result, most applications in breeding focus on mutations with major effects, resulting in modifications that could not be achieved in classical breeding practices, including potential resistance against viral diseases such as PRRS and African swine fever. Another aspect that is often overlooked in the debate on the use of CRISPR-Cas for this application is the fact that the focus in breeding is on the improvement not of individual animals, but of an entire population. That means that CRISPR-Cas will only be economically viable if the mutation can be created efficiently in hundreds or possibly thousands of animals⁵.

Each individual animal has hundreds of mutations in its genome that negatively affect its *fitness*. Some of those mutations may actually be lethal or result in genetic abnormalities if the animal is homozygous for that particular mutation. This is no problem in a large and genetically healthy population, as the chance of an individual animal being homozygous for such a lethal mutation would be small. However, considerable problems may occur under conditions with a strong selection for

specific features or considerable in-breeding with low effective population size. Examples include the BLAD mutation in cattle⁶ and the Warmblood Fragile Foal Syndrome⁷ in horses. The latter was a source of considerable concern in the horse sector in the Netherlands last year. Examples of the consequences of in-breeding are evident in many dog breeds, such as a high frequency of hereditary abnormalities and disorders. This is a very good example of an area where CRISPR-Cas can potentially contribute to combating genetic disorders and restoring the genetic health of small populations with a high incidence of in-breeding. A similar situation is found with respect to critically endangered animal species.

The examples above concern the genetic improvement of animal populations, with 'improvement' being taken to mean economic benefits or advantages for animal welfare and biodiversity. In these applications, CRISPR-Cas is combined with the positive selection of individuals that carry the desired mutation. Conversely, CRISPR-Cas may be used to create a mutation that weakens the animal, combined with the negative selection of individuals that carry the mutation. This technique could be deployed to fight diseases or unwelcome exotic species, for example. This is made possible by the development of so-called gene drive systems, which cause the mutation to be transferred to all offspring so that its frequency increases exponentially in the overall population. CRISPR-Cas has enabled the development of efficient gene drive systems. Scientists are exploring the possibilities of this technique to eradicate specific mosquito species as a means of fighting the spread of diseases such as malaria, dengue and zika.

Finally, it is also possible to use CRISPR-Cas in animals for medical applications in humans. Two types of applications can be distinguished. First, all over the world animals have been used for scientific experiments for centuries. CRISPR-Cas has considerably expanded the range of options in this regard. Not only does it offer the possibility to study the operation of specific genes in detail, but it also allows us to construct animal disease models for disorders in humans. Since the physiology of pigs strongly resembles that of humans, the use of CRISPR-Cas in this species for the development of specific disease models (diabetes, cystic fibrosis, ALS, Alzheimer's disease, cancer, cardiovascular diseases) has strongly increased⁸. A second medical application, again with pigs serving as the test animals, is xenotransplantation, or the transplantation of animal organs into humans. In this case, CRISPR-Cas is used

to 'humanise' animal organs so as to prevent rejection following transplantation. This technique has already proved successful in the xenotransplantation of pig's hearts into baboons⁹.

12.5 Moral frictions

Genetic modification generates considerable negative emotions in society. In our public survey¹⁰, a mere 6% of respondents agreed or completely agreed that modifying an animal's DNA should be permitted to make the animal fit people's wishes. So which types of genetic modification do gain social acceptance? The acceptance score for food from genetically modified animals is very low: only 19% of respondents agreed or completely agreed that 'It is acceptable for pigs to undergo genetic modification (i.e. changes their DNA) so as to make them resistant to serious infectious diseases'. As for medical applications, the value of an animal is weighed against the value and quality of life for humans. Twenty-two percent agreed or completely agreed that 'It is acceptable to build human genes into the DNA of mice so as to make the results of experiments on animals more applicable to humans'. Below is a summary of arguments often heard in the debate on genetic modification and genome editing using CRISPR-Cas.

Against

CRISPR-Cas violates the integrity of the animal, its inherent value. It is hard to determine objectively whether the integrity of an animal has been violated. The objections appear to target the method rather than the result, especially as regards the highly specific mutations that are possible with CRISPR-Cas. As many of these mutations already occur in nature, to all intents and purposes the result of CRISPR-Cas is identical to that of traditional breeding practices. Some opponents, however, have fundamental objections to any active intervention by humans in other animal species.

In favour

While genetic modification using CRISPR-Cas undeniably promotes the technological utilisation of animals, the fact is that our livestock and companion animals already are the product of centuries of adaptation to human preferences. Moreover,

this new technique actually allows us to correct errors made in the past, such as genetic defects in certain breeds of dogs.

Against

Opponents often argue that CRISPR-Cas also results in mutations in other, unknown parts of the genome, with potential unanticipated consequences. Despite the increasing sophistication and specificity of the technique, this risk cannot be ruled out entirely. Studies that specifically focused on this issue have yielded a fairly wide range of estimates for inadvertent mutations. However, it is not clear to what extent those differences are associated with the chosen target location or with the variation in the chosen CRISPR-Cas genome editing method.

In favour

Changes in genetic material are part of a natural process that is actually essential for the evolution of species and their adaptation to a changing environment. The genome of every human being or animal contains dozens of new mutations compared with that of its parents – many times the number created by CRISPR-Cas.

Against

An increase in the number of animal models for human diseases will also increase the use of test animals, cancelling out the efforts made to reduce the use of test animals for research. Some people are fundamentally opposed to the use of test animals. As regards xenotransplantation, there is uncertainty concerning the risks involved in crossing the species barrier. When the organs of pigs are transplanted into humans, to what extent can we be confident that endogenous viruses in the pig's genome will not cause any public health issues? How confident are we that we can fully inactivate those viruses? And can we rule out that our intervention leads to new viruses that are contagious for humans? As regards gene drive systems, other issues take centre stage, such as potential unanticipated effects and the need to prevent the gene drive spreading to useful species.

In favour

The animal models that scientists can create using CRISPR-Cas make it possible to develop new medicines. And xenotransplantation would help many patients for whom no suitable donor organs are available at present. So these applications

could save the lives of thousands of people – although it is true that many more animals would pay the price for that. Another counter-argument is that there are other ways to address the shortage of donors. Likewise, successful application of gene drives would help save thousands of human lives, for example by eradicating the malaria mosquito.

12.6 Conclusion

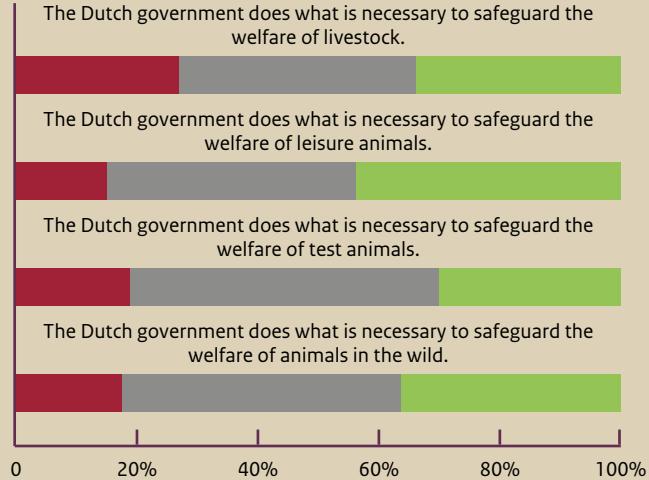
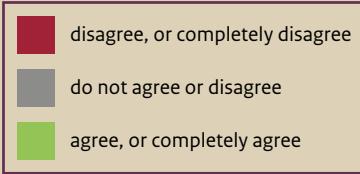
So where is the line between acceptable and unacceptable practices or interventions? Should the debate focus on the process or on the end result of the modification? Current research is focusing on a whole range of – potential – applications in animals, some of which are likely also to benefit the interests of the animal (in future). Technology can contribute both to increased sustainability and enhanced animal welfare. Given the potentially huge impact of genome editing using CRISPR-Cas on the lives of animals, both in a positive and negative sense, an assessment framework must be set up that takes account of the need to protect the interests of animals. This is not limited to safety risks for humans and animals in the strict sense, but calls for an assessment in which the interests of the animal – welfare, integrity – carry substantial weight. Based on social science and ethical perspectives, the research project ‘Just Editing’¹¹, which was launched last year, aims to develop conditions under which genome editing in animals is acceptable in the light of moral and social values.

Sources

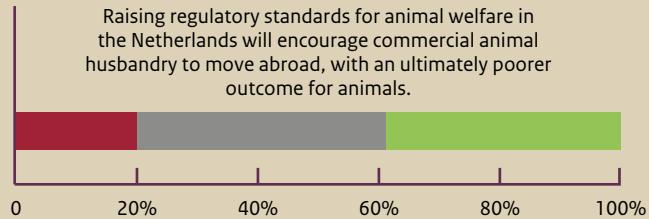
5. Carlson, D.F., Lancto, C.A., Zang, B., *et al.*, 2016. Production of hornless dairy cattle from genome-edited cell lines. *Nat Biotechnol.* 34, 479-481.
6. Burkard, C., Lillo, S.G., Reid, E., *et al.*, 2017. Precision Engineering for PRRSV resistance in pigs: Macrophages from genome edited pigs lacking CD163 SRCR5 domain are fully resistant to both PRRSV genotypes while maintaining biological function. *PLoS Pathog.* 13:e1006206.
7. Whitworth, K.M., Rowland, R.R., Ewen, C.L., *et al.*, 2016. Gene-edited pigs are protected from porcine reproductive and respiratory syndrome virus. *Nat Biotechnol.* 34(1), 20-22.
8. Genetic Modification Committee (COGEM), 2018. CRISPR & the animal. Implications of genome editing for society and policy. COGEM signaling CGM/180501-01. *Damen drukkers, Werkendam*, 108 pages.
9. Bastiaansen, J.W.M., Bovenhuis, H., Groenen, M.A.M., Megens, H.J. and Mulder, H.A., 2018. The impact of genome editing on the introduction of monogenic traits in livestock. *Genet Sel Evol.* 50, 18.
10. Nagahata, H., 2004. Bovine leukocyte adhesion deficiency (BLAD): a review. *J Vet Med Sci.* 66, 1475-1482.
11. Winand, N., 2012. Identification of the causative mutation for inherited connective tissue disorders in equines. United States Department Of Commerce Application Number: 61/486,464.
12. Rogers, C.S., 2016. Genetically engineered livestock for biomedical models. *Transgenic Res.* 25, 345-359.
13. Längin, M., Mayr, T., Reichart, B., *et al.*, 2018. Consistent success in life-supporting porcine cardiac xenotransplantation. *Nature.* 564, 430-433.
14. Kantar Public, 2018. The state of the animal in the Netherlands. Report issued in December 2018, commissioned by the Council on Animal Affairs. Kantar Public, Amsterdam, 38 pages.
15. Website of the Just Editing project: <http://www.sage-animals.com/> Accessed on 17 July 2019.

13. Animals and regulations

MORAL FRICTIONS SURROUNDING LAWS AND REGULATIONS



Please consider the statements below, and indicate the extent to which you agree or disagree. Base: half of all respondents (n≈1,000)



Please consider the statements below, and indicate the extent to which you agree or disagree. Base: all respondents (n=2,010)

Dutch and European laws and regulations on animal welfare are fragmented. There are different rules for different groups of animals, and the three layers of government – national, provincial and municipal – each have different responsibilities. As a result, troublespots may have effects in other layers than the one responsible. Examples include the welfare of horses at horse markets, or the nuisance caused by stray cats. How does the division of responsibilities work in practice, and where do frictions occur? In this chapter we will discuss those frictions and possible solutions.

13.1 Introduction

In the Netherlands, animal welfare is covered by three major laws. The Nature Conservation Act¹ of 2017 regulates the conservation of nature, including the animals in it. The Animals Act² of 2011 provides rules on the welfare of livestock, companion animals, hobby animals and zoo animals. A review of this act is scheduled for 2019. The Experiments on Animals Act³ of 2014 regulates the welfare of test animals. So there are different sets of rules for different groups of animals. For example, permitted treatments of rabbits depend on the given situation: is the rabbit kept as a pet, a test animal or a farm animal? Or does the matter concern rabbits in nature that people wish to protect or hunt? In addition, animal welfare is covered as a separate theme in other laws and regulations – as well as in a range of European directives, rules and agreements.

Also note that the three layers of government in the Netherlands – national, provincial and municipal – do not have the same leeway in drafting rules on animal affairs. The national government has central authority and final responsibility for animal welfare. Since nature conservation policy was decentralised, responsibility for animals in the wild has largely shifted to the provinces. Municipalities regulate the affairs that come within their own management mandate and are free to lay down rules for events involving animals within their territory. They may also impose requirements on the walking of dogs and decide to what extent dogs (and aggressive dogs in particular) are allowed to run free. This arrangement is a given in the structure of public administration in this country, but the resulting complexity may be disadvantageous for animals. For example, situations may occur in which animals can no longer rely on legislation for their protection. Sometimes one species

is protected while another is not, or – as in the example of the rabbit mentioned above – one species may enjoy different levels of protection in different situations. Sometimes the parties involved have trouble implementing the policy; see section 13.2 for an example. According to the Council, there are opportunities to resolve these issues and thus improve the welfare of the animals concerned. We will talk about that in more detail later.

In addition, it seems that more and more people are turning to their municipality in connection with animal welfare issues. As was obvious from the description of survey results in chapter 2, animals matter a lot to people. Many people feel a strong sense of commitment to improving animal welfare. For example, in their local environment citizens are confronted with events involving animals, livestock farmers' expansion plans, or plans to build houses in wildlife areas. Permission for such activities is granted – or withheld – at the municipal and provincial levels. So individual citizens and pressure groups regularly raise the alarm and submit questions to their local authorities on the welfare of horses at horse markets, on animal shows, stray cats and the welfare of the cock in its high basket during the traditional Kallemooi festival⁴ on Schiermonnikoog. In addition, municipalities are struggling to find animal-friendly approaches to address nuisance caused by animals such as gulls, crows, rooks, pigeons, stone martens and stray cats.

Urged by active citizens, municipal authorities are keen to promote animal welfare. Some pursue a separate animal welfare policy, and there are more and more municipal administrators in the Netherlands whose portfolio includes animal welfare. However, they realise that their options as administrators to improve animal welfare are quite limited, and that the national government is not always willing or able to facilitate them. Due to these changes in politics and society at large, municipalities are feeling the pressure to draw up and implement animal and animal welfare policies, and at the same time they are struggling with the lack of opportunities for them to do so⁵. As in other policy fields, questions arise as to what exactly the different administrative levels do, are allowed to do and are able to do. And questions on how the authorities could work together on this.

All those laws, regulations and governance questions ultimately concern the animals for whose welfare we are responsible. Animals that need to be looked after, or to

be left in peace. They might greatly benefit if each municipality adopted its own tailor-made policy – or they may lose out because of the contradictory approaches of two neighbouring provinces. In the following sections we will discuss two examples to illustrate these moral frictions. The examples show that animals may get into trouble as a result of the administrative obstacles that local and provincial authorities encounter in the implementation of animal welfare policies.

13.2 An example: horse markets

In 2017, the Council published an advisory report on horse markets in the Netherlands⁶. This subject has recently been placed on the political agenda following critical observations by animal welfare groups regarding the poor welfare of horses on such markets. The legislation of greatest relevance to the welfare of horses is the Animals Act (*Wet dieren*), the Animal Keepers Decree (*Besluit houders van dieren*) and the European Transport Regulation. The national government is responsible for drawing up national laws and legislation, and for their clear interpretation. It is also responsible for supervision and enforcement of national and international legislation. There is no specific legislation aimed at horse markets. There are regulations, however, regarding the abuse, neglect and transport of animals.

The municipality where the horse market is held is responsible for imposing the requirements by issuing a general municipal by-law (APV), an event licence or other types of permits. That municipality is also responsible for supervision and enforcement. The rules that municipalities draw up in connection with animals are usually aimed to prevent damage and nuisance. Animal welfare has no tradition of being included in an APV or any derivative policy. Indeed, the APV only includes a few standard rules with regard to animals, such as the duty to keep dogs on a leash and the possibility to designate a particular animal as a hazard, with the associated restrictions (leash, muzzle). Some municipalities have included provisions to reduce nuisance caused by pigeons or crowing cocks, or accessibility restrictions for horse-riders in specific zones.

As regards horse markets, there is considerable confusion about the legal framework, the powers and the extent to which additional requirements may be imposed to safeguard animal welfare, such as the horse markets protocol⁶, and

supplementary supervision. Municipal authorities have many questions about the options available to them to limit, prohibit or regulate horse markets. In addition, sometimes they lack (or believe they lack) the means to impose regulations, have no clear view of the subsidies available to improve animal welfare or do not have the relevant knowledge and expertise. From a legal perspective, a stalemate has been reached: the minister has the relevant powers but is unwilling or unable to take action, while the municipality, urged by public opinion and requests for enforcement of animal welfare regulations, is willing to take action but has no powers (see the letter from the animal welfare portfolio holders⁵).

In practice, what could the outcome of this be for the horses concerned? Needless to say, it is unfortunate when a party is willing to take extra measures to enhance animal welfare, but is denied the opportunity to do so. If a municipality decides to adopt stricter requirements and enforcement rules, this could benefit the welfare of horses at a specific market. However, it could also (further) increase the differences between municipalities in terms of the welfare conditions they impose and supervision of compliance. As a result, different markets could see very different regulations concerning the welfare of the horses. The question is whether this would be a desirable development. Is it desirable for municipalities to be given more regulatory options and powers as regards the welfare of horses, or should we strive for uniform rules to ensure that horses in all municipalities receive equal treatment? And how do the options available to municipalities relate to the final responsibility of the national government?

Also note that enforcement at the local or national level comes with potential advantages and disadvantages. For example, local vets and enforcement officials may be embarrassed when required to demand compliance from acquaintances at a local market. After all, they maintain regular contacts with these people and may fear reprisals or other problems. On the other hand, the national government may not always have the resources to ensure effective enforcement at the local level. So there are various situations in which it may not always be obvious what approach to adopt, as a result of which animal welfare may be impaired or at least not be improved. We will return to this later.

13.3 An example: animals in the wild

As pointed out above, the national government has central authority and final responsibility for animal welfare. The most important legislation for animals in the wild is the Nature Conservation Act (*Wet natuurbescherming*) of 2017. In it, several previous acts have been combined within the framework of European directives such as the Birds Directive and the Habitats Directive (see box). The nature Conservation Act provides for the protection of nature and biodiversity through area protection (European Natura 2000 areas) and the protection of specific species (Birds Directive, Habitats Directive / the Bonn and Bern Conventions and other species listed in Appendix A of the Nature Conservation Act). All other species are otherwise only protected under the duty of care. As such, not every species of animal enjoys the same level of protection, with some being more heavily protected than others.

The national government is responsible for setting the frameworks and ambitions for nature conservation policy. The decentralisation of nature conservation policy has shifted tasks and powers associated with the conservation of nature reserves and animals to the provinces, which both formulate and implement the policy. Only the large bodies of water continue to fall under the responsibility of the national government. Regional nature policy is coordinated by the provinces, which are also responsible for exemptions and licences. Provincial by-laws and zoning plans are used to lay down rules at the provincial level. The policy frameworks and rules with respect to nature differ from province to province. Every province is free to formulate its own policy for implementing the applicable rules. Provincial authorities formulate nature management plans, and wildlife management units formulate wildlife management plans covering hunting, management and damage control. In other words, animals in the wild may expect different approaches in different provinces when it comes to nature management, population control and animal welfare.

One aspect that tends to complicate things as regards animals in the wild is that efforts to ensure the welfare of individual animals may be at odds with the need to ensure protection at the level of species and populations – the welfare of populations. As shown by the example of seal rehabilitation in chapter 8, what is good for an individual animal is not necessarily good for the entire population, and vice versa, let alone for the future survival of populations – welfare of future individuals. In addition, the welfare of one species may hinder the welfare of another. For

example, compare the welfare of foxes with that of black-tailed godwits (see chapter 10). Considerations regarding animals in the wild, therefore, should take account of all those aspects⁷.

But how exactly is the welfare of animals in the wild regulated? The welfare of animals in the wild is not covered extensively in the Nature Conservation Act, which only refers to it in a few sections. These references concern the designation of resources for controlling animals so as to prevent or limit adverse consequences for welfare, and the possibility of supplementary feeding when the welfare of animals is at stake. However, the welfare of animals in the wild is a subject of growing concern among the general public and policymakers alike. It is not entirely clear, though, how exactly the responsibilities for the welfare of these animals are assigned. In principle, the provinces are now responsible for the protection of animals in the wild, and animal welfare is an implicit part of that. This means, for example, that responsibility for animal welfare in the Oostvaardersplassen has explicitly been transferred to the province of Flevoland. As regards the Waterleidingduinen, the municipality of Amsterdam is the body that decides on the fate of the fallow deer in that reserve. Large bodies of water fall under the responsibility of the national government. When animals are causing a nuisance, municipalities sometimes solve the problem themselves. So there are many different authorities involved.

In practice, what could the outcome of this be for the animals concerned? Thus far, animal welfare does not feature explicitly in a great deal of policy. Given that the provinces are free to formulate their own policies, the degree to which they cover animal welfare will differ from province to province. There are good arguments for that, as the approach often requires an area-specific (local or regional) focus. After all, a particular situation in the province of Drenthe cannot always easily be compared with a similar situation in Limburg. There may be differences in terms of the animal species that live in the area, the composition of their habitat, the animal welfare considerations involved as well as regional public opinion. In such a case, a tailored approach may help to promote the welfare of the animals concerned, and to more specifically examine the issues involved in the area. An example is the area-specific approach in the case of beavers.

Since the law does not specifically cover animal welfare in great detail, provinces can formulate their own policies to improve animal welfare. It is not clear as yet, however, how much legal space they have for doing so.

Complex situations can arise, for example, when an animal's habitat stretches across provincial boundaries and the agreements between those provinces are not clear. In such a case, the animal may get stuck between different policy rules, with potential consequences for its distribution, survival and welfare – both the welfare of individual animals and the survival of the population. From the animal's perspective, such municipal and provincial boundaries are hardly relevant. Wolves will migrate from one province to the next, and wild boars will ignore signs marking the boundary of their official living space. Moreover, ecological processes take place at various levels of scale, and often across administrative boundaries. To reap the full benefits of the National Ecological Network, we should look beyond the municipal and regional boundaries. When species go extinct, this will have an impact on animal welfare, as will poorly functioning ecosystems. Pesticides can impair a bee's sense of direction, and measures to control the box tree moth may result in welfare issues among birds, such as great tits. These are issues that cannot be resolved at the local or regional level.

As in the case of horse markets, the question is what sort of approach is desirable. Is it desirable for municipalities and provinces to formulate their own policies on the welfare of animals in the wild, or should we strive for uniform rules to ensure that the same welfare conditions apply throughout the country? And how does this relate to the responsibilities of other parties, and to the final responsibility for animal welfare of the national government? What should animals in the wild expect from the national government when it comes to animal welfare? Is there a problem if differences arise between the welfare of animals in Noord-Holland and elsewhere in the Randstad conurbation? So various questions remain to be answered, reflecting the lack of clarity as to how exactly the welfare of animals in the wild is currently safeguarded.

13.4 Possible solutions

The examples in sections 13.2 and 13.3 show that animals sometimes lose out in the implementation of animal welfare policy, and that municipal and provincial authorities may experience obstacles. So what should be done to ensure that the welfare of the various animal groups – animals in the wild, livestock, companion animals, hobby animals, zoo animals and test animals – is properly provided for at

the different levels of public administration in the Netherlands? And how can we remove the obstacles?

There are no straightforward answers to these questions. On the one hand, it would be desirable for responsibilities and powers to be assigned to the same administrative body, so that more effective action can be taken. On the other hand, some problems call for a European or national approach; others though can be more effectively tackled through a tailored approach at the local or regional level. So if we ask at what level of administration animal welfare should be addressed, perhaps we are not asking the right question. Instead, we should look for an approach that enables us to eliminate obstacles to the improvement of animal welfare and meet the growing interest in animal welfare among public authorities and the general public. This should involve attention not only for questions concerning administration and governance, but also for ways that enable the various authorities to collaborate and learn from one another. Throughout the process we should position animals centre stage and take their perspective, their behaviours and their life in a healthy ecosystem into account.

The search for local and regional opportunities to improve animal welfare should also cover strategies to prevent regional differences that cause animals to lose out or find their welfare better protected in some areas than in others. It is also important to ensure the presence of sufficient knowledge and expertise among the parties that want to address animal welfare issues. Proper coordination and knowledge sharing at the various different levels will prevent separate stakeholders having to reinvent the wheel. In addition, we need to remain consistent in how we weigh up the pros and cons of animal welfare measures – while the result may be different, the process should be uniform.

There is a need for clarity on the division of responsibilities, and on what exactly the final responsibility of the national government for animal welfare means when powers are transferred to other levels of government. And more clarity is also needed on the space available to those other levels of government for shaping animal welfare policy. If all the levels of government involved join forces in resolving these administrative and organisational issues, animal welfare can be taken several steps forward. The review of the Animals Act scheduled for 2019 should also address this.

13.5 Summary

In this chapter we have seen that Dutch and European laws and regulations on animal welfare are quite fragmented. There are different sets of rules for different groups of animals. In addition, the three layers of government in the Netherlands – national, provincial and municipal – do not have the same leeway in drafting, implementing and enforcing rules on animal affairs. This layered structure is typical of public administration in this country, but the resulting complexity may be disadvantageous for animals. For example, animals do not enjoy the same level of protection in some provinces and municipalities as in others. Sometimes the parties involved have trouble implementing the policy. Due to changes in politics and society at large, municipalities are feeling the pressure to draw up and implement animal and animal welfare policies, but they are struggling with the lack of opportunities for them to do so. The Council is of the opinion that while regional differences should be possible, we should prevent them from causing situations in which animals lose out or find their welfare better protected in some areas than in others. It is also important to ensure sufficient coordination and knowledge-sharing between the various levels of government, and to provide clarity on who is responsible for what.

Sources

1. Nature Conservation Act (*Wet natuurbescherming*): <https://wetten.overheid.nl/BWBR0037552/2019-01-01> Website accessed on 17 July 2019.
2. Animals Act (*Wet dieren*) <https://wetten.overheid.nl/BWBR0030250/2019-01-01>. Website accessed on 17 July 2019.
3. Experiments on Animals Act (*Wet op de dierproeven*): <https://wetten.overheid.nl/BWBR0003081/2019-01-01>. Website accessed on 17 July 2019.
4. Ten Cate, J., 2019. It's time to abandon that archaic Kallemooi tradition. *De Volkskrant* newspaper, 8 June 2019.
5. Letter on animal welfare from 36 municipal animal welfare portfolio holders to the members of the Standing Committee on Economic Affairs, 19 June 2017.
6. RDA, 2017. *Horse Markets in the Netherlands. From the Horse's Mouth*. RDA, The Hague, 74 pages.
7. RDA, 2017. *Weighing Wildlife Welfare. Application of the wildlife assessment framework*. RDA, The Hague, 64 pages.

14. From ruler to steward to partner

FINAL REFLECTION ON THE STATE OF THE ANIMAL IN THE NETHERLANDS

Our ambition in drawing up this publication was to explore ‘The state of the animal in the Netherlands’. What is the state of affairs in 2019 as regards animals in the Netherlands? And how have views on animals changed since the Council on Animal Affairs was founded, in 1993? We have explored these two aspects in a large-scale public survey and in several reflections and essays of Council members. In this final reflection, we will review that exploration and discuss subjects that the Council intends to put on its agenda in the years ahead.

14.1 Need for improvement

In chapter 2 we saw that animal welfare matters a lot to people in the Netherlands. People feel that animals deserve a good life; many even argue that animals have a moral right to that. The survey results also clearly showed that, in the perception of the public, animal welfare has improved over the past years. However, the respondents also observe clear differences in animal welfare between different groups of animals, with test animals at the bottom and leisure animals at the top end of the scale. Livestock and animals in the wild are felt to be somewhere in between.

In their reflections and essays in chapters 2 through 13, the Council members subscribe to the view that animals are better off today compared with 25 years ago. Today there is more attention and care for virtually all animal species. In principle, animals also enjoy more legal protection, with the possible exception of a number of test animal species not listed in the law, and animals in the wild. There is more awareness of animal welfare and health among professional animal keepers and the public. Owners are also increasingly prepared to pay for the care of their animals.

Even so, we believe that further welfare improvements are necessary for all animal groups. To a certain extent, animal welfare and health issues are a structural consequence of the way in which we keep animals – i.e. of our systems. In addition, welfare objectives are moving targets due to the constant evolution of knowledge

and insights. As described in the introduction, a range of groups, organisations and individuals in society frequently denounce the circumstances in which animals are kept, the ways in which we live with animals and how we use them. This permanent criticism from within society at large emphasises the need for improvement.

Animals in the wild

The reflection and essays on animals in the wild have shown that our advancing knowledge of ecology and animal behaviour is also increasing our understanding of how to safeguard the welfare of animals in the wild. In this context, we have to weigh the welfare of an individual animal against the welfare of other animals in its population (or in its ecological community) when considering an intervention. The welfare of animals in the wild is an increasing focus of attention among the general public and policymakers alike. However, people do not treat all animal species equally. The welfare and health of birds and large herbivores, for instance, attract a great deal of attention and are deemed very important. However, people are far less concerned about the health and welfare of ‘pests’ – mice, rats and a variety of insects.

We have also seen that opinions in society on how we engage with animals in the wild are strongly divided. Some people believe that intervention in nature is intrinsically wrong, while others argue that we humans are responsible for the well-being of animals in the wild. The resulting moral frictions often arise from a lack of knowledge or from outdated scientific insights, with potentially harmful consequences for the welfare of the animals concerned. In addition, there are concerns about the pressure on the environment in which animals live, and about the alarming decline that has been observed in many insect and bird species. To ensure the survival of these animals, it is crucial that measures be taken to create habitats of sufficient size and quality. Concerns over the welfare of individual animals and groups of animals increasingly overlap with concerns over the loss of entire ecosystems.

Farm animals

The reflection on farm animals explained how the livestock farming sector, after two world wars, gained economic strength via a strategy of maximum volume, maximum efficiency and minimum costs. This intensive livestock farming system had unintended adverse effects on animals, the environment and biodiversity. Views

have evolved over the past 25 years, resulting in noticeable welfare improvements for farm animals. For example, veal calves are now housed in groups, and roughage has become a fixed component of their diet. Dairy cows have been given much more space to move in open housing systems. Sows are now kept in groups, have more space per animal and more stimuli to prevent boredom. The standard practice of castrating male pigs has been abandoned. Laying hens may no longer be kept in battery cages, and the practice of beak-trimming has been banned. Due in part to the health and welfare requirements that it must meet as a major export country, the Netherlands now has one of the healthiest animal populations in Europe.

Even so, we should not be complacent. The various livestock farming sectors continue to struggle with both persistent and new animal welfare issues. Examples include physical interventions such as tail-docking, problems caused by cramped housing, boredom due to lack of stimuli, morbidity and mortality of young animals, long-distance transports and issues associated with social behaviour. Making the necessary improvements to the current livestock farming system will prove a difficult task. A range of developments are under way to further improve the welfare of farm animals. These include quality labels for more animal-friendly food products and embedding animal welfare as a criterion in quality systems. The livestock farming sector is also being asked to adapt to the transition towards circular agriculture. This also offers opportunities for structural improvements in animal welfare and health. It is essential that animal health and welfare take centre stage.

Companion and hobby animals

The reflections on companion and hobby animals have shown that marked improvements in welfare and health have been achieved thanks to increased professionalism among the actors involved and increased knowledge on animal keeping and breeding. Companion animals are increasingly seen as family members, and are part of the identity of those who own them. As such, they are very near to our emotions – our happiness and worries, passions and grief. In many cases these emotions will keep us alert in monitoring the welfare and health of these animals. However, these emotions also increase the risks of anthropomorphism and of fashion fads that ignore animal dignity. They prevent us from reflecting on our own behaviour, as a result of which our decision to buy an animal is less balanced than would be desirable from an animal welfare perspective.

Chapter 5, moreover, showed us that the Internet has had positive effects on animal welfare, thanks to enhanced opportunities for accessing, assessing and exchanging knowledge on online forums and the like. We should not ignore the negative aspects, however, such as unreliable information and online trade that goes largely unsupervised. And even if knowledge is available, there is no guarantee that it will be used. Wherever people organise themselves and collaborate, in the companion or hobby animals segments, they tend to keep each other alert, correct each other and more easily distinguish between facts and fiction. In the years ahead, ethical issues will also demand our attention. These include the killing of healthy animals (e.g., animals in a shelter for which no new home can be found), the growing internationalisation (illegal trade in dogs) and the risk of zoonoses.

Animals in zoos, animal parks and shelters

Chapter 6 described the process of zoos organising themselves in partnerships to exchange knowledge about keeping specific types of animals and, ultimately, to do justice to the specific nature of the species they keep. Animal enclosures are becoming ever more spacious and more diverse. Zoos also increasingly tend to co-house different animal species that share the same habitat in nature ('eco-displays'). The demands imposed by individual species now play a more prominent role in how zoos – especially the larger ones – select species for their collections. Given the strong growth in the number of smaller zoos, animal parks and animal shelters, it is important for these establishments, too, to professionalise through collaboration. Ultimately, the animals will benefit. However, given that zoos are – also – commercial enterprises that need to keep costs low, safeguarding animal welfare is part of a precarious balance that needs to be constantly monitored. This also extends to licensing decisions and to ethical issues surrounding the killing of surplus animals or of animals for which no new home can be found.

Test animals

The welfare of test animals shows an upward trend. This is because the number of test animals used is falling and more species now come within the scope of test animal legislation. There is more attention for the welfare of test animals, thanks to new legislation and to the increased professionalism of the parties directly involved. One further positive development is that the discomfort inflicted on test animals is expressly weighed against the purpose of the study. However, the Council is of

the opinion that more attention should be devoted to the housing and care of test animals before, during and after the tests. It is also necessary to ensure better protection for all animals used in experiments, because animals not covered by current legislation (most invertebrates) may also experience discomfort, and have an inherent value.

14.2 The animal as a partner

In addition to improvements in the health and welfare of animals, a shift can be observed in the position of animals in our society. In the past, animals were largely seen as means of production (e.g. to provide labour, milk, meat and eggs), with humans acting as their owners and rulers. Then the role of humans clearly evolved: the rulers became stewards and treated their animals with more care and respect. More recently, in large parts of society animals have acquired a new role: that of partner. A very large majority of people concur that animals have an inherent value and, as such, have a right to live. While three quarters of respondents think that humans are superior to animals, humans are no longer the ‘rulers’. Instead, they have assumed a role that varies from that of a steward to that of a partner. Animals have become our partners as co-inhabitants of the planet, companions in our lives and elements in a shared ecosystem. Humans are increasingly empathising with animals and point out that animals may have rights, such as the right to live in dignity and the right to proper care.

Citizens’ views on our relationship with animals are shifting – slowly but unmistakably (chapter 2). Our role as boss and ruler is gradually being replaced by one characterised by commitment and acceptance of the specific nature of animals in populations (chapters 3 to 7 inclusive). There is a growing awareness that animals and humans, in their mutual dependence, are both essential parts of a sustainable ecosystem (chapter 3). This explains why there is less and less tolerance for violations of animal welfare – both among the general public and among government authorities (chapter 13). Figure 1 visualises this evolving attitude regarding the position of animals in our society, using a system of coordinates representing value versus utility.

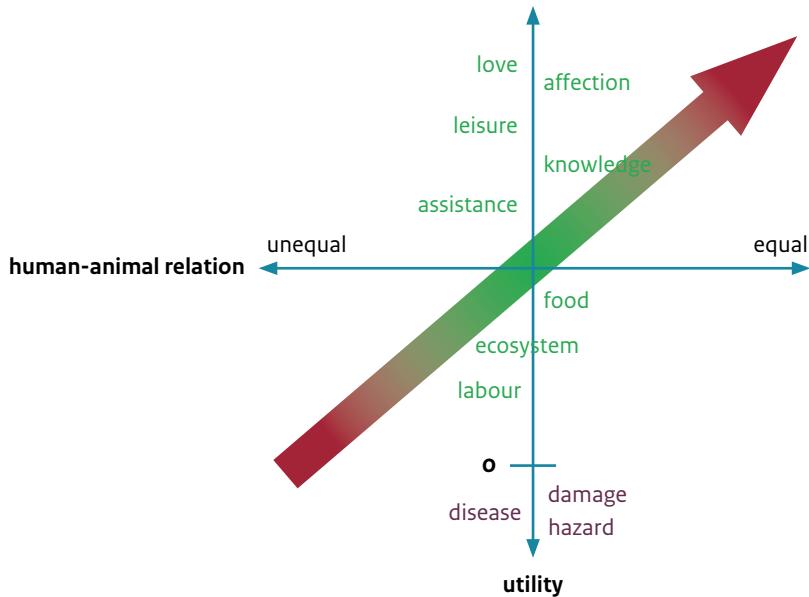


Figure 14.1: Graphic representation of the changing position of animals in our society. The arrow indicates an upward shift (higher utility) towards the right (higher value). The two extremes (bottom left and top right, in red) are considered to be undesirable. The horizontal axis is the value axis representing the assessed value of animals relative to humans. This axis runs from a situation in which animals are regarded as objects (on the left) to one of equality between humans and animals (on the right), with a position recognising the animal's inherent value in the centre. The vertical axis is the utility axis representing the utility of animals for humans. This axis runs from negative utility (due to fear, disease or damage; bottom) to a positive contribution (due to perceived affection and love; top). The central part of the axis represents a situation in which animals are used to provide labour, as part of the ecosystem, as assistance animals, as animals that serve as food, for knowledge or for leisure.

The same animal group or species may appear at different points in the diagram in Figure 1. For example, rabbits can be seen as a source of food, but they also frequently kept as companion and hobby animals. The direction of the trend arrow indicates that attitudes regarding the role of animals are shifting (from bottom left

to top right), while the colours of the arrow reflect the Council's concerns about the extreme positions (bottom left and top right). As such, the arrow suggests it is positive that views regarding the position of farm animals are shifting from the left to the centre (chapter 4). It also suggests, however, that excessive anthropomorphism with respect to companion and hobby animals should be critically examined (chapter 11), and that the position of this group of animals should not move too far to the right to avoid impairing the animal's specific nature. Another example is the changing position of animals in the wild, which is a large group. Take insects: they are moving from a position far on left of the horizontal axis, and negative utility, to a position where they are appreciated as an essential part of our ecosystem (chapter 3).

However, there are limits to the partnership. While 80% of respondents in the public survey declare that animals have a moral right to live, approximately 95% regularly eat meat and many respondents feel, for example, that mice can be killed if they damage people's possessions. When human health is at stake – think of malaria mosquitoes, or goats spreading Q fever – killing animals is much less of a controversy. We do however observe growing resistance to large-scale culling of animals.

Moral involvement and indignation among citizens are growing, sometimes resulting in fierce debates in the press and (social) media. Examples include the debates on mortality among calves, mega-stables, large herbivores in the Oostvaardersplassen reserve, the use of test animals, and the breeding targets and health issues in companion animals. The Council advocates an approach that steers clear of both instrumentality (the animal as an object) and excessive anthropomorphism (the animal as a human being). As our guiding principle we should take an animal for what it is: an animal, and respect its natural behaviour and needs. In doing so, we should rely on scientific insights into the differences and similarities between species within the immense diversity of the animal kingdom. A crane is not a pig, and a dog is not a honey bee. It is important for us to remain firmly aware of our dependence on properly functioning ecosystems. Animals perform an integral part in those ecosystems, and there is a growing body of opinion that it is our moral responsibility to respect their welfare as they do so. This means that we will have to radically rethink our food production systems. The interests of animals must be taken seriously, and ultimately that is what most people want. In the transition of our food supply system towards circular agriculture, animal welfare should take centre stage.

14.3 Points for attention in the years ahead

The Council on Animal Affairs operates in a social environment where there is a constant threat of polarisation. This is an obstacle to the development of a healthy dialogue. Such a dialogue would do justice to the scientific facts about animals, while also acknowledging social and ideological views. Incidentally, in chapter 2 we found that the answers to most questions in our public survey revealed a relatively large middle segment that was less outspoken. That middle segment is not reflected in the fanaticism with which many people express their opinions in social media and protest campaigns. Indeed, those are the environments where the polarisation is the most obvious.

As the position of animals in society is shifting, so is the agenda of the Council. Through that agenda, the Council aims to play a connecting role, clarify the partnership between humans and animals and offer advice on how animal welfare and animal health might be improved. In the years ahead, the Council will also explore the changing position of animals in society and in our ecosystem. The Council will then use its findings to inform its advisory reports on animal affairs. As a first step in that direction, below we will discuss the human-animal relationship for each of the various animal groups.

Animals in the wild

Framing animals as ‘vermin’ is no longer acceptable.

So far, the growing attention for the welfare of animals in the wild is not always reflected in the legal protection offered to species and individuals. On the contrary: that legal protection has diminished since the Nature Conservation Act was introduced in 2017. The debate on how we deal with nature in the Netherlands will also, eventually, result in adjustments to the management of animals in the wild. In the process, the duty of care for animals may sometimes be at odds with the ‘hands-off’ approach with respect to animals in the wild. The debate about the Oostvaardersplassen has taught us to take a new look at that dilemma. We need to design new nature conservation frameworks that make it clear when to supplement the protection of populations and ecosystems with the protection of individual animals. According to the Council, this is an issue that requires attention in the years ahead.

In addition, there is a need for a broad debate on the survival of animals in Dutch nature, with a special focus on the size and quality of habitats. Striking a reasonable balance in dividing existing space between the needs of urbanisation, infrastructure, agriculture and nature will be a subject of permanent social debate in the years ahead. In this context, there is growing attention for the pressure on land use, the environmental effects of livestock farming, multifunctionality and the increasing scarcity of space. As such, the care for animals in the wild has largely become care for populations. Choices as to which animals we should or should not protect or introduce and (the limits to) biodiversity in our man-made ecosystems will remain part of the public debate in the years ahead.

One important component of the care for populations and ecosystems is the debate on animals which are currently regarded as pests. Think of insects that spread diseases, beavers and muskrats that damage our dams and dikes, oak processionary caterpillars causing severe itching in thousands of people, and mice or rats spreading pathogens and damaging property. Animals termed ‘pests’ deserve better than the name suggests, as many of these animal populations are known to perform crucial roles in the ecosystem. For example, insects are an essential source of food for birds and certain mammals, as well as a crucial factor in the reproduction of plants. If population control is inevitable – as it is in the case of invasive exotic species, for example – it is important to opt for more animal-friendly methods.

Farm animals

‘The livestock farming sector should bring about structural improvements in animal welfare and health, and circular agriculture can offer opportunities to do so.’

Some animal welfare issues have been around for 25 years, such as physical interventions in animals, boredom among animals, cramped housing, mortality among young animals, the importance of social housing systems and the quality of life during transport. All these issues require constant attention. In addition to these existing issues, current concerns in society such as climate change will leave their mark on the position of farm animals. In this regard, we should make an effort to find out how to best integrate animal welfare and animal health in circular agriculture.

In the Council's opinion, animal welfare and animal health do not receive the attention they deserve within the context of major issues such as climate change and food security. The Council is concerned that a drive towards more efficient utilisation of scarce resources might push the need for structural improvements to animal welfare and health into the background. Recent initiatives such as the 'Better Life' label, 'On the way to Planet Proof' and Kipster and Hamletz have shown that it is possible to increase the focus on animals in milk, meat and eggs production. All these changes are also limited by economic reality and the willingness of consumers to pay the higher production costs associated with the quality label requirements. The shift towards circular agriculture will create space for innovations and designs in which the welfare and health of animals take centre stage. In this transition, the Netherlands could serve as a pioneer and guide.

Companion and hobby animals

'A bed is no place for a dog.'

The situation of companion and hobby animals has greatly improved over the past 25 years, thanks in part to the increased professionalism in health care for these animals. Nevertheless, the need for critical reflection remains, as regards interventions in these animals, commercial breeding, hereditary disorders in purebreds, selection for extreme features and health risks posed by the co-habitation of humans and animals (such as obesity and zoonoses). Our increased knowledge of animal behaviour has spurred measures to combat boredom among, for example, horses, zoo animals, and dogs and cats in urban settings. In addition, there is a growing debate about the need to draw the line between what is and what is not acceptable in the relationship between companion and hobby animals and humans. Companion animals are regarded as members of the family and have assumed the role of friends and playmates and, in some cases, even of children and life partners. Partnership as understood by the Council also means accepting the specific nature of animals, including their behaviours and needs. The main issue is that we should regard and respect the animal as an animal. In the years ahead, there is a task for the Council in clarifying the critical recognition and affirmation of the specific nature of animals. In addition, in the age of the Internet the Council may help citizens and governments to distinguish facts from fiction.

Zoo animals

‘A zoo is not just for fun’

Attracting over ten million visitors a year, zoos enjoy considerable social support. It is important that they do, as they need considerable funds to keep animals in suitable locations and large enclosures. In addition to earning income from admission fees, zoos are quite creative in providing a variety of services (catering, merchandising, play facilities for children, animal shows etc.) to ensure a pleasant and relaxing day for visitors and earn extra income. They do so in a competitive market in which they need to monitor the balance between supply and demand. If they don't, they risk seeing their *raison d'être* marginalised and make way for types of entertainment that could also be provided without animals. In view of the growing awareness in society that the habitats of many animal species are under pressure, more emphasis should be placed, going forward, on the role of zoos in protecting those habitats and in sensitising visitors to this issue.

Test animals

‘Experiments on animals are animal experiments, whether legally defined or not.’

In the years ahead, more attention will have to be devoted to the housing and care of test animals before, during and after the experiment. It would be helpful, in this regard, if it were made easier for researchers to publish test animal-free studies in peer-reviewed journals without supplementary animal testing, if such testing is not necessary. The same applies to experiments for which no test animals were used. There is also a need for better protection of invertebrates that fall outside the scope of current legislation. The boundaries set by the legislator no longer suffice.

14.4 Actions that the Council itself will take

In the introduction we mentioned several reasons why some citizens are critical of the way in which society deals with animals. Those reasons include the compromises we allow in the conditions in which we keep animals, technological innovations that force us to safeguard the position of animals, disease control without regard for the interests of animals, our evolving understanding of the natural characteristics and needs of animals, and the growing respect for animals. In addition, having evolved from ruler to steward to partner of animals, we no longer take our own superiority for granted.

This is why the Council believes it is necessary to recalibrate our ‘covenant’ with animals. In doing so, says the Council, the needs of the animal should be our first priority. Our central focus, therefore, is on the welfare and health of animals. In this context, it is important to find out what scientists can teach us about the needs of animals. We should critically examine our current systems, especially for any obstacles they pose to improving animal welfare and health. We need to arrive at a more precise view of a number of moral frictions. Under what circumstances is it permissible to kill animals? When is it justified to change the genetic material of animals using advanced DNA techniques? How can we strike a proper balance between ecology and technology? Is it necessary to draw a line between what is and what is not acceptable in the relationship between companion or hobby animals and humans? How important is the specific nature of animals in this regard? And how should we define our duty of care versus the hands-off approach as regards animals in the wild, including nuisance animals?

The Council intends to repeat the public survey periodically in future. In the years ahead, the Council’s agenda will feature the topics listed below per animal group. Each of those topics has already been discussed in more detail in the previous chapters.

General

- The role of new techniques in animal breeding, the dignity of ‘design’ animals, considerations regarding the use of CRISPR-Cas and similar techniques;
- The killing of animals, the conditions under which this is permitted and how;
- Health and mortality among young animals;
- The welfare and health consequences of anthropomorphism;
- Animal welfare within and among the different levels of government: national, provincial and municipal;
- The position of animals in circular agriculture, both farm animals and animals in the ecosystems involved.

Animals in the wild

- The welfare of animals and animal populations in Dutch ecosystems;
- The position in the ecosystem of non-captive animals and animals currently regarded as pests.

Farm animals

- Design requirements for new livestock farming: identifying criteria for the success of concepts that aim to achieve high levels of animal welfare and health, based on the animal's own needs;
- Climate policy and the impact of climate change on the health and welfare of animals;
- The use of ICT in livestock farming: the benefits and risks of sensors and further digitisation of businesses.

Companion and hobby animals

- Explore the boundaries in the relationship between companion or hobby animals and humans;
- Addressing obesity among companion and hobby animals;
- The welfare and health of animals involved in sport and leisure activities.

Zoo animals

- Examine the conditions governing the licensing of zoos to the extent they relate to animal welfare and contribution to the protection of wildlife.

Test animals

- The protection of all animals that are used as test animals, and examining why the different animal groups are still differentiated;
- Drawing attention to the housing and care of test animals before, during and after the experiment.

The debate on all of these topics should involve all the relevant parties: NGOs, the business community, the scientific community and all levels of government. The tools used by the Council include the solicited and unsolicited advisory reports that it publishes, and the conceptual and assessment frameworks that it has drawn up. The Council may also decide to launch a public debate and call for Dutch citizens to contribute. In doing so, the Council aims to promote balanced decisions and compromises, today and in the future. Clearly, there is no shortage of work for the Council in the years to come. We look forward to continuing our dialogue with you in the process.

Publication details

This publication of the Council on Animal Affairs was prepared by a core team comprising Jacques van Alphen, Hans Hopster, Jan Staman, Hans van Trijp, Monique van der Gaag, Rosanne van Oudheusden, Tamara Bergstra and Marc Schakenraad, and led by Ynte Schukken. Editor: Linda van den Berg.

The various chapters are based in particular on contributions from the following members, former members and team members of the Council:

1. Achieving progress by practicable means: Jan Staman, Ynte Schukken, Hans Hopster, Marc Schakenraad
2. The state of the animal in the Netherlands: public perspectives among Dutch citizens: Hans van Trijp, Hans Hopster, Gé Backus, Bert Urlings
3. Living together without boundaries: Jacques van Alphen, Andreas Dijkhuis, Geert de Snoo, David van Gennep, Hans Hopster, Rosanne van Oudheusden
4. Towards a circular agriculture with respect for animal dignity: Hans Hopster, Han Swinkels, Leo den Hartog, Bert van den Berg, Jeannette van de Ven, Monique van der Gaag
5. Pets, passion and professionalism: Hans Hopster, Renée Hoyneck, Gerrit Hofstra, Gijsbert Six, Ruud Tombrock, David van Gennep, Rosanne van Oudheusden
6. Funny old birds, for our education and enjoyment: Hans Hopster, Renée Hoyneck, Gerrit Hofstra, Gijsbert Six, Ruud Tombrock, David van Gennep
7. Best regulated of all? Jan van der Valk, Franck Meijboom, Jan Staman, Monique van der Gaag, Hans Hopster
8. Nature: a fairy tale?! Jacques van Alphen
9. Licence to kill: Len Lipman, Franck Meijboom
10. Godwits or cows: Ynte Schukken
11. Animals are just like humans: Jan Staman
12. Tinkering with animals: Martien Groenen
13. Animals and regulations: Rosanne van Oudheusden, Léon Ripmeester, Marc Schakenraad
14. From ruler to steward to partner: Ynte Schukken, Jan Staman, Hans Hopster, Marc Schakenraad

Composition of the Council on Animal Affairs

The Council on Animal Affairs is an independent council of experts that provides the Minister for Agriculture, Nature and Food Quality with solicited and unsolicited advice on multidisciplinary issues in the field of animal welfare and health. The Council comprises scientific experts and professional practitioners, who serve in a personal capacity, are independent and not bound by any instructions. The draft version of this publication was submitted to the full Council for review. This publication is a product, therefore, of the Council on Animal Affairs as a whole. The Council consisted of the following members effective 1 January 2019:

Council on Animal Affairs:

Prof. J.J.M. van Alphen
Dr G.B.C. Backus
Drs G.P. van den Berg
Drs W.T.A.A.G.M. van den Bergh
Prof. I.J.M. de Boer
Drs Mr H.R. Chalmers Hoyneck van Papendrecht
Mr A.G. Dijkhuis
Dr N. Endenburg
Prof. J.W. Erisman
Drs D. van Gennep
Prof. M.A.M. Groenen
Prof. S. Haring
Prof. L.A. den Hartog
A.L. ten Have-Mellema
Prof. J.A.P. Heesterbeek
Drs G. Hofstra
H. Huijbers
Prof. A. van Huis
Prof. B. Kemp
A. Kemps

Dr L.J.A. Lipman
Dr F.L.B. Meijboom
Drs F.E. Rietkerk
Drs C.W. Ripmeester
Dr M.C.T. Scholten
Prof. Y.H. Schukken
Ir. G.C. Six
Drs M. Slob
Prof. G.R. de Snoo
Drs J. Staman, LLM, chair
Dr J.W.G.M. Swinkels
Drs R.A. Tombrock
Prof. J.C.M. van Trijp
Dr H.A.P. Urlings
Dr J.B.F. van der Valk
Drs F.A.L.M. Verstappen
J. van de Ven

Secretary of the Council is Ir. M.H.W. Schakenraad.

For more information about the Council on Animal Affairs, please visit our website (www.rda.nl), where you can also download all previous advisory reports.

