



MINDING OTHERS

Beyond an anthropocentric understanding of
sustainable development

Natalie S. Herdoiza Castro

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Beyond an anthropocentric understanding of
sustainable development

**Op anderen letten
Voorbij een antropocentrische visie op duurzame
ontwikkeling**

(met een samenvatting in het Nederlands)

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*To all sentient beings everywhere– May you be happy, safe, and free
from suffering.*

Table of Contents

Contents		7
Chapter 1	Introduction	9
Chapter 2	The path towards food sustainability: a moral perspective	33
Chapter 3	The expanding moral circle as a framework towards food sustainability	61
Chapter 4	Including animal welfare targets in the SDGs: the case of animal farming	87
Chapter 5	Three perspectives to integrate the interests of non-human animals into the UN sustainable development agenda	125
Chapter 6	Conclusions	155
Summaries		175
Acknowledgments		185
About the author		187
Author's publications		189



**"There are no passengers on
Spaceship Earth. We are all crew."
—Marshall McLuhan**

Chapter 1

Introduction

1.1 Background

Barriers to achieving sustainable development

Inhabiting a planet with limited natural resources and an ever-growing human population, humanity has sought strategies to cope with this mismatch. Sustainable development has been deemed as the predominant global answer to tackling this challenge without compromising the growth and flourishing of current and future human populations (Bruntland 1987). According to the main understanding of sustainable development, the discrepancy between declining natural resources and a growing demand for these resources must be addressed in a way where present human needs are met without compromising the needs of future human generations. In 2015 the United Nations approved a plan of action, intended to lead humanity towards sustainable development based on five critical dimensions: people, prosperity, planet, partnership, and peace. This proposal is known as the 2030 Agenda for Sustainable Development (2030 Agenda), a pledge of the United Nations member states to eliminate extreme poverty, reduce inequality, and protect the planet from environmental degradation (United Nations 2015). Concurrently, a framework consisting of 169 targets included in 17 Sustainable Development Goals (SDGs) delineates the focus areas required to complete the 2030 Agenda.

The 17 SDGs help to translate the fundamental ideas and ideals of the 2030 Agenda into tangible and quantifiable outcomes (UN 2015). They are constructed as a framework that deeply connects the social, economic, and environmental aspects of the goals and secures this construction across time, to ensure that the short-term attainment of enhanced human well-being does not come at the expense of compromising well-being in the long run (Stafford-Smith et al. 2017). They are also designed to be cohesive and supportive of one another, realizing that advancement in one area depends on advancement in others (Pattberg & Bäckstrand 2023). Hence, while the SDGs are meant to tackle some of the most pressing societal and human rights issues such as poverty, inequality, and hunger, they also recognize that all life on Earth depends on the preservation of biological diversity and the flourishing of the natural environment. Considering that the environment and every kind of life on land, sea and air are in acute crisis (Teixeira et al. 2023), achieving the SDGs is of

utmost importance, to safeguard the integrity of human and non-human species and to secure a liveable planet for current and future generations.

Following the launch of the SDGs in 2015, some early advances were made in the areas of economy, social equality, and environmental protection. Nonetheless, the latest United Nations Sustainable Development Goals Report (2023) states that “too much of that progress was fragile and most of it was too slow” (p. 4). Hence, while the deadline established for the completion of the 2030 Agenda is quickly approaching, most of the SDG’s targets are off track and some have regressed below the 2015 baseline (United Nations General Assembly 2023). Recent research (Arora & Mishra 2019) reveals, amongst other obstacles, a decline in species biodiversity, an escalation in air pollution, alarming rates of species extinction, massive land desertification, increased habitat fragmentation, a rapid acceleration of climate change, major loss of forest cover, increase in food waste and malnourishment, continuous lack of access to clean water and sanitation, dismal growth in access to sustainable and clean energy, and considerable increases in fossil fuel consumption. Based on these indicators, (Arora & Mishra 2019) argue that the achievement of most SDGs is lagging far behind; hence, humanity is facing a “race against time” in the search to attain the SDGs before the year 2030.

Several critical studies in sustainability science discuss the underlying roadblocks that have steered humanity in the opposite direction to sustainable development in the last decade, threatening the possibility of completing the 2030 Agenda as planned. These range from persistent inequitable access to education in rural and developing regions (Arkorful et al. 2019); governmental and industrial prioritization of economic growth over ecological sustainability (Pettini & Musikanski 2023); low levels of investment in renewable energy in developing countries (Aydos et al. 2022); global and regional conflict (Pattberg and Bäckstrand 2023); failure of governments and the private sector to invest in sustainable development (Biglari 2022); and notably, the consequences of the COVID 19 pandemic, which disrupted a significant number of the established efforts for advancing towards the completion of the 2030 Agenda and undermined some of the progress already made (Fenner & Cernev 2021).

The aforementioned social and environmental issues have intensified under the current form of global neoliberal capitalism, which is essentially the outcome of the capitalist system that relies on eternal growth (Koch & Buch-Hansen 2021). Much of the developing world, as well as the developed world, have adhered throughout the past few decades to a limited and potentially dangerous concept of progress that calls for the unceasing expansion of economic production and consumption (Crownshaw et al. 2019). Amidst numerous grave crises, including ecological and climatic emergencies, some advocate for a post-growth society, calling for democratic transitions towards communities that may flourish beyond economic development while adhering to ecological boundaries and maintaining social equity (Koch & Buch-Hansen 2021). However, even while it is widely acknowledged that human activity is causing climate change, biodiversity loss, and other serious ecological problems linked to the fast expansion of human societies, the possibility and need of an end to economic growth has not yet effectively permeated the public mind (Crownshaw et al. 2019).

One of the main reasons why the ecological component is frequently disregarded in the mainstream socio-political discourse is that it prioritizes humans and their conceptions over the effects of biophysical entities on social systems and vice versa, putting humans and their constructs at the centre of the universe (anthropocentrism) (Koch & Buch-Hansen 2021). Accordingly, some (e.g. Cielemeńska & Daile 2019, Kopnina et al. 2018) have deemed the anthropocentric nature of the conception of sustainable development as one of the main obstacles to achieving the change and commitment needed to make significant advancements. Even though anthropocentrism has multiple definitions, at its core, it refers to the subjection of non-human organisms on a planetary scale, negating their inherent worth (Kopnina 2018). According to Rupprecht et al. (2020), the anthropocentric understanding of sustainable development overlooks the fact that other living beings are also actors who are misrepresented and discriminated, being considered only when they represent resources or are instrumental in the fulfilment of the needs of human beings. This is reflected in the most accepted definition of sustainable development: “meeting the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland 1987 p.16): which exclusively refers to present and future human populations.

While the launch of the 2030 Agenda and the SDGs advanced the discussion about the creation of a better world, with emphasis on some values (e.g., human rights, justice, human health, and well-being); other important non-anthropocentric values have been overlooked. This absence exhibits a disregard for the interdependence between humans, non-human animals, other living beings, and the environment in the sustainable development discourse. Hence, some scholars (e.g. Imran et al. 2014, Twine 2020) argue that new approaches to theorizing sustainable development are required considering the unprecedented scope of the environmental crisis caused by humans. Cielemecka & Daile (2019) contend that there is no question that human activities harm non-human communities. However, there are alternative conceptions of human habitation that view humans as agents of support for nature's vibrant ecologies rather than as destructive forces (Cielemecka & Daile 2019). These approaches should reject anthropocentrism and human exceptionalism in favour of concentrating on creating environmentally responsible projects that are appropriate for the challenges faced by humanity in present and future times (Cielemecka & Daile 2019). In line with this perspective, Imran *et al.* (2014) propose that the foundation for redefining sustainable development principles should be a decision on the subject that places equal emphasis on ecological and human well-being.

To prioritize both ecological and human well-being, it becomes imperative to investigate specific non-anthropocentric points of view in the context of sustainability science and governance. Some of the most well-discussed non-anthropocentric approaches to sustainable development are based on three ethical perspectives: sentientism (non-human animals that are capable of feeling pain and suffering are valuable in and of themselves.); biocentrism (because each organism has an inherent worth connected to its well-being, all living things are valuable), and ecocentrism (because they may be viewed as distinct entities and because they have the power to support life and well-being in terms of their integrity, stability, and beauty, ecosystems and species have intrinsic value) (Kronlid & Öhman 2013). Each one of these perspectives highlights the necessity of considering the inherent worth of different categories of non-human entities, regardless of their instrumental use for humans.

Going beyond anthropocentrism, and embracing the moral worth of non-human entities, could be one of the missing keys to counteract the roadblocks that have derailed humanity from the path towards sustainable development. Ultimately though, as actors of change, humans—individuals and collectives—must determine what and who matters in the pursuit of sustainable development. Likewise, it is up to the public, which includes actors across all societal spaces and systems, to decide whether to adopt actions that can endanger or safeguard the survival of human and non-human life on Earth. Without this process of societal action, sustainable development will remain an effort of a few actors to solve urgent challenges, mitigate the damage done and preserve what little is left. Consequently, unless these issues are addressed, humanity will probably never find a true cure to unsustainability, and instead, will keep treating the symptoms rather than the underlying causes of the disease.

The role of actors of change

The role of individuals and collectives and how they interact with other members of society, non-human animals, other living beings, and nature has important implications for sustainable development. The degree to which people use the already finite natural resources on Earth is determined by their lifestyles and actions. Therefore, to achieve sustainable living, actors must be involved in pro-environmental behaviour and support pro-environmental policies (Bratanova et al. 2012). Numerous studies have been conducted on the value foundation of environmental concern and pro-environmental behaviour (e.g., Stern and Dietz 1993; De Groot and Steg 2007). The norm activation theory (Schwartz 1977) states that the activation of a personal moral norm is a significant precondition for pro-environmental behaviour. According to Nordlund and Garvill (2002), this activation occurs when an individual believes that environmental issues are endangering something they value, such as nature, other people's well-being, or their own well-being. Additionally, treasured ideals held by each individual contribute to personal responsibility, which is felt as a moral duty to take action to defend that which is threatened (Hards 2011).

Still, there is growing recognition that individual attitudes and behaviours alone will not suffice to bring about the actions required to influence sustainable development

outcomes; instead, the perspectives and values of the collective must be prioritized (Bowen et al. 2017). Alternative and more sustainable approaches to meeting human wants and needs may require more collective and community-based solutions (Peattie 2010). For example, consumer activism can arise from the combination of collective action and deeply held consumer ideals. This is exemplified by social movements that work to change different aspects of the marketing and consumption-related social structure (Kozinets & Handelman 2004). Moreover, commonly held moral ideals and values also play a role in positive sustainable action. An example of this is described by Shaw & Newholm (2002), who noted the emergence of alternative communities founded on shared values and beliefs, which people join with the explicit aim of adopting a lower-consumption lifestyle. Furthermore, commonly held values can also involve positive collective responses in the form of consumption “boycotts”, which are collective agreements to actively buy products from companies and countries in support of certain values or policies (Hawkins 2010). Hence, collective action, with the participation of a broad range of actors, has the potential to ignite positive change towards the implementation of the SDGs (Bowen et al. 2017).

In a call for action for sustainable development, Gruen & Loo (2014) argue for a more involved approach, noting that, as individuals and communities explore their responsibility in the creation of certain harms, they also have the opportunity and incentive to re-think the actions they can take to prevent or diminish these harms. Meijboom & Brom (2012) contend similarly, that when someone recognizes an ideal, it is obvious that they wish to live up to it; as a result, this introspective process may entail duties and serve as a morally guiding principle. This process could have an important role in the activation of sustainable behaviour. For instance, previous research suggests that individual differences in the set of beings included in people’s moral scope are a dominant predictor of sustainable decision-making (Laham 2009; Bratanova et al. 2011). Bratanova et al. (2012) argue that the more natural entities people feel morally concerned for, the more motivated they would be to engage in activities aimed at protecting the environment and hence the welfare of these entities.

Ultimately, fostering more inclusive moral ideals might be an important step in the process of igniting sustainable action. Notwithstanding, it is worth noting that recognizing the moral worth of another entity is more important when it is accompanied by a pledge to uphold or implement those moral rights (Crimston et al. 2018). Yet, the human tendency to draw moral boundaries is pervasive and varies considerably depending on individual and collective views and values (Laham 2009). Consequently, some entities are inevitably left outside the scope of moral consideration of individuals, communities, and nations; and, hence, are secluded from legal and political consideration and action, subjecting them to appalling treatment with slight or no attention to their interests (van den Berg 2012). Therefore, the presence or absence of certain moral principles can both inspire more sustainable behaviours and result in unsustainable actions or conversely sustainability inaction.

The role of moral ideals in guiding sustainable action

In their work, Meijboom and Brom (2012) discuss the role and value of moral ideals in the sustainable development debate. Sustainable topics are frequently discussed in the context of technical arguments about subjects like supply chain management, life cycle assessments, and climate change scenarios. Given that these intricate evaluations or scenarios involve several value assumptions and make use of notions like risk, safety, health, and welfare—all of which demand more than just technical proficiency—morals are clearly involved in these discussions (Meijboom and Brom 2012). Therefore, redefining sustainable development from a moral perspective can offer a framework for reference to guide people's actions and interactions with the environment as well as to define the domains of decision-making that are incorporated into the ideals of sustainable development (Imran et al. 2014).

Van der Burg (2004) defines moral ideals as “values that are usually implicit or latent in the law or the public or moral culture of a society or group, which usually cannot be fully realized and which partly transcend contingent, historical formulations and implementations in terms of rules and principles “ (p. 29). According to Vermeir & Verbeke (2006), moral ideals influence decisively how we understand and pursue sustainable development; in fact, in postmodern society, the propensity to reflect on existing cultural values and norms can be an essential driver for change, particularly

concerning sustainable development issues. Yet, sustainable development initiatives, including the 2030 Agenda, lack, or include to a very limited extent, a moral perspective; and consequently, virtually disregard the suffering of sentient non-human animals, the instrumental use of other living entities and the relentless destruction of the natural world. Nonetheless, these are considered ethically relevant issues (Palmer et al. 2014), which are also important moral ideals that are increasingly of concern for at least a proportion of the public (Leach et al. 2023), and hence, they should be taken into consideration in the development of sustainable development instruments and agendas (Broom 2010).

When it comes to values and motivations for sustainable action, different logics of change could be at play. People might be driven to make shifts by a genuine moral concern for the interest of others (human and non-human), but also by new opportunities arising from sustainable development challenges (Hajer et al. 2015). Therefore, some people may view self-focused ideals, such as health, well-being, and financial gain as an opportunity to engage in sustainable behaviour, making them a practical means for encouraging more sustainable lifestyles. Nonetheless, according to Kopnina et al. (2018), self-focus alone is an inadequate basis for environmental concern and action, because self-focused motivations can only make a positive contribution in situations where humans are conscious of direct benefits to themselves. Ultimately, some people might recognize how sustainable action can benefit themselves, while others might be more aware of the impact of their actions on others. This highlights the need for a comprehensive approach that takes self-focused values into account but also considers concerns related to the interests of others.

Scholars have suggested that a holistic approach that considers the opinions, attitudes, and concerns of all possible actors may be necessary to maximize the transformative potential of change towards sustainable development (Hajer et al. 2015; Vinnari & Tapio 2012; Vinnari & Vinnari 2014). Yet, sustainable development guidelines and frameworks frequently aim to enhance governance-related practices while excluding or only partially addressing the possibility of change implemented by groups and individuals motivated by their own goals. This pattern is consistent with the conventional top-down strategy supported by the political community, what

Hajer *et al.* (2015) define as “cockpitness”, which ignores the accountability and capacity for change of other actors including people, businesses, and cities. Similarly, van den Born *et al.* (2018) argue that “rational,” economic terminology entirely dominates public discourse. (e.g., ecosystem services, value-added production, cost-benefit analysis, profits). While these instrumental discourses can be useful in reaching policymakers, the use of such –seemingly “objective”–terminology may hide important moral issues and discussions. Hence, a public discourse that respects individual values and commitments is also necessary to close the implementation gap (van den Born *et al.* 2018).

1.2 Challenges

Igniting commitment and reaching a consensus

Hajer *et al.* (2015) claim that contemporary society is anything but passive, calling it instead “energetic” while it is made up of multiple actors who have the willingness to act and effect positive change. But even if there is a level of individual and collective willingness from several actors to shift their lifestyles and make sustainable choices, a sizable segment of the human population continues to be unable, unwilling, or disengaged from their responsibility to combat unsustainable economy-driven and anthropocentric predominant tendencies (Kopnina 2015). According to Hajer *et al.* (2015), one of the reasons for this lack of engagement might be that most of the existing sustainable development frameworks do not necessarily speak to the wider public. Hence, “a new chapter in global governance, sustainable development needs to be reframed through SDGs that reflect diverse perspectives on sustainable development which can help mobilize a broader coalition of actors and thereby enhance the universal relevance of the SDGs” (Hajer *et al.* 2015 p. 1653).

One major driving force behind change, particularly regarding sustainable development concerns, could be the tendency of postmodern society to reflect upon established cultural norms and values (Vermeir and Verbeke 2006). Nonetheless, Kortenkamp and Moore (2001) state that it is more difficult to take environmental interests into account if those interests and their consequences are unknown or not immediately apparent. Therefore, one of the biggest obstacles for those promoting societal commitment towards sustainable development is figuring out how to

communicate these in a way that makes sense to a range of individual and collective perspectives. This could increase the likelihood that people will be able to tie these goals to their moral ideals and identify with them. Furthermore, by committing to enacting shared ideals, people might be more likely to establish common ground and reach a consensus (Wan et al. 2010).

The SDGs, like the sustainable development concept itself, are open to multifaceted interpretations, and the same is true for the underlying ethical implications (Keitsch 2018). There are divergent moral perspectives and multiple moral dimensions to the concept of sustainable development and to the understanding of what and who counts in the pursuit of sustainable development (Aiking and DeBoer 2004). This is a central challenge when attempting to create positive change, as the conflicting viewpoints and interests of the public could make obtaining societal commitment and reaching global consensus an intricate endeavour (Bova 2022). The same could be said concerning the development of policies and governance instruments, which are frequently also influenced by a diversity of value-based perspectives (Vinnari & Vinnari 2017). Hence, when discussing the sustainability of a system, the term "sustainable" refers to much more than only its operation or the availability of specific resources Broom (2010). Thus, a system may also be considered unsustainable due to negative effects on the environment, animal welfare, or public health. So, the objective should be to apply a wider range of viewpoints than those typically included in sustainable development assessments, with a focus on people, their values, motivations, involvement, and reality (Werkheiser & Piso 2015).

According to Bowen *et al.* (2017), fostering collective action through the creation of inclusive decision spaces for stakeholder interaction across many sectors and scales is one of the primary governance challenges in implementing the SDGs. While adding a moral perspective to the analysis and conception of sustainable development seems to be a suitable avenue to guide societal action and increase the likelihood of reaching consensus, there is a lack of integration and synergy among existing ethics and sustainability science approaches. Hence, when it comes to the creation and implementation of frameworks for sustainable development, sustainability science, and governance methods typically concentrate on top-down, factual, and technical angles, missing the opportunity to consider bottom-up and

moral perspectives, while ethics methods typically concentrate on normative and theoretical views without offering pragmatic and applicable models. Bridging the gaps between these fields is essential to igniting social change and consensus, as is figuring out how to convey the information to be used in real-world scenarios. Doing so could pave the way for the establishment of more integrated sustainable development guidelines and instruments.

1.3 Knowledge gap

There has been extensive research attempting to understand the underlying mechanisms that drive people to commit to and maintain sustainable attitudes and behaviours. Most proponents of sustainable development understand that a shift toward sustainable development requires adjustments to human values, attitudes, and behaviours (Leiserowitz et al. 2006). While it has been demonstrated that pro-environmental identity and values strongly predict pro-environmentalism, it is still unclear how the promotion of these traits may be accomplished in the first place (Bratanova et al. 2012). According to Kashima et al. (2014), environmental striving provides a potentially useful perspective on the promotion of environmental protection and improvement. Hence, it makes sense to foster environmental striving if it is a powerful motivator for a wide range of behaviours (Kashima et al. 2014). A major empirical study carried out in Europe concluded that people who feel committed towards nature dedicate their time and efforts to it because they feel connected to the natural environment, and it gives their lives meaning (van den Born et al. 2018). Accordingly, van den Born *et al.* (2018) argue that to maintain the motivation of highly committed actors, these principles should be recognized, acknowledged, and reinforced by governments as well as environmental organizations.

As previously stated, it has been suggested that holding a more inclusive moral scope can be a significant predictor of sustainable decision-making (Bratanova et al. 2012). However, not much has been investigated in science and policy about the possible implications of integrating more inclusive moral perspectives within sustainable development frameworks and governance instruments to spur societal action. According to Imran *et al.* (2014), “While environmental and social research have generated a large amount of information and data on how values and environmental

ethics relate to sustainable development, there are no studies that examine the missing links reflected in the terminology of the sustainable development definition that alienates it from its ecological ethos” (p 134). As noted by Rupprecht *et al.* (2020), at the moment, no visualization of sustainable development models incorporates the agency or interdependence of all living beings. Hence, there is a need to investigate whether in addition to self-focused and anthropocentric ideals like individual well-being, economic development, and social justice, other non-anthropocentric moral ideals, such as the interests of non-human animals or the protection of nature, can inspire a larger segment of the public to take action in the pursuit of sustainable development goals.

Although it is difficult to establish a sustainable development perspective that goes beyond the prevailing anthropocentric paradigm, certain attempts have been made to create more inclusive approaches that consider the interests of some non-human entities. Even though the research on this topic is still in its infancy, in recent years, some scholars have developed proposals to expand the definition and conceptualization of sustainable development towards non-anthropocentric viewpoints. Accordingly, some (Boscardin & Bosert 2015; Humphreys 2020; Rawless 2006), have called for a fundamental shift to include the interests of sentient non-human animals in the concept of sustainable development and/or in the SDGs framework. Meanwhile, others argue that the definition of sustainable development should be changed to a nature-focused-perspective, which refers to a system that is centred on nature and in which the welfare of the environment is seen as equal to the welfare of humans rather than as a subordinate factor (Verniers 2021; Imran et al. 2014).

While the above-mentioned work has sparked significant conversations on the need to include more comprehensive perspectives in the understanding of sustainable development, more technical and normative methods have typically taken precedence over a pragmatic assessment of the applicability of such approaches. This absence creates an opportunity to integrate and expand these efforts. Thus, the predominance of existing normative and technical knowledge might be combined and transformed into more comprehensive and practical frameworks. This approach may result in the creation of tools that actors can use, for example, to conduct

productive conversations that spark agreement and collective action, or to help them navigate the intricacies of the decision-making process. This tactic might be especially helpful for reassessing the 2030 Agenda and revising the SDGs to create more inclusive versions that consider a wider variety of moral ideas, hence, moving beyond anthropocentrism.

1.4 Thesis aim and research questions

Taking an interdisciplinary theoretical approach, this thesis utilizes a conceptual research methodology based on observation and analysis of existing concepts and theories. By building upon emerging research in e.g., environmental ethics, animal ethics, and sustainability science, the research explores the potential for a more inclusive understanding of sustainable development that goes beyond the prevalent anthropocentric perspective. This thesis offers a practical strategy that transcends the current discussion on the subject, by employing a broad range of concepts and principles and the lessons learned from past research. The aim is to investigate specific normative moral principles and utilize them in the development of pragmatic conceptual frameworks that are applied to two main themes: i. the creation of more sustainable food systems and ii. the inclusion of the interests of non-human animals in the SD agenda. The results of this research contribute to the advancement of initiatives aimed at promoting a more inclusive understanding of sustainable development. The resulting frameworks are also meant to serve as a guide for future empirical research on the topic. In the context of this thesis, the term inclusive is used to illustrate an interpretation of sustainable development that goes beyond the prevailing anthropocentric worldview, while embracing a variety of societal viewpoints and academic disciplines. Accordingly, the main question that the research will attempt to answer is:

Can a moral approach foster positive action towards an inclusive version of sustainable development?

To answer the main question three complementary research questions (RQ) are raised.

RQ1. Could moral reflection guide a shift towards sustainable systems of production and consumption?

Food systems are thought to be a crucial component in the path towards sustainable development. Grasping whether moral principles might steer actors towards specific food-related behavioural patterns can aid in realizing the relevance of applying a moral perspective to develop more sustainable production and consumption systems. Hence, the thesis begins by addressing this question.

RQ2. How can moral expansion be harnessed to promote more sustainable choices and behaviours?

The practicalities of applying moral perspectives in the creation of more sustainable systems of production and consumption can be studied by first understanding how specific moral theories and principles, such as the expansion of the moral circle, may be applied as a guide for actors to shift towards more sustainable food choices.

RQ3. Can moral ideals aid the development of a non-anthropocentric notion of sustainable development?

A growing number of voices (e.g. Imran et al. 2014; Rupperecht et al. 2020) assert that a way to transcend the dominant unsustainable reality of our times is by expanding our understanding of sustainable development to include a range of non-anthropocentric viewpoints. The health and welfare of non-human animals is increasingly noted as a concern in the sustainable development debate. Hence, a pertinent example to illustrate the practical implementation of a more inclusive sustainable development strategy, which transcends anthropocentrism, is the examination of how the interests of non-human animals may be included in current and future versions of the United Nations sustainable development agenda (SD agenda).

1.5 Thesis outline

The motivations behind conducting this research have been outlined in the introduction. The body of this thesis addresses the aim and the research questions previously stated in four complementary content chapters (Figure 1.1). Finally, a conclusion chapter synthesizes the overarching findings and limitations of this thesis and offers some recommendations for future research.

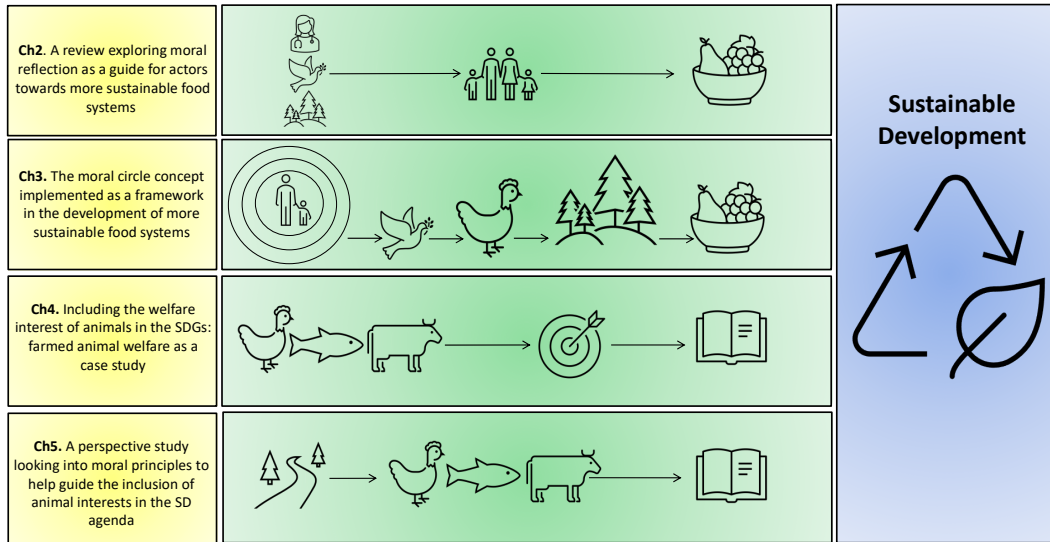


Figure 1.1 – Conceptual graphic model highlighting the topic and research methodology of each of the content chapters (Ch2-5) contained within this thesis.

Chapter 2 (Ch2) is founded on a multidisciplinary review. It has been suggested by others that moral insight could be a suitable avenue to ignite positive behaviour in the direction of sustainable development (see Bratanova et al. 2012). However, very little is known about the role of applying moral principles in the context of food sustainability frameworks. Therefore, the purpose of this review is to begin examining this possibility. First, it makes the case that any plans to meet global sustainable development targets should consider changes in food production and consumption trends. Subsequently, it is argued that to achieve these changes, people must understand their role and responsibility in shaping food systems and acknowledge that the production and consumption of food raise serious sustainable development challenges. Chapter 2 summarizes the main findings from previous research discussing these issues and addresses the possibility of developing novel approaches grounded in moral ideals as a guide in the creation of more sustainable food systems.

Chapter 3 (Ch3) examines how achieving key global sustainable development objectives requires a transition to more socially and environmentally conscious food systems. However, it is argued that to achieve meaningful outcomes, it is crucial to develop inclusive approaches for framing food sustainability goals that can speak to the moral ideals of a diverse range of actors. By helping to connect some of the

challenges around food sustainability with specific moral principles, this chapter discusses the possibility of supporting actors throughout the food system to make a shift in their food choices and behaviours. In this context, the concept of the moral circle serves as the foundation for the development of a conceptual framework, intended to guide a shift towards more sustainable food systems. This approach transcends the anthropocentric methods enacted in traditional sustainable development agendas, offering an alternative with a more inclusive perspective.

Chapter 4 (Ch4) follows from a novel but growing body of literature (e.g., Visseren-Hammakers 2020, Torpman & Röcklinsberg 2021) proposing to include animal welfare in the SD agenda. The main argument is the potential positive effect that improving the welfare of non-human animals could have on the health and welfare of humans. However, it has also been suggested that the welfare interests of non-human animals should be considered, regardless of the potential advantages that improving non-human animal welfare may have on humans. Accordingly, the viability of including the welfare of non-human animals in future versions of the SDGs is highlighted in this chapter. This is achieved by evaluating the case study of non-human animals in the agriculture and aquaculture systems (farmed animals). First, a review of the increasing body of literature proposing to include non-human animal welfare in the SD agenda is performed. Next, the practical implications of including non-human animal welfare in the SDGs are analysed. This is accomplished by outlining a model that incorporates a set of human-focused (anthropocentric) and animal-focused (sentientistic) targets for each of the 17 SDGs.

Chapter 5 (Ch5) makes the case that linking the SD agenda and the interests of non-human animals is a strategy that could bring mutual benefit to non-human animals and humans. Nonetheless, knowledge on how to make such an inclusion and frameworks to guide the process is still scarce. Hence, a pragmatic perspective study is applied, to address the possibility of implementing various moral perspectives to guide this inclusion. For this, three moral viewpoints: anthropocentrism, sentientism, and ecocentrism, are explored. Within each perspective, the implications, feasibility, and obstacles are discussed. This is achieved by making a connection to the existing research and theoretical concepts from the fields of animal ethics, environmental ethics, and sustainability science. The chapter makes a

conceptual contribution to the development of an interpretation of sustainable development that directly considers the interests of non-human animals alongside the interests of humans.

Chapter 6 (Ch6) summarises and contrasts the main findings and limitations of this thesis to provide a clear distinction of what challenges have been met and what challenges remain to be dealt with. Prospects for further research are also covered in this chapter.

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Chapter 1

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"While the insights of science can help us change our world, only human thought and concern can enlighten us about the path we should follow in life. As a complement to science, therefore, we must also cultivate a "science of the mind" or what we can call spirituality. This spirituality is not a luxury but a necessity."

— Matthieu Ricard



Chapter 2

The path towards food sustainability: a moral perspective

Authors:

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Abstract

Food systems are a driver for major sustainable development impacts, affecting a range of social and environmental processes. There is growing scientific consensus that initiatives aimed at achieving global sustainable development objectives should consider a shift in food production and consumption trends. To obtain this shift, actors must acknowledge their role and responsibility, and respond by favoring more sustainable alternatives. Previous research suggests that moral reflection could be a catalyst for positive action in the context of sustainable development. However, there is not much research available on the prospect of incorporating moral principles into food sustainability frameworks. This review paper offers an alternative outlook to traditional top-down sustainable development frameworks. It does so, by discussing the possibility of including bottom-up approaches grounded in moral ideals as a guide in the development of more sustainable food systems. The findings suggest that, in addition to other tactics, a moral perspective might be a useful guide for actors in the development of more sustainable food systems.

Keywords: Sustainable development goals · Environment · Food systems · Agriculture · Moral ideals.

2.1 Introduction

According to the United Nations (UN), food systems are a key element in reaching the United Nations Sustainable Development Agenda for 2030 (2030 Agenda); hence, this cannot be effectively implemented without eliminating hunger, attaining food security, and improving health and nutrition worldwide (Westhoek et al. 2016). No less than nine of the United Nations Sustainable Development Goals (SDGs) have a direct relation with the management of food systems (FAO 2015); while food and agriculture may have some effect on the achievement of at least 12 out of the 17 SDGs (Westhoek et al. 2016). The UN also recognize that humans can no longer look at food, livelihoods, and the management of natural resources separately, putting special attention on the need for a transformation of current resource-intensive food systems towards more sustainable alternatives (FAO 2017a, FAO 2017b). This transition will probably require the creation of novel techniques and technological

advancements to improve agricultural efficiency as well as a move toward more sustainable methods of food production and consumption.

When all human activity is considered, a significant portion of the environmental damage caused by humans nowadays is related to globalized food systems, including production, transportation, consumption, and disposal (Hajer et al. 2016). Consequently, these activities affect a wide range of environmental systems and processes (Garnett 2013). According to Steffen et al. (2015), from nine planetary boundaries that define the safe operating space for humanity in relation to the Earth's systems and associated processes, four have surpassed the "safe zone": land system change, climate change, genetic diversity, and the biogeochemical flows of phosphorous and nitrogen. In their study, Rockström et al. (2009) indicated that agriculture is a significant factor in the breaching of these boundaries and proposed a direct influence of agricultural activities over other systems. Alongside, all four exceeded boundaries have also been mentioned in past research as being influenced by global food systems; predominantly, large-scale animal farming and intensive agriculture (Aiking & Boer 2004; Baroni et al. 2007; Helms 2004).

The food sector is the dominant user of several natural resources worldwide, particularly land, biodiversity, fresh water, nitrogen, and phosphorus (Johnston et al. 2014). Agricultural production dominates many of the environmental impacts, while processing, storage, transport, and distribution of food products have more impact concerning industrial processes (Nemecek et al. 2016). Moreover, if edible food is wasted, then so are all the resources used in its manufacture and transportation, contributing to an even bigger environmental effect (Papargyropoulou et al. 2014).

There seems to be a significant opportunity to reduce needless environmental damage generated by food systems through a shift in production and consumption. For instance, a reduction in food loss and waste, and a substantial reduction in the consumption of meat and dairy could result in a 15% lower global cereal demand compared to a baseline scenario (Westhoek et al. 2016). Moreover, it has been estimated that only in the UK, eliminating packaging, air freighted food and food waste from the food system would reduce greenhouse gas (GHG) emissions by 12%,

5% and 3%, respectively, while there could be a reduction of 35% of emissions by eliminating meat from the diet (Hoolohan et al. 2013).

Sustainable development issues have been increasingly studied throughout the whole life cycle of food, from production to disposal (Table 2.1). Recent research has connected specific food production, consumption, and waste patterns to the dramatic increase in food-related illnesses in humans and the destruction of the environment (Tilman & Clark 2014). Particular attention has been given to the production and consumption of ultra-processed animal-derived foods, by linking them to environmental degradation and declining human health (Clonan & Holdsworth 2012; Springmann et al. 2016). It has been observed that increased incomes are accompanied by increased consumption of diets high in meat, dairy, oil, salt, and ultra-processed foods (Johnston et al. 2014). There is also a particular concern about the historically low, but growing, animal-derived food consumption rates in several countries throughout Asia, Africa, and South America (Gerber et al. 2013). For instance, China has quadrupled its animal-derived product consumption from 5% to 20% of diets since the 1960s (Bonhommeau et al. 2013).

Additionally, preventable food waste has been identified as a significant challenge to sustainable development since it exacerbates the problems associated with already unsustainable food systems, resulting in negative effects on the environment, society, and economy (Allen & Prospero 2016). Around 1.3 billion tons of edible foodstuffs produced for human consumption of global food production are lost or wasted every year (Gustavsson et al. 2011). These enormous amounts of wasted food add to the negative environmental effects of global food production, which include needless greenhouse gas emissions, water use, land use, and reduced biodiversity. (FAO 2013).

Table 2.1 – Global environmental impact of food production.

Impact category	Environmental Indicator	Estimated impact
Climate change	Global GHG emissions	29% ^a
Fresh water	Total water footprint	92% ^b
Land use	Land occupation for agriculture	40% ^c
Biodiversity	Terrestrial biodiversity loss	60% ^d

^a(Vermeulen et al 2012); ^b(Hoekstra&Mekkonen 2012); ^c(Foley et al. 2005); ^d(Westhoek et al. 2016)

Possible solutions to food sustainability challenges

Based on the evidence, a growing number of academics advocate for a drastic global shift away from the overconsumption of ultra-processed foods (such as refined sugar, hydrogenated oils, and curated meats) and animal-derived products (such as meat, dairy, and eggs) in favour of more nutrient-dense and minimally processed plant-based foods (Ranganathan et al. 2016; Sabaté & Soret 2014; Tilman & Clark 2014). In addition to the potential environmental benefits of choosing less processed plant-based diets, there is evidence suggesting that these types of diets could be an effective, more socially equitable alternative for feeding the growing global population (McMichael et al. 2007; Godfray et al. 2010) and are regarded as a promising path to improving human health (Sabaté & Soret 2014; Springmann et al. 2016).

Vegan, Mediterranean, and flexitarian are types of plant-based diets frequently cited as more sustainable and healthier options (Baroni et al. 2007; Marlow et al. 2009; Burlingame & Dernini 2012). Nonetheless, it is worth noting, that it has been argued a reduction in animal-derived foods might not hold as many benefits for the environment and human health if replaced with highly processed meat substitutes and ultra-processed foods; particularly due to the additional impact that comes from industrial processing (Berardy 2015). Similarly, not all plant-derived products are more sustainable overall; the impact of these foods also varies depending on the type of crop, the way that it is grown, and the type and length of transportation to its destination, among other factors that should also be taken into consideration (Reijnders & Soret 2003).

Shifting food systems for sustainable development

The UNEP Report on Consumption and Production (2010), states that there is a good opportunity to lessen the use of natural resources and the effects on the environment through adjustments in food consumption habits, especially in wealthy nations. This statement conveys a sense of urgency since it has become clear that the way food is produced, grown, consumed, disposed of, traded, and transported directly affects the achievement of important sustainable development targets (Fanzo

2015). This puts pressure on actors, particularly national and local governments in affluent countries, to find strategies to advance on the path to achieve considerable food system shifts. However, this is happening slowly, as it continues to be neglected (Nordgren 2012).

The divergent interests and points of view surrounding food systems appear to be one of the biggest obstacles to any attempt to bring about constructive changes. Moreover, a lack of information and education keeps the public ignorant or uncertain about the most prominent issues connecting their food choices with sustainable development (Vanhonacker et al. 2013). What makes these issues even more complex is the fact that food choices are linked to underlying cultural, moral, and religious values (Fiddes 1994; Leroy & Praet 2015); also involving the interactions and dynamics of human communities (van Mil et al. 2014). Peterson (2009) notes that most of the time, whether consciously or unconsciously, we enact our values through eating and consumerism. This can quickly turn the conversation about food change into a dilemma about what people or societies view as morally or socially significant. This is especially troublesome because, when it comes to food choices, people's willingness, or inability to change may also depend on the entities they value and those they believe to be exploitable (Vinnari & Vinnari 2014). According to Graça et al. (2015), some people may even take an avoidance and denial stance when it comes to the consequences of their food choices. This makes addressing the underlying moral ideals around food choice much more crucial—but also more challenging.

Some have argued that the challenges linked to food sustainability, and the paths to promoting a shift towards more sustainable alternatives, may be related to the moral dimensions that underly such issues (Sørensen et al. 2001; Schneider & Hoffmann, 2011). This represents a dilemma, since to shift behaviours around food people may first need to recognize that food choices raise serious ethical issues. Moreover, a discussion about these issues must be incorporated into the political and economic structures meant to encourage changes in food systems (Huesemann, 2006). Nonetheless, it also constitutes an opportunity, given that raising awareness about the range of moral issues surrounding the food system by connecting production and

consumption patterns with specific moral ideals may open people's minds to the possibility of choosing more sustainable food patterns (Early 2002).

To obtain noteworthy results, further understanding of this matter is required, to identify practical methods and approaches that could persuade participants to acknowledge their role and responsibility in contributing to the transition to more sustainable food systems. With the aim to contribute to this knowledge the potential role of taking a moral approach is explored in this chapter. For this, a review based on a multidisciplinary range of literature, including the fields of sociology, sustainability science, environmental ethics, and food science is performed. First, some of the most widely studied impacts of the growing production, consumption and waste of unsustainable food are concisely outlined. Second, a pragmatic outlook on the role of moral perspectives, both as decision-making and problem-solving tools for actors in the transition towards more sustainable food systems is provided. Lastly, some conclusions and recommendations for future research are offered.

2.2 Sustainable development challenges linked to food systems

Climate change

Climate change is acknowledged as one of the fastest-growing environmental hazards worldwide (Rockström 2009; IPCC 2014); making its mitigation a priority for the achievement of sustainable development in all its components. A compelling amount of scientific evidence shows that food systems contribute to at least a quarter of global GHG emissions (Vermeulen et al. 2012; Tubiello et al. 2014). These numbers suggest that emissions from agriculture, food production and consumption are responsible for global climate change to a greater extent than both, the generation of energy (McMichael et al. 2007) and transportation (Fiala 2008; Pelletier & Tyedmers 2010). Moreover, it has been estimated that food waste is responsible for 3.3 Bt-CO₂-eq. yr., which is equivalent to the world's third largest emitter of carbon following the emissions of China and the USA (FAO 2013). GHG emissions can be lowered through dietary changes and reduction in preventable food waste (IPCC 2007). Particularly, dietary changes that favour plant-derived products over animal-derived products may hold a large climate change mitigation potential (Hedenus et al. 2014).

Water depletion and pollution

Freshwater supplies are under increasing strain globally, primarily due to rising agricultural productivity (Holland et al. 2015). While human population growth has a major impact on the use of fresh water, it is estimated that household water uses account roughly for 10% of freshwater consumption (Hoekstra & Chapagain 2008). In contrast, global agriculture accounts for 66–70% of consumption, which makes it the largest user of freshwater from all human activities (Steinfeld et al. 2006). Meanwhile, globally, the blue water footprint for the agricultural production of total food wastage in 2007 was about 250 km³, which accounts for more than 38 times the blue water footprint of households in the USA, or 3.6 times the blue water footprint of total USA consumption (Mekonnen & Hoekstra 2012).

Water pollution produced by agriculture is another threat to the supply of clean water worldwide, particularly in countries where water is already scarce. There are significant impacts of livestock, notably concentrated animal feeding operations (CAFOs), on the quality and replenishment of fresh water (Nesheim et al. 2015). This pollution has major effects on the water quality changing its chemical composition, hence preventing any type of life form from thriving and creating areas that cannot support life (Núñez-Delgado et al. 2002). Moreover, the antibiotics and hormones contained in animal waste and the agricultural pesticides and fertilizers used to grow crops have polluting effects on aquifers as well (Steinfeld et al. 2006).

Biodiversity loss

There is a significant amount of evidence pointing towards an unprecedented number of species extinction and biodiversity loss in the last years (IUCN 2013). In fact, there is wide consensus that at the beginning of the century, the rate of extinction was 50 to 500 times the normal “background rate” shown by the fossil record (Woodruff 2001). Overall, all agricultural practices have some range of ecological impacts on terrestrial ecosystems and biological biodiversity (Marlow et al. 2009). However, animal agriculture is the largest driver of habitat loss, particularly livestock and feedstock production, which is increasing in developing tropical countries where most of the biological diversity resides (Machovina et al. 2015). Meanwhile, there is a growing demand for fish and other marine creatures for human and animal consumption (Merino et al. 2012) which threatens populations

worldwide. Also, various agricultural landscapes are impacted by depleted soils and pollution from fertilizers and pesticides, endangering ecosystems, biodiversity, and ecosystem services essential to agriculture (Erisman et al. 2016).

Land use and degradation

Almost one-half of all natural grasslands, and nearly one-third of all natural forests worldwide, were already lost at the beginning of the century because of land being transformed to grow and produce food (Goldewijk 2001). Roughly 70% of previous Amazon forests were turned into cattle pasture, while feed crops like soy and corn covered a large part of the remainder (Steinfeld et al. 2006). Together, croplands and pastures occupy around 40% of the land's surface, becoming one of the largest terrestrial biomes on the planet, equivalent to the extension and occupation of forest coverage (Foley et al. 2011). Even though some degree of agricultural expansion corresponds to crops grown by farmers for direct human consumption; at least three-quarters of all agricultural land, and almost one-third of the ice-free surface of the planet, is used for livestock production (Steinfeld et al. 2006). Food waste has also a significant role in land use. Globally, the total amount of food wastage in 2007 occupied almost 1.4 billion hectares, equal to about 28% of the world's agricultural land area (Gustavsson et al. 2011).

Non-human animal welfare

The welfare of non-human animals (from now on referred to as animals), is not commonly regarded as an indicator or even a component of food sustainability. Moreover, animal welfare quite often appears to conflict with some sustainable development targets (Meijboom 2013). However, there is an ongoing discussion about the acceptability of large-scale industrialized practices of animal raising in the context of food sustainability, which is slowly becoming a major concern in Western societies. For instance, it has been argued that one major reason animal production systems may be regarded by the public as unacceptable, and hence become unsustainable, is the welfare and suffering of the animals used in the meat, dairy, and egg production systems (Broom 2010; Broom et al. 2013). As it becomes more widely acknowledged that sustainable practices, such as avoiding poor animal welfare in the food system, can aid in the achievement of sustainable development

goals, the United Nations Food and Agriculture Organization (FAO) and the European Commission have also begun to discuss how improving animal welfare can contribute to securing environmental and economic sustainability in recent years (Broom 2017).

At large, because of the adoption of intensive production systems, worldwide, more than 60 billion animals are slaughtered each year (Raphaely & Marinova 2014); and an average of 650 animals are killed every second of every day (Henning 2011). This intensification causes a considerable amount of suffering and misery and in many cases the development of unsanitary conditions, which put at risk the health of animals, humans, and the environment (Loughnan et al. 2014).

Human health

According to GBD (2017), in 2015 a total of 107.7 million children and 603.7 million adults were obese. Simultaneously, non-communicable diseases like diabetes, cancer, and cardiovascular disease have been described as the global leading causes of illness and mortality (Balakumar et al. 2016; Wagner & Brath 2012). Many of these illnesses have been strongly associated with the overconsumption of fats and energy-dense foods, such as meat, eggs, milk, processed oils, and refined sugar (Chopra et al. 2002; Popkin 2002; Nesheim et al. 2015). For instance, cardiovascular diseases have been associated with the overconsumption of animal products and ultra-processed foods (Campbell et al. 1998; Ornish et al. 1998). Food waste is also related to overconsumption of food. According to Berardy (2015), food waste and obesity may be symptoms of the same problem, which is the overproduction of food.

The mass production and overconsumption of meat is also a threat to public health, by contributing to the spread of infectious diseases. These include various viral hemorrhagic fevers, avian and swine influenza, Nipah virus, and “mad cow” disease, among others (Henning 2015). Over the last decades, there has been a dramatic resurgence in emerging infectious diseases (Anomaly 2015), which are known to originate from the animal kingdom, because of domestication, factory farming, and animal meat consumption (Woolhouse & Gowtage-Sequeria 2005). Moreover, the use of antibiotics, growth hormones, and the genetic modifications induced in farmed animals could have dangerous consequences for humanity, including a global

“epidemic” of antibiotic-resistant infections (Chee-Sanford et al. 2009; Nesheim et al. 2015).

Social justice and human development

According to the SDGs, one of the most important challenges in the implementation of the 2030 Agenda is ensuring food security and achieving zero hunger while reducing malnutrition. It has been suggested that cutting food waste could significantly increase food security because doing so will increase efficacy and efficiency in terms of safeguarding food supply chains (Irani & Sharif 2016). Nevertheless, the growing raising of livestock seems to be a major threat to achieving these objectives. With a full third of the annual global harvest of grains being fed to livestock, the scale of lost edible nutrition has been deemed immoral and unacceptable (Foley et al. 2011; Alexandratos & Bruinsma 2012). Additionally, two-thirds of the planet’s population is projected to be suffering from water stress by 2025, while copious amounts of water are being used to raise livestock (Viala 2008).

Furthermore, the increasing amount of food wasted in households adds significantly to the environmental burden per kilogram of food consumed (Mogensen 2009). Estimates show that 1.3 billion tons of edible foodstuffs produced for human consumption, which represents a third of the global food production, are wasted every year (Gustavsson et al. 2011). According to FAO (2009), This would be enough to take one-eighth of the global population out of under-nourishment and meet the projected increase of 50–70% in demand by 2050. Hence, it has been suggested that more food would be available for undernourished people if water, energy, and fertilizers were used to feed those populations rather than producing surplus food for the people in the developed world (Stuart 2009).

2.3 Human values, moral ideals, and sustainable food choices

As discussed in the previous section, the production and consumption of food is responsible for the largest share of sustainable development impacts in the global food system chain. Thus, there is great potential to address major sustainable development challenges by figuring out how to motivate actors along the whole food

system to actively participate in a change towards more sustainably produced and consumed food combined with a decrease in overall food waste (Table 2.2).

Table 2.2 – Potential effects on key sustainable development challenges of switching from overly processed animal-based foods to less processed plant-based foods and/or reducing avoidable food waste

Sustainable development challenges	Effects
Human Health	-Obesity reduction -Reduction in nutrition induced and zoonotic disease -Reduction of antibiotic resistant infections
Social development	-Malnutrition reduction -Improved food security -Alleviating hunger
Animal welfare	-Reduction of animal suffering -Improvement of animal welfare -Reduction of confinement and disease
Water pollution and depletion	-Reduction of water scarcity -Reduction of water pollution
Climate change	-Reduction of GHG emissions. -Reduced cost of climate change mitigation
Biodiversity loss	-Reduced species extinction. -Increased ecosystem function -Reduction of habitat and biodiversity loss
Land use and degradation	-Reduced agricultural land occupation -Reduced deforestation -Reduction in soil erosion

Why and how people lean towards sustainable choices is still a highly debated matter. People choose to consume specific foods for several reasons; in many cases, the motives are not related to health or nutritional needs but to pleasure, personal identity, culture, religion and to express social and economic status (Fiddes 1994; Macdiarmid et al. 2016). Proposals to reduce the production and consumption of unsustainable food challenge many of these values; thus, this can be a major barrier to shifting food choices in the general population (Cole et al. 2009; Carlisle & Hanlon 2014). Some have argued that to enhance the transformative potential of change towards sustainable development, an integrated approach might be needed; which should include the views and values of all potential agents of change (Vinnari & Tapio 2012; Hajer et al. 2015).

Human food production and consumption are inherently moral since they typically involve some degree of choice and have the potential to have negative impacts on the environment, animals, and the health of both producers and consumers. Thus, several contentious issues surrounding food choices are brought up for actors to consider, such as health, culture and religion, food insecurity, environmental degradation, animal welfare, food waste, bioengineering, fairness, and the circumstances surrounding the growth and production of food (Thompson 2015). If seen from this perspective, people ought to inform themselves about these issues and respond by shifting their food choices towards more ethical and sustainable options. However, a significant lack of moral responsibility is evidenced by the fact that politicians, farmers, and food producers often do not recognize or understand their role concerning these issues (Valera 2014).

According to Hajer (2015), sustainable development frameworks are often meant to improve practices from a governance perspective. This is aligned with the traditional top-down approach endorsed by the political community, which disregards the responsibility and potential of change of other actors, such as cities, businesses, and individual citizens. Consequently, there is a persistent trend from the public to demand policymakers to repair the sustainable development crisis, while individual citizens, producers, and consumers, are not taking responsibility by changing their choices and lifestyles (Hajer et al. 2015). Hence, when it comes to shifting food choices, the most evident problem is the disengagement and/or alienation of people, both intellectually and emotionally, from the food system. This lack of awareness results in consumers who often do not act in accordance with their moral ideals when making food choices (Anthony 2012a). Likewise, modern industrialized agriculture is also far from relying on ethical standards, as it is often guided by political ideals and/or economic interests (Ilea 2009; Meijboom & Brom 2012;).

But even when people are well informed about the problems inside the food system, awareness of facts might not be enough to cause change since a high amount of dissonance can also be involved (Nijland 2016). For instance, in their study, McDiarmid et al, (2016) found a lack of awareness of the connection between meat consumption and climate change among the participants, but even after learning

about this relation, there was an overall resistance to the idea of reducing meat consumption. According to (Nordgren 2012), this dissonance lies in a value conflict between the worth of individual autonomy (privacy) of the present generation and the value of the welfare of others (e.g., future generations, developing countries, animals).

It is also argued that consumers who participate in the global, industrialized forms of food production, are caught in a cycle of moral psychology of denial and indifference concerning their responsibilities (Buller 2010). For instance, although studies suggest that some people, particularly self-identified vegetarians, see the adoption of plant-based diets as a shift towards a more sustainable lifestyle (Fox & Ward 2008); other research suggests that diet and the consumption of animal-derived products are not generally seen as a relevant behaviour in terms of sustainable development by most consumers (Tobler et al. 2012; Beverland 2014). Likewise, it has been observed that marginalized groups tend to engage less with the dominant ethical eating repertoire, this does not mean that they are necessarily unconcerned with the moral quandaries surrounding food choices, but that their socio-economic situation alienates them from the necessary knowledge and/or resources to partake of such alternatives (Johnston, et al. 2011).

A moral perspective in food sustainability frameworks

To advance commitments towards the development of more sustainable food systems, the gaps in the understanding of what food sustainability means should be addressed, which will be a changing concept depending on the views and values of different populations and contexts (Johnston et al. 2014). In the first place, the concept of sustainable development, in general, and more specifically, food sustainability, entails many aspects and multiple interpretations (Aiking & DeBoer 2004). For instance, according to Broom (2010) when addressing the sustainability of a specific system, the meaning of the term “sustainable” is much wider than the availability or unavailability of certain resources, or the functionality of a system; hence, a system can also be unsustainable because of negative impacts on human health, animal welfare or the environment.

The definition and value of sustainable development are also engrained in individual, sometimes highly debated viewpoints. Part of the reason for these differing opinions regarding the significance and worth of sustainable development is that they stem from varying moral ideals about how humans and the natural world should be understood (Robinson 2004). Hence, no system or procedure can be considered sustainable if a substantial proportion of people find aspects of it now, or of its consequences in the future, morally unacceptable (Broom 2010). According to Anthony (2012a), the agricultural and food production technologies we use, or endorse, are related to our values, and reflect the nature of our moral character; they can define actors as better or worse consumers and/or people. Thus, if the appropriateness of a particular course of action regarding food production, distribution, and consumption is essentially assessed based on the moral ideals of actors, then a moral viewpoint ought to be central to debates on sustainable food systems (Vinnari & Tapio 2012).

It must be noted that moral ideals do not provide an absolute answer to all the issues surrounding food sustainability; however, they might be useful when developing a perspective on how people may live more sustainably because they can be used as a guide towards a given choice. Meijboom & Brom (2012) describe these ideals as “open but not empty”; hence, the authors provide three reasons why they can be useful in understanding the role of ethics in the discussion of sustainable development. First, moral ideals can aid in the understanding of the normative – overly technical and factual terms– in which sustainable development is commonly discussed. Second, they can help to deal with the problem of the lack of a precise definition for sustainable development. Finally, sustainable development, as a moral ideal, becomes helpful in developing a critical reflection without impeding the use of the term as a guide for practice.

Previous research suggests there is considerable scope for promoting change in food production and consumption practices based on the values involved. Vermeir & Verbeke (2006) argue that a significant catalyst for change, especially concerning sustainable development issues, could be postmodern society's propensity to contemplate upon established cultural norms and ideals. Furthermore, these value-based principles might also provide a guide for political interventions. According to

Manning et al. (2006), legislation defines governmental policy, but it does not define what is “good” or “right”, and this is the role of ethics. To have moral reasoning embedded in food policy either at the governmental or organizational level, policymakers must be able to understand and evaluate moral arguments, be fair-minded and make well-reasoned decisions (Manning et al. 2006).

Some have proposed that the moral circle (Singer 2011), which denotes the set of entities considered worthy of moral regard and treatment, is a common motivational source for engagement in environmentally beneficial activities, including food choice (Bratanova et.al. 2011). Hence, the more entities people feel morally concerned about; for instance, fellow humans, animals and/or other living beings, the more motivated they would be to engage in activities aimed at protecting the interests of these entities. Likewise, the development of an ecological ethic that responds to the needs and rights of the Earth and its non-human inhabitants (ecocentrism) over purely human interest (anthropocentrism) is presented by some authors as the most viable alternative to engaging people in environmentally friendly behaviours (Purser et al. 1995; Curry 2011). Other authors have called attention to overcoming the current societal view of food systems as “a device”, based on mass-scale production and intensification. This collective action should be taken up by individuals, both producers and consumers, with commitments to be virtuous decision-makers, who aspire to take part in solving the issues surrounding the food system (Chiu & Lin 2009; Anthony 2012b).

In practice, including a moral perspective within food sustainability frameworks requires promoting food production and consumption methods that cause less harm and contribute to the greater good. However, it might also require encouraging policymakers, producers, and consumers to act following specific values and principles of virtue whenever practical and possible. Nonetheless, it is also important to consider that when it comes to individual values and motivations for sustainable action, different logics of change might be at play; hence, people may be driven to make shifts by a genuine concern for the interests of others (human and non-human), but also, by new opportunities arising from sustainable development challenges (Hajer et al. 2015). Thus, other types of values or motives such as health, well-being and economic improvement might also be seen by some as an opportunity

to promote engagement in sustainable food practices, making them a suitable avenue for the advancement towards more sustainable food systems.

2.4 Discussion and conclusion

Recent research and reports on food sustainability suggest that food systems have some level of impact over virtually all the goals in the SDGs framework. This review shows that the current model of resource-intensive food production does not provide the necessary conditions for the achievement of the 2030 Agenda. Neither does the growing consumption of animal-derived products, ultra-processed foods, and the imminent increase in preventable food waste. Consequently, it is concluded that to implement present and future sustainable development frameworks, the decisions and behaviours undertaken by all actors involved in the food system—from producers to consumers—must shift. However, it has been noted that the understanding of why and how people lean towards more sustainable choices is still a highly debated matter. Hence to obtain much-needed changes, there is a need to further this understanding.

The findings of this review imply that in addition to government actors, other societal actors should be actively urged to get involved and take part in a shift towards more sustainable food choices and behaviours. Nonetheless, most people are unaware, or disconnected from the potential issues and harm that accompany their food choices, and the role that these choices play in hindering or furthering the achievement of pressing sustainable development objectives. One of the reasons for this disconnect seems to be that the traditional top-down overly technical sustainable development frameworks overlook the underlying moral ideals of the wider public. Yet, food choices and behaviours along the whole food system are intrinsically moral and reflect the nature of people's moral character (Anthony 2012a). Consequently, the main aim of this paper has been to persuade the reader to consider that progress towards food sustainability goals may not be accomplished if moral principles related to decisions made within the food system are not addressed.

Approaching sustainable development as a moral ideal has been suggested to help people comprehend the highly contentious, normative, and factual language commonly employed in conversations on sustainable development (Meijboom &

Brom 2012). Therefore, gaining a better grasp of the dilemmas raised by the discussions around food sustainability could help in navigating complicated issues and work as a guide for action. Furthermore, addressing food sustainability issues from a moral standpoint can help establish a common basis for discussion and aid in the resolution of potential disagreements (Zimdahl 2018).

By reflecting on individual and collective moral ideals, actors may develop new insights, which might lead them to a better understanding of the impacts that their food choices have in realizing these moral ideals. This might empower people to seek consistency between their values and actions, by striving to become more virtuous producers, retailers, and consumers, and hence, shifting towards less harmful food alternatives. Therefore, a deeper comprehension of how moral principles influence food choices may be the crucial missing piece between current and future sustainable development frameworks and people's active involvement in the achievement of these frameworks.

Educating the public and promoting the involvement and dedication of various actors could be achieved through a moral approach to food sustainability that incorporates principles of care, respect, and accountability towards the interests of others: humans and non-humans. However, other self-enhancing opportunities that may arise in response to issues related to sustainable development, such as personal health, technology advancements, and economic growth, could also work as a catalyst for actors to make more sustainable food choices (Hajer et al. 2015). Thus, implementing a moral perspective in the advancement towards more sustainable food systems requires an integrated approach, that considers a wide range of relevant viewpoints, and the development of specific frameworks in accordance with the moral ideals of different actors involved. This perspective could be used as a decision-making and problem-solving tool for research, policy, and industry; and as a guide for citizens to favor more sustainable food alternatives.

It would be advisable to expand the research on this topic, given the paucity of previous studies on the subject and its significance for furthering the global sustainable development agenda. The main objective of further investigation could be to develop frameworks that can work as a guide for actors to reflect on their moral

ideals and connect them with specific food sustainability objectives. This will require exploring specific moral values and other incentives driving food choices in different actors within the food system and strategies to include moral perspectives within current and future sustainable food frameworks. If this approach proves fruitful, it could help researchers and policymakers to better understand and appreciate the significance of incorporating moral perspectives in arriving at thoroughly reflected sustainable food choices.

2.5 References

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"Hope is often misunderstood. People tend to think that it is simply passive wishful thinking: I hope something will happen but I'm not going to do anything about it. This is indeed the opposite of real hope, which requires action and engagement."

— Jane Goodall



Chapter 3

The Expanding Moral Circle as a Framework Towards Food Sustainability

This chapter is based on the publication:

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Abstract

A shift towards more environmentally friendly and socially responsible food systems is a key step in the achievement of global sustainable development goals. To obtain significant results, however, it is essential to find participative ways to frame food sustainability objectives, so they can speak to a wide array of actors of change. This article addresses the promising potential of empowering actors across the food system to make a shift in their food choices, by facilitating the association of food sustainability values with contemporary moral issues. In this context, a conceptual framework for a transition towards food sustainability is proposed in this paper, based on the concept of moral circle expansion. This approach transcends the human-centred methods enacted in traditional sustainable development agendas, offering an alternative with a more holistic perspective. It is expected that emphasising moral reflection in the context of sustainable development might encourage societal participation in the creation of more sustainable, fair and healthier food systems.

Keywords: Sustainable development goals · Sustainability · Food systems · Values · Moral circle

3.1 Introduction

Shifting food towards sustainable development

There is extensive recognition among scholars warning that more environmentally friendly¹ and socially responsible² food practices need to be adopted to achieve key sustainable development goals (Baroni et al. 2007; Marlow et al. 2009; Springmann et al. 2016). In the present, more than ever in human history, people can choose, to some extent and predominately in affluent nations, a variety of food in their diets. Nonetheless, the scale seems to be moving in the wrong direction, as this freedom is also leading people towards unsustainable and unhealthy food patterns (Joyce et al. 2012). As income increases and urbanisation expands, traditional diets consisting mainly of minimally processed plant-based foods are being replaced by more refined, more processed and meat-heavy diets (Drewnowski & Popkin 2009; Tilman & Clark

¹ Measured against environmental indicators (e.g. climate change, pollution, desertification).

² Practices considered responsible based on societal standards (e.g. fairly traded, animal welfare, public health).

2014). A similar pattern is observed in the amount of preventable food waste generated, which has been predicted to increase in the next 25 years due to economic and population growth, particularly in Asian countries (Chen et al. 2017).

Despite growing evidence suggesting the need to reorient current diets towards more nutritious and less processed plant-based alternatives for improving human health and advancing towards sustainable development (Pimentel & Pimentel 2003; Sabaté & Soret 2014; Willet et al. 2019), it is expected that meat production will double worldwide by 2050 unless demand falters (Steinfeld et al. 2006). Moreover, there is a global trend towards the overconsumption of calories³; at the same time, many people around the world remain hungry (Ranganathan et al. 2016). Furthermore, the increasing consumption of highly processed and overpackaged foods is expected to add to the environmental impact of dietary choices because of the detrimental effects of industrial processing (Notarnicola et al. 2017) and the damaging effects on human health (Popkin 2006).

In this context, it seems reasonable to state that the transformative potential of current and future sustainable development agendas, notably the United Nations 2030 Agenda (2030 Agenda) with its 17 Sustainable Development Goals (SDGs), depends to a large extent on a change in patterns of food production and consumption⁴. Hence, there is an urgent need for a reorientation towards more integrative approaches, promoting institutional and societal involvement throughout the whole food system. The main challenge lies in understanding the mechanisms that might ignite such involvement, as well as the possible obstacles.

Food sustainability and participatory citizenship

According to Hajer et al. (2015), modern society is anything but passive; in fact, the authors refer to it as “energetic” and composed of a large group of actors willing to act and positively change. There are, however, citizens who are sceptical of the need for transformation. This lack of engagement is reinforced by the fact that global

³ Which generates a new set of issues in terms of human health such as diabetes, hypertension and higher risk of heart disease (WHO 2003).

⁴ No less than nine of the UN (SDGs) have a direct relation with the management of food systems (FAO 2016); while food and agriculture may have some degree of effect on the achievement of at least 12 out of the 17 SDGs (UNEP 2016).

agendas for sustainable development are built from an overly technical and top-down perspective, aimed at governments and intergovernmental organisations. Meanwhile, other likely actors, such as citizens, consumers and civil society are neither actively targeted nor called to take action (Hajer 2011). As a result, an important number of people and institutions remain disconnected from the transformative potential of their food choices, ignoring their responsibility to achieve sustainable development goals. This lack of empowerment is reflected in disengaged and/or alienated actors who often do not enact their own principles when dealing with decisions around food (Anthony 2012).

The achievement of societal participation in the process towards food sustainability is based on the premise that actors throughout the whole food system recognise their responsibility as key players in the achievement of such goals. Under this paradigm, sustainable development goals are seen as a collective endeavour, rather than a matter to be enacted by a few organisations at the political level. Therefore, the active participation and commitment of the largest number of potentially relevant actors might be one of the most important elements in the transition towards more sustainable food systems (Spaargaren et al. 2012; Vinnari & Vinnari 2014).

In line with a more participative approach to sustainable development, Gruen & Loo (2014) argue that as individuals and communities explore their responsibility in the creation of certain harms, they also have the opportunity and incentive to rethink the actions they can take to prevent or diminish these harms. Consequently, they have a chance to alter the causes and effects of complex social, political, and economic relations. The same could be said concerning the development of policies and governance instruments based on a diversity of perspectives, which might facilitate societal engagement, promoting the interests and concerns of the wider society. Thus, the objective should be to apply a more inclusive variety of considerations than those typically comprised in sustainable development assessments, focusing on people, their values, motivations, participation and their realities (Werkheiser & Piso 2015).

The role of moral ideals in food sustainability

One of the main challenges for those striving towards sustainable development goals is to understand how these can be presented in a way that comprehensibly speaks to the wider public, so there is an increased chance that people can relate to them with their values. Research shows that motives for dietary choice are varied, and may also vary widely depending, among other factors, on the population, group, age, gender, religion and social status (Lindeman & Väänänen 2000). Nonetheless, the occurrence of sustainable consumption patterns is also influenced by individual value priorities (Thøgersen & Ölander 2002).

In their study, de Boer et al. (2007) explain that most of the basic human values, such as benevolence, universalism, self-direction, stimulation and hedonism, have been related to the direction of food choice. However, endorsing universalistic values appears to be unique in its impact on sustainable food choices. For instance, universalistic values, such as the belief that people should care for social justice, non-human animals (from now on referred to as animals), or nature, may cause an upsurge in the recognition of responsibilities regarding food choice. As a result, holding these types of views and values may also lead towards the selection of products and production processes that are considered more sustainable (de Boer et al. 2007).

Consequently, it seems that including a moral perspective, amongst other strategies, could guide people in a transition towards more sustainable food choices, by relating sustainable development objectives with their values, aspirations and concerns (Early 2002; Manning et al. 2006). In this line, Meijboom & Brom (2012) argue that moral ideals can contribute to discussions on the understanding of sustainable development. The idea is that if a person recognises an ideal, it is likely this person wants to live up to it; therefore, recognising that certain moral principles come with obligations could be morally action-guiding. Moreover, according to Rawles (2010), if we are to attain the SDGs, food production cannot be just a question of efficiency. Since the food system plays a crucial role in sustainable development, it urgently needs to be reoriented along explicit ethical lines. Unfortunately, this issue is taken into consideration but scantily in the sustainable development debate.

Hereby, a pragmatic conceptual model based upon some of the main moral dimensions related to food sustainability is offered. The objective is to apply the concept of the expanding moral circle as a reference to build a framework for societal participation towards sustainable food production and consumption. This framework is meant to outline potential values related to food sustainability within four moral categories (1- individual health and wellbeing; 2 - social justice; 3 - sentient animals; 4 - the environment). This approach expands from the anthropocentric, overly technical, and top-down tactics of traditional models. The main purpose is to put forward a proposal based on a novel outlook for the interpretation of sustainable development, exploring the potential of including a wider array of moral principles and values.

The paper will proceed as follows: first, it presents a review based on an interdisciplinary content analysis of the theoretical and research evidence from the relevant literature, to connect the topic of moral values with food sustainability. Next, it describes a conceptual model for food sustainability transition based on the notion of moral expansion, illustrating its applicability. Finally, a conclusion and discussion section offers a reflection, analysing the benefits and obstacles of including this type of approach as a key element in the conceptualisation and implementation of food sustainability goals.

3.2 Moral ideals and food sustainability

Values guide people towards specific goals, framing their attitudes and providing standards against which they can judge individual and collective behaviour (Leiserowitz et al. 2006). They also guide the selection and/or assessment of actions; hence, people decide what is good or bad, justified or illegitimate, and worth doing or avoiding based on the possible consequences for their prioritised values (Schwartz 2010). Once activated, values can affect prosocial behaviour, particularly through their influence in the direction of motivation. However, differences in the importance assigned to specific values may also influence which, if any, are activated in the first place (Schwartz 2007). According to Schwartz (1977), the more easily a value comes to someone's mind, the more likely it is to be activated; and because more important values are easier to access, they relate more to behaviour. This gives a general idea of

how specific values can shape people's views, and how they might influence conduct when related to concrete goals that are action-guiding.

The value basis of environmental concern and pro-environmental behaviour has been studied widely (see, for example, Stern and Dietz 1994; De Groot & Steg 2007). According to the norm activation theory (Schwartz 1977), an important antecedent to pro-environmental behaviour is the activation of a personal moral norm. Nordlund and Garvill (2002) suggest this activation takes place when someone perceives environmental problems that threaten something that one values (e.g., nature, the well-being of fellow humans, one's well-being). Also, personal responsibility, experienced as a moral obligation to act to protect whatever is threatened, is derived not only from individuals but also from collectively cherished values (Hards 2011). For instance, a value might be perceived as important not only because it is part of a person's self-concept but also because of social norms or self-presentation motives, or as a justification strategy (Verplanken & Holland 2002).

Previous research has also confirmed the presence of common motivational roots based on moral values and identity as the cause for various pro-environmental behaviours (Bratanova et al. 2011). This approach may also apply to conduct towards food practices, as common human values have been found to be related to the direction of food choice motives (de Boer & Aiking 2017). Hence, if there are some underlying mechanisms based on moral values that drive several behaviours and consumption patterns, it may be possible to facilitate a transition towards pro-environmental lifestyles, by building specific instruments that encourage people to move in the desired direction (Kashima et al. 2014).

Hajer (2011) proposes that people base their perceptions and values related to what they see and experience on structures of reference, or frames. Moreover, a frame can have a significant influence on people's ideas, thus offering a route for action; it not only determines their opinions of a problem but also, often sub-consciously, of the "suitable" solution. Thus, a transition towards sustainable development goals would be facilitated, if there were conscious efforts to provide knowledge; for instance, by building frames that include moral interpretations. The idea is to provide instruments that are in concordance with people's main ideals and motivations,

allowing agents to act in recognition of sustainable development challenges (Akenji 2014; van den Born et al. 2018).

The sustainable development debate confronts us with the fundamental question of how it is possible to assign responsibilities to actions for which we are not able to oversee the consequences and to answer such a question there is a need for moral reflection (Meijboom & Brom 2012). In the following sections, the concept of the moral circle is introduced and proposed as a tool for moral reflection in the context of food sustainability transition. Moreover, the potential role of moral expansion as a frame for societal engagement is explained in this context.

Expanding the moral circle

The expansion of the moral circle has been discussed in ethics, as an approach to understanding how people develop their scope of moral concern, and which entities are included and excluded from it (Singer 1981). The moral circle indicates the scope of a person's moral view. Someone with a limited moral circle restricts his or her concern to those entities that are considered closer to him or her, such as direct family, friends and pets. A person with a wider circle, on the other hand, extends moral consideration beyond these boundaries to more distant entities, such as other sentient animals and nature. Nonetheless, moral expansiveness does not mean that people move uniformly along this continuum, and some individuals may give particularly high attention to some entities considered more distant, such as granting greater moral consideration to the environment than to human out-group members (Crimston et al. 2016). This allows for a wide range of possibilities in the extent of the moral circle of individuals, communities and societies.

The expansion of the moral circle in time implies that throughout human history a larger number of entities in the world have been proved worthy of moral consideration, and as a result, have been included in the moral circle (Singer 1981). Over the past decades, the field of applied ethics has discussed the morality of practices, such as technology, agriculture and consumption, questioning their effects on the interest of entities beyond human beings. As a result, the scope of moral

consideration has come to be wider, with authors pointing out issues concerning entities such as animals⁵, the biotic community and the environment⁶.

The range of expansion in the moral circle might be a critical issue in the advancement towards more sustainable and fair societies, as moral decisions and the ethical treatment of others depend on the extent of people's moral boundaries (Pizarro et al. 2006). Social conditions, such as education, cultural limitations and indoctrination, play an important role in the scope of moral consideration of individuals and societies. As a result, entities outside the moral boundary are subjected to appalling treatment, with slight or no attention to their welfare. Therefore, if the objective is to protect their interests, the goal should be to broaden the circle to include a wider set of entities (van den Berg 2013).

Previous research suggests that individual differences in the set of beings included in people's moral circles are a dominant predictor of sustainable decision-making, which includes food choices (Laham 2009; Bratanova et al. 2011). The proposition is that the more entities people feel morally concerned about – for instance, other human beings, sentient animals, or nature – the more motivated they will be to engage in activities aimed at protecting those entities. In their study, Bratanova et al. (2011) found that persistently holding an expansive moral circle, which includes a greater number of natural entities, is positively associated with sustainable food consumption patterns, such as avoiding eating meat for environmental reasons and buying organic food. The authors conclude that an extensive moral circle is a previously unidentified significant basis of pro-environmental activities, and thus, it may be utilised to efficiently promote these activities individually and in the wider society.

⁵ Peter Singer (1990), made the argument of moral expansion beyond anthropocentrism towards sentientism. Under this paradigm, sentience rather than species membership should guide the decision as to whether non-human animals should be included in the moral circle.

⁶ Arguments in favour of moral expansion towards the biotic community and other environmental entities can be found in the work of Aldo Leopold (1949), who made a case for granting moral standing to the land community at large, including soils, waters, plants and animals. Leopold's work was later extended by J. Baird Callicott (1984), who advocated an enlarged vision of community transcending individualism and embracing a non-anthropocentric value theory for environmental ethics.

Based on the above arguments, four main dimensions related to food sustainability have been defined. These dimensions allow the exploration of a holistic set of possible moral concerns around food, which are outlined in the moral circle (Figure 3.1). Starting with traditional anthropocentric sustainable development perspectives focused on individualistic human flourishing and growth, the circle expands towards other less explored dimensions, which include entities that are generally absent or neglected from sustainable development frameworks. To justify the inclusion of these dimensions, the following section describes some examples of values related to each of the categories. These values have been repeatedly found in previous research to be significant predictors in the development of pro-environmental and ethical lifestyle choices, including food.

Health and wellbeing

Individual, or self-directed, value orientations have been related to food choice since ancient times. Human beings, by nature, have an interest in individual physical and psychological well-being and/or personal growth, generally extending this concern to close family members and friends. This approach is in line with an anthropocentric worldview, where the environment and natural resources are to be protected and preserved because they are required for maintaining human well-being. Common values amongst populations around the globe have been directly related to individual development, including health, longevity, education and economic opportunity (Leiserowitz et al.2006). Among these, health and well-being – including bodily, mental, social and spiritual – have been described as concerns for protecting the environment and might be important motivations for involvement in sustainable practices, including food choice (Chen 2009; Graça et al. 2015).

It has been observed that awareness about the negative effects of the so-called modern “Western diets” – characterised by an overconsumption of red meat, sugar, fat and highly processed food – may also function as a motivational force in the process of dietary change (Vainio et al. 2016). There is an increasing concern about the rise of non-infectious chronic diseases –including diabetes, hypertension, heart diseases and certain types of cancer– which can be directly related to the consumption of over-processed and animal-based diets (Tuso 2013; Joyce et al. 2012). Also, people are much more conscious of the effects of pesticides and

herbicides on human health (Kim et al. 2017; Mostafalou & Abdollahi 2017). Another concern, appearing globally – and particularly important in Westernised cultures – is weight control and body shape (Vainio et al. 2016). Individuals who give particular importance to these aspects are generally concerned about their wellness and safety and are motivated to make changes that might improve and/or maintain their health and quality of life (Michaelidou & Hassan 2008).

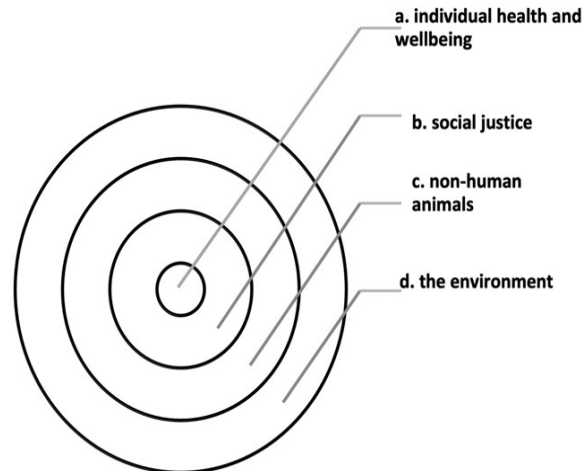


Figure 3.1– The moral dimensions of food sustainability in the context of the expanding moral circle: a) individual health and wellbeing (might include family and close friends); b) social justice (might include future generations); c) non-human sentient animals (might include farmed animals and wild animals affected by food systems); d) the environment (might include living and/or non-living elements from the environment).

Social justice

Social altruistic behaviour stems from the premise that there is a level of concern about the welfare of other human beings (Stern et al. 1993). This might concern humans living in the present but could also expand towards future generations. At this level, the approach is still anthropocentric; however, the moral circle expands to include people who are not directly related to the moral agent. Accordingly, a focus on social development and justice has emerged in the last decades, emphasising the security and well-being of nation-states, regions and institutions, as well as social capital and community ties (Leiserowitz et al. 2006). In terms of food choice, when people expand their moral circle to include issues of social justice, they recognise that

they ought to help other people to achieve the aspirations they have for themselves; for instance, the right of access to safe, affordable and nutritious food (Gussow 1999).

Environmental identity and striving for sustainable development may also be related to concerns about the social world (Kashima et al. 2014). There is evidence to suggest that collective views, in terms of the extent to which individuals think of themselves as interdependent members of a larger community rather than isolated individuals (individualism), are associated with an environmental identity (Clayton, 2003). Several key social justice concerns are also considered to be essential issues in terms of sustainable development; examples are inter- and intra-generational equity, international responsibility, geographical equity, and people treated openly and fairly (Hopwood et al. 2005).

Non-human animals

When the circle of morality expands beyond the human species to include sentient non-human animals, there is an acknowledgement that the interests of these beings ought to be of concern. At large, this process happens when they are recognised to be sentient, having lives that matter to them (Loughnan et al. 2014). Bratanova et al. (2011) note that people increasingly care about the interests of non-human animals, even though moral concern is still limited to the capacity of animals, considered as food, to suffer. Although animal welfare has not been generally regarded as a relevant aspect for sustainable development, there is growing discussion about the acceptability of industrialised animal-raising practices (Broom et al. 2013). Consequently, when practices from the animal agriculture system are seen by the public as unacceptable, these practices cannot be considered viable and in line with sustainable development aspirations; hence, it can be understood that they also become unsustainable (Broom 2010).

The inclusion of sentient animals in the circle of moral concern is also often related to decisions regarding the composition of people's diet (i.e. the type of food consumed). Vegetarianism and veganism provide examples of such a process of internalisation, where care for the interests of animals results in a long-term commitment to meat-free or animal product-free diets (Rozin et al. 1997). Since reducing or avoiding the consumption of meat and other animal-derived products is

also considered to be a sustainable option, these are examples of a moral win-win situation, as views and values related to animals and their welfare can also promote the development of sustainable food choices.

The environment

The expansion of moral consideration towards the natural environment, regardless of its utility, is known as an ecocentric view. At this level, people attribute moral values to nature, in which all living beings, including humans, have needs for survival and well-being (Imran et al. 2014). Holding this type of environmental identity has been described as a motivator of multiple domains of pro-environmental practices, including food choice (Kashima et al. 2014). In contrast to anthropocentric concerns, which are related to the need to sustain the environment for human flourishing and well-being, ecocentric concerns are directed to the belief that nature has an intrinsic value, and this in itself is a reason to protect it (Buijs 2009).

Proponents within this paradigm claim that we have an ethical responsibility to sustain the integrity and health of ecosystems (Purser et al. 1995). In practice, it means living a life respecting and avoiding harm to nature and all the life forms that make part of it, which includes ethical borders of naturalness and integrity that should be respected (Gjerris et al. 2011). According to Gilg et al. (2005), this provides further evidence that those more heavily engaged in sustainable consumption are more likely to hold ecocentric values.

3.3 A conceptual framework for food sustainability transition

Hereafter, we outline a conceptual framework, which includes the proposed four moral dimensions of food sustainability presented previously. The model (Table 3.1) explains a process of association between potential values within each of the four categories, and their relationship with specific food sustainability goals. The chosen categories in the proposed moral circle are based on the previously presented literature discussing moral values and food choices.

The first step of the process is an analysis of the scope of moral concern. This concept is facilitated by referring to the dimensions drawn in the moral circle as a point of reference. Once the dimensions are recognised, the idea is to outline a set of views, values, and aspirations considered important – if any – concerning each of the moral categories. This also allows navigation through each of the dimensions of the circle either separately or continuously. After the values are outlined, the final step is to relate them to specific food sustainability goals that might be associated with each dimension.

Based on the evidence outlined in the previous section, once this connection is made, it is probable that actors will more likely acknowledge specific practices and behaviours related to food that might cause harm to the entities included in their moral circle. Along the same line, it will become easier to recognise the importance of embracing sustainability goals that offer an opportunity to avoid such harm. The ultimate objective here is to illustrate the relationship between values, goals and actions; and, through this process, to facilitate engagement in reflection and discussion about responsibility in the transition towards food sustainability.

By including the principle of the expanding moral circle and applying it in the way suggested by this model, it is possible to put forward as many values as are considered relevant within each of the suggested moral categories. As discussed previously, these values will be highly variable and complex depending on the social characteristics of the actors involved in the analysis. Therefore, the idea would be to encourage participants to outline as many values as possible, while investigating each of the dimensions of the circle. This showcases the advantage of focusing on a perspective that embraces value expansion rather than limiting the scope within the predominant anthropocentric paradigm.

The following section explains the practical applicability of the framework. Hence, it illustrates the potential positive impact of including one of the proposed levels in the moral circle in the conceptualisation and interpretation of food sustainability goals. The example of values related to animals is used in the analysis.

Table 3.1 – Values corresponding to each of the moral dimensions of food sustainability in the framework and how they can be related to different food sustainability goals.

	Moral dimensions	Examples of values	Examples of food sustainability goals¹
Anthropocentrism (Individualism)	1. Individual health, lifestyle, and wellbeing	-Maintain good health and wellbeing -Manage weight and shape -Improve personal economic status	-Support healthy lifestyles and human wellbeing -Eliminate nutrition-induced diseases -Promote access to affordable, sustainable-healthy food
Anthropocentrism (Collective view)	2. Social justice	-Food security of nation-states should be promoted. -Unfair treatment of people in food harvesting and production is unacceptable. -Future generations have the right of access to food resources.	-End hunger and malnutrition -End human exploitation in agriculture -Achieve global food security -Preserve nature, land and food resources for future generation
Sentientism	3. Non-human sentient animal welfare	- Animals are worthy of care and respect. -Animal suffering ought to be reduced/eliminated. - Animals have basic rights, violated by the infliction of avoidable suffering. - Animals deserve safe habitats to survive and thrive.	-Increase animal welfare and decrease suffering in food production - Transition away from large-scale animal raising operations -Improve animal raising, handling and transportation conditions - Eliminate practices that destroy animal habitats
Ecocentrism	4. Nature, planet, and non-sentient life forms	-People should respect and protect nature. -Nature should receive a moral consideration. -Nature elements are worthy of care and	-Stop agriculture practices that reduce biodiversity and promote ecosystem loss -Promote small

respect.	scale agriculture
-Disrupting the natural order should be avoided as much as possible.	-Support lifestyles that have a low impact on nature
	-Preserve life in land and water

¹Food sustainability goals are collected and adapted from: Broom 2010; Anthony 2012; FAO 2017.

Expanding the moral circle to include animals for food sustainability

Based on the evidence presented in the second section, it can be concluded that there is an increasing number of individuals concerned about the well-being of animals raised for feeding purposes. Along the same line, the preservation and protection of non-human animal species in the wild may appeal to those who care about their intrinsic value, as well as to those who cherish the conservation of biodiversity. The greatest impact by far that humans have on the interest of animals is through the practices of intensive agriculture and aquaculture for feeding purposes (Sørensen et al. 2001; Browman et al. 2019). But there is also an increasing effect on the welfare of individuals and communities in the wild by the destruction of their habitat through agricultural expansion (Fraser 2010). Nevertheless, these practices are widespread and rising worldwide, as the human population grows and societies seek economic development.

By applying the analysis described in the proposed framework, values and concerns related to non-human animal interests are recognised and placed in the moral circle. It is expected that this will enable actors to make a connection between their values and those practices and conducts around food that are in misalignment with the latter. Consequently, the recognition of moral ideals through this process of association (Figure 3.2) might facilitate the acknowledgement of responsibility in the development and/or implementation of food sustainability goals that are in alignment with the concerns of actors concerning animals.

After navigating through the framework, the importance of achieving sustainable development goals that consider the interest of animals should become evident. How the process of implementation would look in practice is an important point to be

developed in further steps, and with the active participation of actors. Along the same line, to increase the likelihood of obtaining changes that will align with these goals, concrete actions need to be taken at the political and governance levels, directly considering this largely neglected moral dimension. Nonetheless, as presented at the beginning of this paper, it can be anticipated that transitioning towards dietary patterns that replace animal-based food with plant-based alternatives; avoiding food produced in large-scale industrialised animal-raising operations; considering food alternatives that reduce animal suffering; and reducing food waste are well-researched shifts that can have positive impacts. Therefore, if actors throughout the food system acknowledge their responsibility in making a shift towards these practices, it could be considered a move in the right direction.

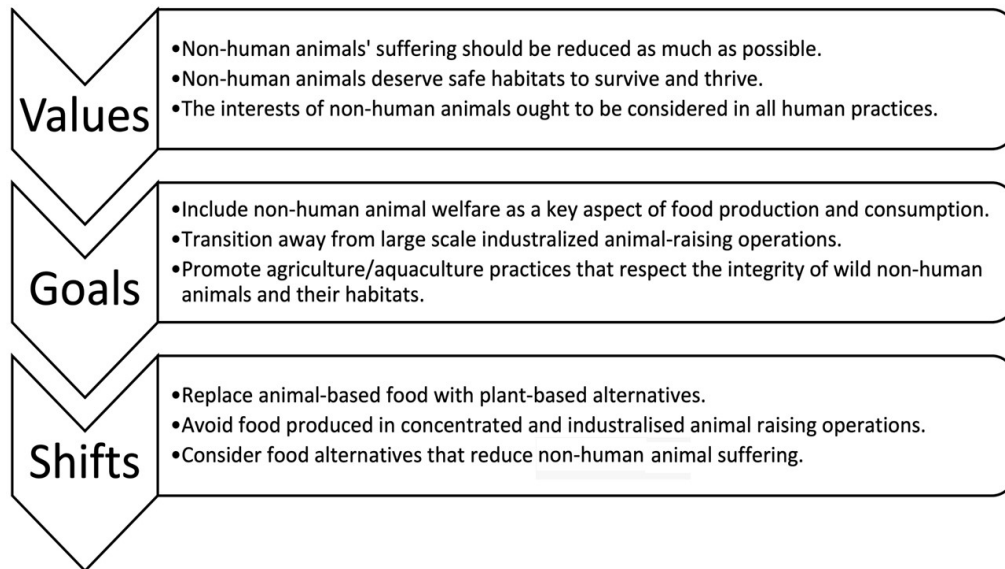


Figure 3.2 – Process of association between moral values, food sustainability goals and possible shifts, when analysing the framework for food sustainability transition at the dimension of animals.

3.4 Discussion and conclusion

If sustainable development goals are to be achieved, particularly those directly related to food and agriculture, there is a need for different perspectives in the conceptualisation of sustainable development. This new interpretation should include a broader set of moral values and concerns from potential actors of change in the food system. Under this outlook, sustainable development frameworks ought to

move from the notion of mainly anthropocentric, overly technical and top-down perspectives to include a more holistic, inclusive and participative approach. The alternative offered here is the inclusion of an expanded set of moral values so that the concept of food sustainability can speak to a wider array of potential actors of change.

Using a pragmatic conceptual method based on moral expansion, a framework for a transition towards sustainable food consumption and production has been described. The model illustrates and supports the arguments proposed in previous work (see, for example, Crimston et.al. 2018; Anthis & Paez 2021), suggesting that the implementation of an integrative approach that includes a moral expansion perspective might be an effective strategy for understanding the nature of moral progress, as well as its implications in the decision-making process. What is offered here is thus a novel interpretation of food sustainability, including a scarcely-explored set of moral dimensions, ranging from individualistic to collective, sentientistic and ecocentric perspectives.

The proposed conceptual framework could be used by governments, non-governmental organisations and educational institutions looking to promote a transition towards sustainable food practices. The model could facilitate the process of societal participation and engagement, acting as a compass in efforts to develop more effective strategies for sustainable development promotion and participation. For instance, it could act as a guide in campaigns to reduce the amount of meat consumed, promoting healthier eating patterns, less processed diets and the prevention of food waste. Therefore, it might also help in the development of more practical strategies directed to mobilise and motivate individual citizens and communities to shift their choices. In addition, it could be a useful tool for different key sectors (e.g., food producers, regional, governments, research institutes and universities) in the process of defining their values, analysing their scope of moral consideration, and aligning their practices with food sustainability goals.

It should nevertheless be acknowledged that this type of model is not without limitations. It is important to consider that the value systems underlying the proposed moral dimension of the framework are significantly more complex than

illustrated in the proposed model. As discussed in previous sections, value systems are highly variable amongst individuals and between social groups. Also, most values do not stand alone, as they are interlinked and interdependent with other psychosocial perspectives and interests, such as age, gender, culture, political inclination, economic status and religion. Furthermore, when it comes to sustainable consumption, the responsibility of individuals depends on their capacity to undertake sustainable practices in the first place; and this is of course highly context-dependent (Middlemiss 2010).

All the above-mentioned aspects might lead some people to limit their moral circle or to be resistant to expanding it towards certain entities; for instance, animals. This highlights the importance of studying the depth of the moral circle, identifying the different barriers that affect moral consideration and understanding the circumstances that promote moral expansion. For instance, even though pro-environmental values have been shown to predict certain pro-environmentalism behaviours (Whitmarsh & O'Neill 2010), it has been noted that pro-social, and even self-enhancing values, might also be predictors of climate change mitigation and nature preservation (Howel & Allen 2017). Hence, understanding the differences and parallels in the extension of moral concern of different actors can help to determine how these can translate into action-guiding goals, regardless of the level grasped in the moral circle. This article demonstrates how this process can also be applicable in the case of food sustainability.

All in all, the objective has been to demonstrate, through the development of a moral-based framework for food sustainability transition, an opportunity to transcend the dominant paradigm, showcasing the role of including moral interpretations in the advancement towards sustainable development goals. This does not ensure that all actors will respond positively to such an approach, nor that societal participation will unswervingly follow the application of the proposed framework. It does suggest that the likelihood of more a participatory citizenship willing to make significant changes might increase when actors of change acknowledge the relation between sustainable food choices and the extent of their moral circle. Hence, the greater the scope of food-related values people can grasp through this process, and the more they seek consistency between values and actions,

the more likely it is that the compelling choice will align with positive changes towards sustainable, fair and healthier food systems.

3.5 References

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"To identify with others is to see something of yourself in them and to see something of them in yourself—even if the only thing you identify with is the desire to be free from suffering."

— Melanie Joy



Chapter 4

Including animal welfare targets in the SDGs: the case of animal farming

This chapter is based on the publication:

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Abstract

There is an increasing body of literature that proposes to include animal welfare in the United Nations Sustainable Development Agenda. The main argument is the potential positive effect that improving the welfare of animals could have on the health and welfare of humans. However, recent literature suggests that the welfare interests of animals should also be considered. Based on these premises, an analysis of the practical implications of including animal welfare in the United Nations Sustainable Development Goals (SDGs) is granted. This study aims to address this topic by applying the case of animals in the agriculture and aquaculture systems. Animal farming inherently affects the welfare of a substantial number of sentient animals while the welfare of farmed animals has been connected to human wellbeing and several environmental issues. The study highlights the feasibility of incorporating the welfare of farmed animals into an updated version of the SDGs. It does so by developing a model based on a set of human-focused (anthropocentric) and animal-focused (sentientistic) targets. It has been argued that expanding the scope of the SDGs from anthropocentrism to sentientism creates a synergy between human and animal welfare and, on top of that, is progress towards sustainable development.

Keywords: Animal welfare · Sustainable development goals · Animal farming · Anthropocentrism · Sentientism

4.1 Introduction

The United Nations 2030 Agenda for Sustainable Development (2030 Agenda) is built upon a set of targets contained in 17 sustainable development goals (SDGs). These goals are meant to tackle the most pressing challenges faced by humanity in the path towards development, such as hunger, poverty, health and climate change. However, in the search for sustainable development, the interdependence between humans, non-human animals, other living organisms, and the environment has been largely overlooked. This absence is reflected in the 169 targets that compose the SDGs, which are intended to be achieved exclusively for the benefit of present and future human populations, leaving aside the interests of non-human entities. This

omission has led to growing criticism, as human-centeredness (anthropocentrism) has failed to lead humanity towards sustainable development (Kopnina et al. 2018).

Because of the anthropocentric nature of the conceptualization and interpretation of sustainable development, only a limited amount of research has been done exploring the integration of non-human animal interests in the 2030 Agenda. Nonetheless, this discourse has recently been challenged by certain scholars, who argue that the interests of non-human animals (from now on referred to as animals), should be included in the conceptualization and interpretation of sustainable development (Boscardin and Bossert 2015; Broom 2019; Torpman and Röcklinsberg 2021; Visseren-Hamakers 2020). The common denominator of these arguments is an expansion of the scope of consideration towards the health, welfare and/or rights of animals; recognizing that all, or at least some SDGs, matter to humans and animals alike.

The process of inclusion of animals in the sustainable development debate seems to have occurred chronologically. At first, the concern was about protecting their habitat; subsequently, the discussion revolved around the decline of biodiversity and extinction of species and, in recent years, a more extensive perspective has developed including animal health, welfare and rights (Nista et al. 2020). Notably, there is alarm about the effects of decreased animal health on human health, since major zoonoses are responsible for an estimated 2.5 billion cases of illness and 2.7 million human deaths a year (FAO 2018). The rapid loss of habitats for wild animals leads to defaunation, which threatens the preservation of species around the world (Krause & Tilker 2022). Meanwhile, scholars increasingly point towards the effect of animal agriculture on greenhouse gas (GHG) emissions and consequently on climate change (Hayek & Miller 2021). However, there is also growing concern about the acceptability of human practices that cause suffering, such as the confinement of farmed animals and experimentation on live animals. All these concerns have been heightened by the COVID-19 pandemic, which brought into the debate the complex link between human and animal health and welfare (Wiebers and Feigin 2020).

The emergence of research and ethical frameworks tackling the potential relationship between the interests of animals and the 2030 Agenda is noteworthy. Torpman and

Röcklinsberg (2021) call for a reinterpretation of the SDGs, while showcasing why and how the interests of sentient animals could be included in those SDGs that are sentience-centered. Visseren-Hamakers (2020) makes the case for the development of an 18th Sustainable Development Goal (SDG) that directly addresses animal health, welfare and rights. Verniers and Brels (2021), on the other hand, propose to extend SDG 3 (Good Health and Well-Being) to encompass animal health and welfare based on the potential benefits for human health and well-being. Meanwhile, the results of Keeling et al. (2022) directly show a potential co-benefit of improving animal welfare in the achievement of the SDGs and achieving the SDGs on the improvement of animal welfare, supporting the need for a more concrete connection between the two.

In line with these advances, the United Nations has officially acknowledged the absence of animal welfare in the 2030 Agenda; highlighting, within the Global Sustainability Report for 2019, the importance of developing rules and regulations to safeguard animal well-being (UN, 2019). More recently, in March 2022, the United Nations Environment Assembly adopted a resolution regarding the animal welfare–environment–sustainable development nexus, acknowledging, among others, that: “animal welfare can contribute to addressing environmental challenges, promoting the “One Health” approach and achieving the Sustainable Development Goals”. With this, the assembly requested the preparation of a report about the nexus between animal welfare, the environment, and sustainable development; setting a precedent for a new understanding of sustainable development that considers animal welfare.

Animal welfare is a complex and highly contested concept, with a range of possible definitions and interpretations, which also depend on debated scientific, cultural and ethical perspectives. Historically, animal welfare has been largely defined based on the five freedoms: freedom from hunger and thirst; freedom from discomfort; freedom from pain, injury and disease; freedom to express normal behaviour; and freedom from fear and distress (FAWC 2010). More recently, this approach has been challenged with new concepts that emphasize the need to minimize the negative experiences of animals, while providing them with opportunities to have positive experiences (Mellor & Beausoleil 2015). Others have proposed an understanding of animal welfare from a wider outlook, one that includes the individual animal; but

also, an aggregate perspective that accounts for the welfare status of collectives and the welfare quality of systems (e.g. food production) (Keeling 2009; Meijboom et al 2023). Since it is not within the scope of this study to settle on a conclusive definition, animal welfare is applied as an overarching guiding term that refers to an optimization of all the possible welfare interests of sentient animals, individually and collectively. In the context of sustainable development, this requires prioritizing systems and practices that enable positive experiences (e.g. good health, pleasure and joy) and reducing, or possibly phasing out, practices and systems that perpetuate preventable negative experiences (e.g. pain, anxiety and fear).

The specific reference to sentient animals for this study is drawn from the work and conclusions of scholars such as Boscardin & Bosert (2015), Drury et al. (2023) and Torpman & Röcklinsberg (2021). They argue that the central argument to include animal welfare interests in the sustainable development debate is sentience, since according to their view, it is this characteristic that makes their interests morally relevant. Sentience is also a highly debated term; but within animal science, it commonly refers to the capacity to experience subjective positive and negative experiences, such as pain, suffering, anxiety, pleasure, happiness and joy (Varner 2012). Under this definition, a fair amount of animal species are considered sentient, and from those, a considerable amount are under direct or indirect human care and/or influence. Hence, humans are morally responsible for taking their welfare interests into account when developing sustainable development goals that affect them in any capacity.

The explicit mention of animal welfare in global sustainability research, as well as in governance reports and resolutions, is an important step towards a notion of sustainable development that includes the interests of animals. Nonetheless, animal welfare continues to be a blind spot in the 2030 Agenda, as reflected in the 17 SDGs, where there is no identifiable reference to the interests of animals. In a critique of this absence, Bergmann (2019) calls for an urgent progression, by suggesting: “a conception of sustainability that by definition and declared focus includes the concerns and interests of animals, their protection and their flourishing” (p.3). If this conception should come to fruition, it would certainly require a reimagination of the

current 2030 Agenda, through the development of a new version of the SDGs that directly accounts for the welfare interests of animals.

This study aims to contribute to this potential reconstruction, by providing a pragmatic view of how a sequel to the 2030 Agenda that explicitly includes animal welfare would look like. It does so by taking a theoretical approach as a framework to illustrate the hypothetical applicability, of including concrete animal welfare targets in each of the 17 SDGs. For this, the case of animals raised in agriculture and aquaculture systems (farmed animals) is explored. This case has been selected because it clearly showcases the interdependence of animals and humans in the context of sustainable development. Animal farming has been extensively studied as a predominant contributor to climate change, land degradation, water scarcity, human disease, and animal suffering; and as such, it represents a compelling and practical case for considering animal welfare in a potential new version of the SDGs.

The paper is structured as follows. First, it reviews the history and current state of animal farming in the context of the sustainable development debate. Second, it provides a comprehensive analysis connecting the welfare of farmed animals to several key sustainable development objectives. Third, it presents a theoretical model that illustrates potential animal welfare targets, from an anthropocentric and a sentientistic perspective, for each of the 17 SDGs. The final section offers a discussion and a conclusion, including quandaries that remain to be solved, to facilitate the inclusion of animal welfare targets in a renewed version of the SDGs.

4.2 Animal farming and sustainable development

According to the UN Food and Agriculture Organization (FAO), the animal agriculture sector can potentially contribute directly or indirectly to each of the SDGs (FAO 2018). Nonetheless, the upscaling of intensive animal agriculture and aquaculture brings along a series of effects, which are evident both in the state of the environment and in the well-being of people and animals alike (Gjerris et al. 2011; Henning 2014). It has been estimated that globally the number of animals raised in industrialized/intensive farms (factory farming) could be over 90%; including 74% of farmed land vertebrates and virtually all farmed fish (Anthis & Anthis 2019). Each

year, 80 billion farmed animals are slaughtered for meat production (Ritchie et al 2017), while 80 million tons of fish-derived products are obtained from aquaculture (Soares Calixto et al. 2020). From these, most, if not all, raised species are considered considerably sentient (Balcombe 2016; Birch 2017; Broom 2016).

More than thirty years ago, George (1992) wrote about the ethical responsibility to take the welfare of animals into account in the sustainable development debate; concluding that a morally coherent sustainable agriculture must include the welfare interests of animals. While concerns about animal welfare in agriculture have been declared for decades, the interests of farmed animals have historically been disregarded in the official sustainable development debate (Vinnari et al. 2017). Previous and current sustainability literature generally refers to animals as livestock, units of production, and/or resources, showcasing their role as meat and protein, or it is mainly concerned with the potential threat of animal farming to human well-being (Arcari 2017). Under this anthropocentric paradigm, the current premise is one of intensification and higher productivity, to supply growing demand, while trying to tackle GHG emissions. If this trend continues, it seems reasonable to assume that providing farmed animals with optimal standards of welfare will be economically and practically unattainable.

Despite the absence of farmed animal welfare in local and global sustainable development frameworks, there are several practices from the animal farming system, which are increasingly seen by the public as unacceptable. For instance, inappropriate live animal transport, genetic engineering/gene editing, and confinement in small cages or crates are often condemned because they cause unnecessary negative welfare states for animals (Broom 2016). Notwithstanding the underlying economic gain, if these practices are not considered viable by a substantial proportion of the public, they can no longer be considered sustainable (Broom 2010). Hence, if the welfare of farmed animals is progressively becoming a matter of societal concern, the practices that threaten this welfare will need to be revised, replaced and some even eliminated, so that animal farming can be considered within acceptable sustainable development standards.

Suboptimal states of welfare are not only a matter of concern because of the pain and suffering inflicted on farmed animals, as their welfare also has direct implications for the health and welfare of humans. For instance, when the health of farmed animals is compromised, there can be resulting significant negative human health consequences, due to the use of non-therapeutic levels of antibiotics for growth promotion, and the consequences of intensification, including the risk of zoonotic disease (Goldberg 2016). This connection has been both well documented and thoroughly described, in previous work under the concepts of “One Health” and “One Welfare”. The One Health approach promotes the integration of human, animal, and environmental health through communication and collaboration among professionals in different fields in animal care and research (Monath et al 2010), while the One Welfare approach recognizes the connection between the well-being of humans and animals through a better understanding of the value of high welfare standards (Garcia Pinillos et al. 2016).

Moreover, a range of current animal farming systems have been identified as a threat to the achievement of several other sustainable development targets, including public health; reducing GHG emissions; tackling land degradation; avoiding water contamination; and preventing biodiversity loss (Willett et al. 2019). In general, factory farming is considered the most damaging, in contrast with small-scale farms that are also owner-operated. Hence, the expansion of factory farming systems is a threat to sustainable development; and arguably, inherently incompatible with any account of good welfare for the animals reared within them (Rawles 2012). It is worth noting that small-production animal farming still raises sustainability and animal welfare issues, as not all small-scale production systems meet welfare and sustainable development standards. These concerns should be carefully considered when judging if small-scale farming is a suitable alternative. However, issues such as climate change, non-therapeutic use of antibiotics, and animal welfare are far more pressing in high-intensity production than in small-scale methods (Goldberg 2016).

Based on this evidence, there is an increasing sense of urgency to move away from animal farming methods that are known to cause suboptimal welfare states, while adopting approaches that pay full regard to their welfare (Kumar et al. 2019). At first glance, a transition away from factory farming towards smaller-scale operations

could have the potential to reduce the number of animals raised in the agriculture system; possibly liberating space and resources that could be destined to improve the welfare of those that remain in the system. But also, to tackle factory farming, direct attention should be put into fostering alternatives to intensive animal farming, such as plant-based and/or plant-predominant lifestyles (e.g. veganism, vegetarianism, flexitarianism) in regions where this transition is socioeconomically accessible and practicable. This shift could significantly reduce the reliance on factory farming, prevent further negative environmental consequences, and considerably reduce the number of animals that could potentially be exposed to suboptimal welfare states (Pluhar 2010).

4.3 Connecting farmed animal welfare to the 2030

Agenda

To ensure the sustainability of animal farming systems, present and future sustainable development directives will need to consider the interests of animals and come up with targets that directly account for their welfare. In this section, we analyze the implications of considering farmed animal welfare in the context of several elements of the 2030 Agenda. Subsequently, we describe a series of proposed animal welfare targets for each of the 17 SDGs, both from a human-focused and an animal-focused perspective. The main purpose is to showcase how some animal welfare targets, (in this case farmed animals), can be reconciled with and become complementary to current sustainable development targets while offering a first glance at how these could be included in the SDGs.

Poverty (SDG1)

Despite the impacts of animal agriculture on the well-being of humans and the state of the environment, it is still considered necessary to mitigate poverty to improve the welfare of those who suffer from it. According to the United Nations, over 1.3 billion people around the world raise animals for human use, while rearing animals supports the livelihoods of millions of people worldwide, some of them coming from poor communities (FAO 2015a). At the same time, some links can be made between animal welfare optimization and agriculture productivity. For instance, it has been suggested that well-managed and healthy animals are more profitable and can

reduce farming costs, while improving animal handling can lead to an increase in meat yields (Garcia 2017). Under these considerations, animals with inadequate health and poor welfare could represent an economic loss for poor farmers and a threat to their livelihoods. Hence, it is important to envision a model where the route out of poverty for humans includes an improvement to the welfare of farmed animals, particularly in rural and impoverished areas.

From a moral perspective, poverty reduction should not come at the cost of animal welfare reduction to meet the consumption demand, particularly in countries where alternatives are readily available. Therefore, communities that are not dependent on raising animals for economic growth and stability should start reducing their production and consumption of animal-derived products, while looking for alternatives to enable the elimination of facilities with suboptimal welfare management. At the same time, access to enough food from plant-derived sources alongside ethically and sustainably raised animal-derived products ought to be made available to prevent the spread of factory farms in impoverished regions, which could bring about further reduction of animal welfare and other negative impacts related to human and environmental health.

Hunger and malnutrition (SDG 2)

Animal-derived foods can be a significant source of nutrients for humans, particularly in poor countries (FAO 2018). At the same time, animals with poor welfare constitute a suboptimal source of nutrition and a risk to human health (Skaperda et al. 2019). Therefore, raising animals with good states of welfare is an important aspect in the elimination of hunger, and the provision of access to healthy nutrition, particularly for poor communities. Nonetheless, achieving the goal of zero hunger might not require an expansion of factory farming, which is incompatible with raising animals with optimal welfare. In fact, an overconsumption of animal-derived food in the last decades has been increasingly noted, particularly in Western countries, but progressively in developing countries; bringing about illnesses caused by overconsumption, such as heart disease, hypertension, and diabetes (Nesheim et al. 2015; Popkin 2002). Therefore, there are potential benefits to a reduction in the consumption of factory-farmed animal products in certain regions, particularly for

public health, leading to the improvement of the nutrition quality of westernized diets high in animal products (Hemler & Hu 2019).

Despite the potential public health benefits of scaling down animal agriculture in some regions, the expansion of factory farming worldwide is on the rise (Tsoraeva et al. 2020). This trend compromises the welfare of a growing number of animals, who are confined to small spaces, transported for long distances, deprived of their natural food and feeding behaviour, and, in some instances, exposed to prolonged hunger and malnutrition (Velarde & Dalmau 2012). Therefore, while some developing communities might depend on animal agriculture to tackle hunger and work towards its elimination; other so-called developed communities will benefit from a transition away from it, aiding in the process of eliminating hunger, and preventing the spread of factory farms in developing regions.

Health, well-being, and peaceful societies (SDGs 3 & 16)

Raising animals for consumption, particularly in factory farms, but also in neglected small-scale farming operations, has serious negative implications for the well-being of humans and animals alike. Humans can be exposed to zoonotic diseases because of handling and overcrowding conditions of industrialized farming (Woolhouse & Gowtage-Sequeria 2005). Crises such as the COVID-19 pandemic, and previous pandemics, like the avian and swine flu, are examples of the human health threats of raising animals for human consumption (Wiebers & Feigin 2020). Moreover, communities are exposed to contamination of soil, water, and air, and the overuse of antibiotics, which can bring about health complications (Goldberg 2016). On the other hand, due to common practices, such as confinement, mutilation, and genetic engineering/gene editing, animals also experience unacceptable negative effects on their health and welfare; including physical pain, anxiety, frustration, anger, helplessness, loneliness, boredom, and depression (Kona-Boun 2020; Mellor 2016).

When it comes to mental health and emotional well-being, a humane and peaceful society seems to be one low in violence and cruelty towards both humans and animals. According to García Pinillos et al. (2016), improving animal welfare can also have important impacts on the reduction of social violence. The authors point towards a “One Welfare” approach, where promoting the welfare of animals could

help to improve the well-being of humans, through a reduction in the incidence of crime, domestic violence, and abuse of elderly people and children. This view has been previously discussed in philosophy, where the level of compassion towards animals has been described as an indicator of the goodness of character of human beings (Puryear 2017). Empirical research has also found evidence for the coexistence of abuse towards animals and several forms of violence among humans (Flynn 2011). This suggests that an integrative perspective, where the welfare of farmed animals is included, could play an important role in the pursuit of global well-being and more peaceful societies.

Education (SDG 4)

The 2030 Agenda emphasizes the central place that education has in the achievement of more sustainable societies. Farmed animals experience a range of welfare issues worldwide, which can have negative implications for human societies, other living organisms and the state of the environment; however, these topics are scantily discussed in educational settings. Kopnina & Cherniak (2015) explain that, historically, education programs addressing animal welfare have not been connected to education for sustainable development. They argue that animal welfare education, including knowledge, understanding, skills, attitudes, and values related to human involvement in the lives of animals should be included at the core of education for sustainable development; as this could promote a change in the governing instrumental attitude towards other living beings and nature. This argument is supported by the findings of Keeling et al. (2019), which suggest that education related to animal care and welfare can result in a next generation of consumers that can develop the market for better welfare products. It is also indispensable that education reaches farmers and those interacting with animals in farms and raising facilities, since this can change attitudes towards animal welfare and increase compliance with welfare regulations (Keeling et al. 2019). Hence, embracing a culture of care and respect for animals, and facilitating education about the welfare of farmed animals, could bring about important societal changes towards the achievement of several SDGs.

Inequalities (SDGs 5 & 10)

Despite its relevance in the path to reducing social and gender inequalities, animal agriculture is a scantily discussed topic in the context of these goals. An example is the disadvantage in the animal agriculture industry for smallholder farmers, who generally cannot compete with large-scale farming. This is of particular concern for poorer countries, where small farming has the potential to reduce rural poverty and food insecurity, support the development of the rural economy, and help prevent rural migration (Hazell 2005). However, in developed countries, small-scale farming is also becoming economically non-viable, while being taken over by factory farming (Hazell 2005). At the same time, there is clear inequity in the way animals are treated worldwide, and high variability in welfare standards, depending on species, type of industry, region, and the cultural setting where they are raised and slaughtered. Because of this lack of consensus, a large amount of farmed animals have to endure lives of great suffering (Kona-Boun 2020).

The health and welfare of farmed animals can also be linked to the goal of gender equality. According to Sumner and Llewelyn (2011), the process of industrialization in agriculture has alienated farmers from their land; this is particularly true for women, who have been marginalized and secluded from agricultural processes and management. Yet, as stated by FAO, women, particularly in rural communities, are largely dependent on animals for sustenance (FAO 2015b), which means they can benefit from keeping animals in good health and welfare, reducing the chances of death and the resulting economic losses. Therefore, the path towards an end to gender inequality could be aided by connecting women back with agriculture and their animals; while empowering them to prioritize animal welfare. In this sense, the goal should be to promote the participation of women in the management and decision-making of agricultural systems, since this could help to improve their livelihoods and enhance their role as responsible animal caregivers.

Water (SDG 6)

Clean water and sanitation are key for the health and development of all humans, and this is compromised by several animal agriculture practices (Hoekstra 2010). Largely, there is a significant impact of livestock, predominantly factory farming, on the quality and replenishment of fresh water (Nesheim et al. 2015). Moreover, the

antibiotics and hormones contained in animal waste, and the agricultural pesticides and fertilizers used to grow crops for animal feed, have polluting effects on aquifers (Steinfeld et al. 2006). There is also a significantly high water intensity in the production of animal products. Human consumption of animal products is the main agricultural source of water use globally, directly contributing to water scarcity in some regions (Scherer et al. 2019). Therefore, raising (fewer) animals that have good welfare in optimal environmental conditions, eliminating overcrowded systems, and transitioning away from animal-based in favour of plant-based lifestyles are all necessary measures to secure clean, sufficient, and healthy water.

However, the threat of water scarcity and contamination is not only a concern for humans. Farmed animals are also affected by the quality and availability of water (Von Keyserlingk et al. 2016). Worldwide, there are millions of animals exposed to low-quality water amongst other poor environmental conditions (Hooda et al. 2000). This has a direct effect on the quality of life of farmed animals, reducing their welfare and causing suffering and starvation. Hence, the goal should be to achieve universal and equitable access to safe water for all humans, while ensuring the same for all animals raised for human use and consumption.

Energy (SDG 7)

Despite the development of technological alternatives, farmed animals and their waste are still considered an important element in energy and agricultural production in some regions. Draught animals represent a notable low-cost agricultural energy source, particularly in some developing countries. Many of these animals are owned by poor people, who cannot afford motorized alternatives. Thus, they work in harsh environments where they are deprived of food, shelter, and appropriate handling; in addition to being exposed to a wide spectrum of welfare issues, such as limb disorders, skin lesions, negative emotional states, and malnutrition (Pritchard et al. 2005). According to Mota-Rojas et al. (2021), besides the suffering inflicted on them, draught animals in poor states of welfare represent a loss in productivity and efficiency for humans. On the other hand, there are also risks to human health, since improper handling can increase the fear perceived by the animals and induce reactions that can compromise the physical and emotional integrity of animal handlers (Mota-Rojas et al. 2021). Therefore, the focus should be

to significantly increase the welfare of draught animals to improve their productivity; while working towards the development and access to mechanized alternatives, where this is accessible and practicable. This could reduce the number of animals potentially exposed to suboptimal welfare states.

The use of animal waste in the production of biogas is considered a positive mitigation option to reduce the energy use from fossil fuels in some regions and systems (Purdy et al. 2018). Nonetheless, this process does not come without concerns for animal welfare and other potential human health and environmental hazards. There are concerns, for instance, about the housing conditions of the animals from which the manure is sourced, as there is no guarantee that they are kept under good welfare conditions, while there are also potential health hazards for humans and animals because of the evaporation of ammonia from manure (Lybæk & Kjær 2019). Therefore, to consolidate the sustainability potential of this industry, the welfare of animals should be guaranteed, while avoiding production intensification by promoting animal-free sustainable energy alternatives.

Economic growth, decent work and innovation (SDGs 8 & 9)

The emphasis of the sustainable development discourse around economic growth at the expense of farmed animal suffering has been increasingly criticized by scholars (Kopnina 2016) and condemned by a sector of the public, particularly in developed countries (Broom 2019). Nonetheless, the livelihoods of millions of people still depend on animal farming, which raises the question if societies can develop their economies while optimizing the welfare of farmed animals. Practical evidence demonstrates that improved animal welfare can result in superior yields since better-cared animals are generally healthier and more productive (García Pinillos et al. 2016). However, there is also scepticism about the possibility of obtaining economic growth while improving the welfare of animals. A fundamental dilemma in modern animal production is that what is good for animal welfare (e.g., sufficient space), is not always the most profitable option (Sorensen et al. 2001). Therefore, there is a need to develop and promote concrete alternatives that are profitable but not at the expense of animal welfare (e.g. “Welfare credits”) (Lusk 2011), while exploring ways to match welfare concerns from consumers with their purchases. This could enhance the market for good welfare products (Lusk & Norwood 2011), counteracting the

current trend of prioritizing cheap products from animals raised in poor welfare conditions.

Aside from the fact that animal farming provides income and economic opportunities for many people; at the same time, those who are most badly affected in terms of labour conditions are some of the workers in the animal farming system itself, particularly in slaughterhouses. It has been argued elsewhere that the physical and emotional effects of such employment, especially for those who work at the slaughtering stage, are considerable (Pluhar 2010). Meanwhile, there is evidence to suggest that farms with well-kept animals are generally associated with positive farmer well-being and could also improve their livelihoods (Hansen & Østerås, 2019). This is an important aspect when establishing targets for decent jobs, as both farmers and slaughterhouse workers should have alternatives to transition towards systems that prioritize good animal welfare or to abandon animal farming in pursuit of other profitable alternatives.

Sustainable cities and communities (SDG 11)

As population increases in cities and towns, the augmented demand for animal-derived products is driving a shift to more productive and efficient animal farming systems. Meanwhile, the proximity to local markets makes urban animal production attractive, especially for perishable foodstuffs (FAO 2021). Under this scenario, factory farms will continue to increase (Fiala 2008), and as urban areas expand due to growing urbanization, humans in cities seem to be destined to increasingly collide with farmed animals. However, this process does not come without environmental risks, health hazards for humans, and immense suffering for animals.

Animal farming is a large contributor to the emission of GHGs (Gjerris et al. 2011; Steinfeld et al. 2006). Thus, there are clear threats of factory farming to the development of sustainable cities and communities, particularly through the effects of climate change, such as drought and an increase in extreme weather events. Moreover, there is a risk of contamination, exposure to toxic chemicals, and biological hazards, such as zoonotic diseases, from raising and transporting of animals through towns and cities (Rule et al. 2008). On the other hand, the estrangement of the human-farmed animal relation and the commodification of

farmed animals has led people in urban areas to develop blind spots to the exploitation and suffering of a continuously increasing number of these animals (Arcari et al. 2021). This fact signals the need to rethink the way people relate to animal farming and re-imagine urban and periurban agriculture, towards systems that support the welfare of all citizens, humans and animals alike.

Production and consumption (SDG 12)

Achieving better welfare for farmed animals requires a clear path to generate change in the whole system, from production to distribution, to retail and consumption. Significant work has been done showcasing the benefit of shifting animal farming practices, from the current overcrowded factory farm systems to smaller-scale regenerative facilities (Broom 2010; Henning 2011; Pelletier & Tyedmers 2010). Moreover, some authors have emphasized the connection that alternative production systems could have, both in terms of sustainable development and animal welfare. For instance, according to Broom et al. (2013), when compared with widely used livestock production systems, silvopastoral systems can provide efficient feed conversion, higher biodiversity, enhanced connectivity between habitat patches, and improved animal welfare, so they can replace existing systems in some parts of the world. Hence, promoting animal welfare as a target of sustainable production systems could be a gateway to improving resource efficiency and preventing environmental degradation.

Another important shift that has been explored as a way to improve animal welfare and increase sustainability at the consumer level, is promoting a transition from animal-based towards plant-based lifestyles (Asgar et al. 2010; Joshi & Kumar 2015; van der Weele et al. 2019). Furthermore, emphasizing changes in the consumption of animal-based products in a sustainable development context may also create animal welfare consciousness among producers. If the quantity of animal-derived products consumed decreases due to perceived poor animal welfare, the producers have the incentive to improve the welfare standards to be able to increase income/revenues (Vinnari & Tapio 2012). Therefore, efforts should be directed to increase the convenience and availability of plant-derived alternatives in places where this is accessible and practicable while guaranteeing the availability and affordability of products derived from animals raised under optimal welfare conditions.

Climate change (SDG 13)

Several studies have explored the impact of animal farming on global and regional climate change. It is estimated that at least 15–22% of global anthropogenic GHG emissions (Gerber et al. 2013; Steinfeld et al. 2006) and 57% of emissions from food production (Xu et al. 2021) stem from animal agriculture. Similarly, in the European Union, the meat and dairy sectors account for 15% of total GHG emissions, with livestock husbandry and cultivation being the largest emission sources (Aan den Toorn et al. 2021). Thus, one of the main targets for climate change in the context of agriculture is shifting toward new practices that can replace factory farming to mitigate and prevent further impacts (Hedenus et al. 2014; McMichael et al. 2007; Springmann et al. 2016). Particularly, agricultural systems and dietary changes that substitute animal-derived products with plant-derived products may hold a substantial climate change mitigation potential (Pimentel & Pimentel 2003; Sabaté & Soret 2014). Therefore, promoting plant-based production systems, wherever possible and practicable, could have benefits in terms of animal welfare and climate change mitigation, by reducing GHG emissions and reducing the expansion of factory farms where animals are exposed to suboptimal welfare states.

Besides the imminent threat that climate change poses for humans, the impacts on the welfare of farmed animals should not be overlooked. There are threats to animals, especially for vector-borne diseases, since warmer temperatures increase the winter survival of vectors and pathogens. Impacts on feed crops, forage, and grasslands available for animals have also been observed (FAO 2018). Simultaneously, the upscaling of “landless” intensification of production and other technological approaches developed to reduce GHG emissions are of major concern, as they can cause a significant reduction in the welfare of animals (Hayek & Miller 2021). Therefore, while there is an imminent need to develop alternatives to counteract the negative effects of animal agriculture, it is important to ensure that the innovations and measures explored to mitigate climate change do not compromise animal welfare.

Life on water and land (SDGs 14 & 15)

Various animal agriculture systems, particularly factory farms, have negative side effects on the integrity of many life forms on land and water. Factory farming is

considered one of the main threats to the preservation of wildlife and ecosystems (Garnett 2013). The destruction of land and water habitats to expand animal agriculture poses a threat to the welfare of a vast amount of land and aquatic animals; but also, to the biodiversity and natural resource availability for humans. Moreover, the pollution generated by animal farming facilities has significant effects on the water quality, changing its chemical composition, preventing any type of life form from thriving, affecting the welfare of aquatic animals, and creating areas that cannot support life (Núñez-Delgado et al. 2002).

The 2030 Agenda envisages a world where human beings coexist in harmony with the environment and where protection is provided for wildlife and other living species. Nonetheless, animal farming through practices—such as electric shocking, tail docking, dehorning, iron branding, early mother-offspring separation, and genetic engineering/gene editing, to mention a few—have been found to cause significant suffering to land and aquatic farmed animals (Tarazona et al. 2019). Therefore, when considering the integrity of life on land and water, it is imperative not to overlook the integrity and protection of farmed animals. Despite not being recognized as such in the 2030 Agenda, these animals are a significant fraction of life on land and water, which means their interest should be accounted for when considering these goals.

4.4 Farmed animal welfare targets for the SDGs

As portrayed in the previous analysis, the case of farmed animals showcases the importance of considering animal welfare in the context of sustainable development objectives. It has been argued that the welfare of humans and farmed animals are intimately connected, and as such, it is imperative to rethink the current SDGs, so that each one of them includes targets for animal welfare. There are animal welfare targets that can be complementary in some cases, and crucial in others, for the achievement of the current goals based on human-focused interests (anthropocentric). Nonetheless, it is also necessary to establish targets that are based on animal-focused interests (sentientistic), as a range of animal farming practices bring about unacceptable suffering to highly sentient animals. Below, we describe a set of animal welfare targets for each of the 17 SDGs, from both an anthropocentric

and sentientistic perspective. The proposed targets (Table 4.1), have been developed based on an analysis of the 2030 Agenda and the previous review of the literature.

SDG 1—No poverty

- *Anthropocentric targets*

Prioritize strategies to improve animal welfare in animal farming-dependent poor communities, to prevent economic losses while increasing efficiency and profit in the production process.

- *Sentientistic targets*

Ensure that animal welfare is not compromised in the process of eliminating poverty, by prioritizing and supporting owner-operated small-scale farms over factory farms in poor communities.

SDG 2—Zero hunger

- *Anthropocentric targets*

Prioritize farmed animal welfare, as a strategy to improve food yields and quality for communities that depend on animal farming to obtain appropriate nutrition.

- *Sentientistic targets*

Ensure the prevention of hunger and malnutrition for all farmed animals, by providing access to biologically and behaviourally appropriate feeding conditions.

SDG 3—Good health and well-being

- *Anthropocentric targets*

Promote welfare in all animal farming systems, to increase resistance to zoonotic diseases, avoid health risks for workers, and prevent possible environmental contamination.

- *Sentientistic targets*

Work towards phasing out raising and transportation practices that result in suboptimal welfare for farmed animals, while providing them with appropriate and timely healthcare.

SDG 4—Quality education

- *Anthropocentric targets*

Offer animal welfare education in the context of sustainable development education to the general public and farmers to promote more sustainable lifestyles and to encourage the creation of healthier and more productive farms.

- *Sentientistic targets*

Facilitate education that embraces a culture of care and respect for farmed animals, to bring about changes in the views and values of the public that can generate welfare optimization in animal farming.

SDG 5—Gender equality

- *Anthropocentric targets*

Improve the welfare of farmed animals to enhance the livelihoods of women who depend on them, thus strengthening their role in agriculture and society.

- *Sentientistic targets*

Enhance the role of women in agriculture and as animal caregivers, teaching them about animal welfare and emphasizing their potential to provide care and respect for farmed animals.

SDG 6—Clean water and sanitation

- *Anthropocentric targets*

Work towards a reduction of factory farming to improve the living conditions of farmed animals and minimize the release of hazardous materials into water sources for households and communities.

- *Sentientistic targets*

Keep all water sources for farmed animals under adequate sanitary conditions, including access to sufficient water quality, free of chemical residuals and harmful organic byproducts.

SDG 7—Affordable and clean energy

- *Anthropocentric targets*

Prioritize the welfare of draught animals to enhance their performance and increase their lifespan, providing an improved energy source for those who depend on them for energy and transportation.

- *Sentientistic targets*

Facilitate animal-free alternatives and make them accessible, to reduce the dependence on draught animals for agricultural work and transportation.

SDG 8—Decent work and economic growth

- *Anthropocentric targets*

Promote local small-scale systems that prioritize animal welfare to increase the economic value of animals with an emphasis on impoverished regions.

- *Sentientistic targets*

Provide working and economic opportunities for plant-based farming systems and prioritize animal farming systems that optimize the welfare of animals.

SDG 9—Industry, innovation and infrastructure

- *Anthropocentric targets*

Promote innovation opportunities to develop new systems and technologies that enhance animal welfare and reduce the dependence on factory-farmed animals to supply the demand for animal products, while reducing the environmental cost.

- *Sentientistic targets*

Prioritize the development of plant-based farming systems, while using innovation and technology to develop animal farming systems that provide animals with optimal welfare.

SDG 10—Reduced inequalities

- *Anthropocentric targets*

Harmonize animal welfare globally to optimal standards, while prioritizing small-holder farmers that concentrate on improving animal welfare to enhance their livelihoods and reduce inequalities.

- *Sentientistic targets*

Promote legislation, economic investment, and management programs that prioritize animal welfare in farming systems, harmonizing welfare to optimal standards, irrespective of species and/or location.

SDG 11—Sustainable cities and communities

- *Anthropocentric targets*

Work towards the elimination of factory farms in and near cities to improve animal welfare, prevent landscape deterioration and avoid public health risks.

- *Sentientistic targets*

Provide farmed animals raised in and near cities with adequate shelter and optimal living and transportation conditions by avoiding overcrowding and improving access to species-appropriate spaces.

SDG 12—Responsible consumption and production

- *Anthropocentric targets*

Promote a change in production and consumption patterns to use animal-derived products more efficiently, reducing the waste of resources and the negative environmental and health consequences of overconsumption.

- *Sentientistic targets*

Optimize welfare standards in all agricultural systems by promoting production and consumption systems that favour sustainably produced plant-derived products and animal-derived products from owner-managed small-scale animal farming over those coming from factory farming.

SDG 13—Climate action

- *Anthropocentric targets*

Ensure optimal farmed animal welfare to improve production efficiency and longevity and reduce GHG emissions.

- *Sentientistic targets*

Ensure that climate change prevention and mitigation practices include the welfare of farmed animals and the required adaptation of their living spaces.

SDG 14—Life below water

- *Anthropocentric targets*

Ensure appropriate management of animals in aquaculture, adapted to their environmental and behavioural needs, to prevent suboptimal welfare states that can affect human health and reduce productivity.

- *Sentientistic targets*

Transition away from aquatic animal farming practices that do not respect their biological and behavioural needs, impacting their welfare negatively.

SDG 15—Life on land

- *Anthropocentric targets*

Develop approaches to animal farming that are in line with each species' needs, to improve animal welfare, reduce soil loss, improve carbon sequestration, and increase the diversity of soil biota.

- *Sentientistic targets*

Include the provision of safe and appropriate environments for terrestrial-farmed animals in the management of land ecosystems in all regions.

SDG 16—Peace, justice and strong institutions

- *Anthropocentric targets*

Promote a culture of respectful handling of farmed animals to prevent animal abuse, as an aid in the construction of more peaceful societies and the reduction of social violence.

- *Sentientistic targets*

Promote non-discrimination based on species, providing all farmed animals with their needs, regardless of species, and ensure optimal welfare, irrespective of the place or culture where they are raised.

SDG 17—Partnerships for the goals








- *Anthropocentric targets*

Enforce farmed animal welfare agendas to obtain positive effects on wider areas of societal concern, such as human health, climate change, farming sustainability, and economic development.

- *Sentientistic targets*

Support public and private partnerships to develop technology, industry, and governance instruments towards ending the dependence on animal farming systems that do not guarantee optimal welfare for animals.

Table 4.1 – Summarized human-focused and animal-focused animal welfare targets for each of the 17 SDGs.

SDG	Human-focused targets	Animal-focused targets
	Prioritize animal welfare in poor communities that depend on animal farming to improve their livelihoods.	Prevent the advance of factory farming in the process of eliminating poverty to reduce the number of animals with suboptimal welfare
	Promote farmed animal welfare to improve food yields and the nutritional quality of animal-derived products	Guarantee access to sufficient and appropriate food to prevent hunger and malnutrition in all farmed animals
	Promote farmed animal welfare to prevent zoonotic diseases and other hazards to human health	Provide all farmed animals with appropriate and timely healthcare to optimize their welfare
	Embrace farmed animal welfare topics in education to promote sustainable lifestyles and encourage healthier and more productive farms	Promote the inclusion of animal welfare topics in education to foment a culture of respect for the welfare of farmed animals
	Prioritize the welfare of farmed animals to improve the livelihoods of women in agriculture	Empower women to prioritize farm animal welfare by connecting them back with agriculture
	Improve the living conditions of farmed animals to prevent contamination of water sources for humans	Ensure access to sufficient and clean water sources for farmed animals to avoid compromising their welfare
	Prioritize the welfare of draught animals to increase their productivity and avoid risks to human health	Facilitate alternatives to the use of animals and animal-derived products as sources of energy and transportation

	Promote farmed animal welfare to increase the economic worth of animal-derived products from animals raised with optimal welfare	Provide economic opportunities for the development of (optimal welfare) animal-based and (sustainable) plant-based systems
	Emphasize the value of innovative technological alternatives to replace animal-derived products from animals with suboptimal welfare	Put innovation at work in the development of alternatives to animal-derived products from animals with suboptimal welfare
	Support small farmers that invest in animal welfare to ensure their economic viability and improve their livelihoods	Harmonize farmed animal welfare to the highest standards irrespectively of species and/or location
	Work towards the reduction of factory farming facilities in and near cities to avoid concerns related to public health	Provide farmed animals in and near cities with optimal living and transportation conditions to optimize their welfare
	Promote farmed animal welfare as a feature of sustainable production and consumption systems to improve resource efficiency and prevent environmental degradation	Promote farmed animal welfare as a feature of sustainable production and consumption systems to improve resource efficiency and prevent environmental degradation
	Secure optimal farmed animal welfare to improve production efficiency and reduce GHG emissions	Ensure that climate change prevention and mitigation accounts for the welfare of farmed animals
	Promote optimal animal welfare standards in aquaculture to prevent negative health and environmental consequences	Transition away from aquaculture when it does not meet optimal animal welfare standards
	Provide farmed animals on land with optimal habitat conditions to support ecosystem processes and prevent biodiversity loss	Guarantee the provision of appropriate environments to optimize the welfare of farmed animals on land
	Promote farmed animal welfare as an aid in the construction of less violent and more peaceful societies	Endorse justice by providing all farmed animals with the same welfare standards and protection
	Enforce farmed animal welfare agendas to obtain positive effects on wider areas of societal concern towards sustainable development	Promote partnerships to reduce the dependence on systems that foster suboptimal farmed animal welfare

4.5 Discussion and conclusion

This paper has argued, in line with other recent literature, that the interests of animals, in particular animal welfare, are of central importance in the sustainable development transition; and as such, it should be included in the United Nations sustainable development agenda. The findings demonstrate that the benefit is twofold. First, there are human-focused benefits, which coincide with the current targets outlined in the SDGs. This supports the hypothesis that including animal welfare targets could be a relevant aspect in the achievement of the current human-focused SDGs. Second, there are animal-focused benefits that are in line with the

assumption that these animals have interests in their own right; but also, with the aspirations and values of a growing sector of the public, which considers certain practices that cause animal suffering unacceptable. The argument, in this case, is that some practices and systems cause harm to animals known to be highly sentient; and thus, can no longer be considered sustainable. Hence, the efforts should be directed to phase out these systems, while advocating for systems that pay full regard to the welfare of animals.

By referring to the case of farmed animals as a practical example, the offered framework demonstrates how concrete farmed animal welfare targets could be embedded into the current structure of the SDGs. It has been argued that farmed animals are a persuasive case for this analysis. First, most of the species raised for human consumption are highly sentient, which means they all share the interest of enjoying positive welfare states and avoiding negative welfare states. Second, animal agriculture, particularly factory farming, has been studied extensively, and found to be an imminent threat to the achievement of several targets in the SDGs. And third, the animal farming sector provides a pragmatic opportunity to bring the human-focused and animal-focused discourse together in the pursuit of sustainable development (Evans & Jhonson 2020). Through the development of specific anthropocentric and sentientistic targets, the relevance of including farmed animal welfare has been suggested, which supports the premise that improving the welfare of farmed animals could have (in more or less degree) an implication in the advancement of all the SDGs.

The proposed model is of high relevance in the growing discussion on the status of animals in the sustainable development debate, as it builds upon the emerging work being performed by others. However, even if there would be agreement on including animal welfare in the scope of the SDGs, the problem is not yet solved, but a whole new area of complexity comes into view. Despite the advancements of the United Nations to include animal welfare for the first time in the global sustainable development debate; at the moment, there is no working definition of sustainable development that explicitly includes animal welfare. Also, no consensus or standard exists determining a clear moral status for animals in the understanding of sustainable development, nor an agreement on what animal welfare entails. These

are all obstacles to harmonizing animal welfare standards and developing a practical application of animal welfare into the SDGs.

Moving forward with research and policy, several quandaries remain to be solved, such as which animals should and should not be included in updated versions of the SDGs (i.e., domestic, liminal, wild) and under what circumstances; how to overcome conflicting views regarding the moral status of animals and incompatible interests between animals and humans; and, what would be a harmonized definition of animal welfare, “optimal” or “suboptimal” welfare standards, and who should determine these. It would be impossible to settle on single answers to these complex dilemmas within the scope of this paper. However, striving to reach a consensus on these issues, both in science and governance, is of utmost importance to consolidate the model offered in this study; but also, in the construction of future frameworks intended to include the interest of animals into the sustainable development debate.

All in all, the work reported contributes to the conceptual construction towards an interpretation of sustainable development that directly accounts for the interest of both humans and animals; one that transcends the current anthropocentric paradigm. Expanding the scope of the sustainable development discourse from anthropocentrism to sentientism creates a synergy between human and animal welfare and, on top of that, is progress towards sustainability. The argument has been made that it would be an improvement if a new version of the SDGs would include the welfare of animals. The model presented is a first attempt to develop concrete animal welfare targets that could potentially be included in a sequel to the 2030 Agenda. From here, further research as well as working versions of local and global sustainable development instruments, need to be developed, to deliver a clear path on how this inclusion could take place.

4.6 References

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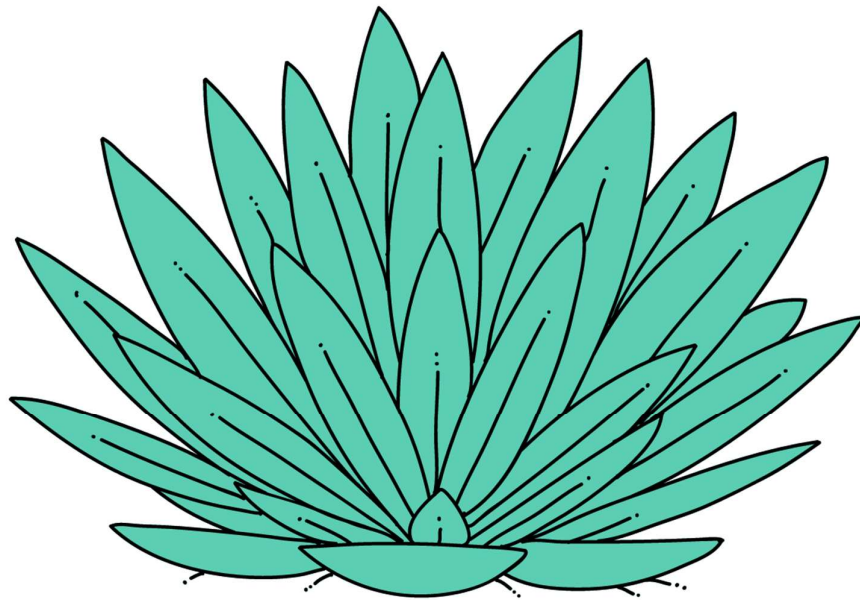
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All things are bound together. All things connect. What happens to the Earth happens to the children of the earth. Humankind has not woven the web of life; we are but one thread. Whatever we do to the web, we do to ourselves"
— Rebecca Adamson



Chapter 5

Three perspectives to integrate the interests of non-human animals into the UN sustainable development agenda

This chapter is based on the manuscript Herdoiza, N., Worrell, E., & Van Den Berg, F. Three perspectives to integrate the interests of non-human animals into the UN sustainable development agenda. (Submitted for publication).

Abstract

Linking the United Nations sustainable development agenda (SD agenda) and the interests of non-human animals has been explored as a strategy to tackle pressing sustainable development issues. Nonetheless, the knowledge of how to achieve this integration and frameworks to guide the process are still scarce. This paper aims to analyse some likely viewpoints that could be considered for the integration of the interests of non-human animals in the SD agenda. It does so by taking a moral approach and exploring three viewpoints: anthropocentric, sentientistic and ecocentric. Within each perspective, the implications, feasibility and obstacles are discussed. Despite the fundamentally conflicting moral ideals amongst the three perspectives, there are certain aspects in which they could converge, possibly complementing each other, because they can speak to the moral ideals of a wider array of actors. Thereby, increasing the odds of seeing the interests of non-human animals included in the SD agenda.

Key words: Animal welfare · Animals · Anthropocentrism · Sentientism · Ecocentrism · Sustainability

5.1 Introduction

In the search for sustainable development, the interdependence between humans, non-human animals (from now on referred to as animals), other living beings, and the environment has been largely overlooked. This is reflected in the most accepted and widely used definition of sustainable development: “meeting the needs of the present without compromising the ability of future generations to meet their own needs”, which exclusively refers to present and future human populations. According to Rupprecht et al. (2020), the sustainable development concept in its current form suffers from reductionism, while enacting a purely utilitarian view of nature and other living entities. This undermines the analytical power and potential for transformation of a broader understanding of sustainable development, one that acknowledges the significance of sustaining the well-being and/or integrity of humans, animals and nature. Several other scholars have also challenged the effectiveness of the current human-focused (anthropocentric) conceptualization of sustainable development, by advocating for a post-anthropocentric perspective that

accounts for the interests of other living beings and that fully protects the natural environment (Cielemecka & Daigle 2019, Kopnina 2016, Imran et al. 2014).

When it comes to the sustainable development debate, historically, the moral boundary has been drawn largely around humans. But as the moral scope has widened new perspectives have been established, and novel models have been developed. These groundbreaking frameworks include the interest of animals, all living creatures, while some embrace the natural world as a whole. Yet, the human tendency to draw moral boundaries is ubiquitous and varies greatly based on personal and societal views and values (Laham 2009), making reaching a global consensus an intricate endeavour. Hence, the criteria to define whose interests, beyond those of humanity, should be included in the SD agenda remains largely debated. This dilemma is broadened by the fact that sustainable development is generally discussed in rather technical and factual terms; while the moral ideals that underlie these discussions and guide the decisions about the goals that are worthwhile striving for are seldom explored (Meijboom & Brom 2012).

Despite the complexity of determining the moral scope of sustainable development, some efforts have been made in the last five decades to recognize the moral worth of non-human entities, and to develop global sustainable development instruments based on a post-anthropocentric understanding. There have been for instance sustainable development models arguing in favour of the intrinsic value of the natural world. Examples are, the United Nations World Charter for Nature (1982), a code of conduct for the protection and preservation of global natural habitats and resources; and the Earth Charter (2000), an international declaration of fundamental ethical principles for building a just, sustainable and peaceful global society in the 21st century. Meanwhile, other perspectives have focused on animals, such as the Universal Declaration of Animal Rights (1978), aimed at recognizing the fundamental rights of animals; and the UNCAHP United Nations Convention on Animal Health and Protection (2019), with the objective to protect animals, their welfare and their health. However, to this date, none of these initiatives has been officially ratified by the United Nations. Thus, no official framework has been established to include the interests of non-human entities in the SD agenda.

Sustainable development as a moral ideal and the inclusion of the interests of animals

When sustainable development is analysed as a moral ideal, it is assumed that its interpretation is grounded in a set of value assumptions that guide decisions and behaviours, which ultimately shape the sustainability potential of systems and practices (Meijboom & Brom 2012). The premise of this perspective is that the judgements of who and/or what ought to be considered and protected under the umbrella of sustainable development are not merely factual or technical, but they are also guided by moral considerations. When it comes to animals, there is a growing consensus that besides human beings these should also be subject of moral regard. In his work, Singer (1981) refers to this process of moral development as an “expanding moral circle”, a process of evolution of human altruism that starts with someone's kin and expands to include a wider range of entities.

The expansion of the moral circle to grant moral consideration to all beings with the capacity to experience feelings such as pain and pleasure has been defined as sentience (Ryder 1991). Sentience has been at the forefront of the animal welfare and animal rights movements, and the recognition of sentience has been the leading motive to include some animal interests, predominately health and welfare, in the governance instruments of several nations across the globe. Nonetheless, despite the growing recognition of the moral worth of sentient animals, this has not been enough to enact a global commitment towards their interests in the context of sustainable development. Consequently, the current conceptualization of sustainable development advocates for a moral commitment with human future generations but overlooks the needs and interests of current and future sentient domesticated and wild animals (Ott 2014).

In line with this premise, some authors have concluded that, since some animals share with humans a considerable amount of interests related to sentience; sentience is at the time, the most pragmatic and logically following non-anthropocentric addition in the path towards sustainable development. Therefore, they advocate for a fundamental shift to include the interests of sentient animals in the sustainable development concept (Boscardin & Bosert 2015; Humphreys 2020; Rawless 2012). One of the most compelling arguments for this inclusion is the one

provided by Broom (2010), which states that the first factor that makes a system unsustainable is when it defies the values of the general public in a way that the public finds unacceptable. Since there is increasing societal agreement that certain human practices and systems affecting sentient animals are not morally acceptable, they cannot be considered sustainable; hence, provisions should be taken to develop sustainable development targets that protect sentient animals from the potential harm inflicted by these practices.

A sentientistic view challenges the anthropocentric vision of sustainable development; however, some authors contend that a more inclusive perspective is required to tackle the anthropocentric bias of the SD agenda. Accordingly, they argue that the definition and application of sustainable development should be changed to a nature-focused (ecocentric) perspective, which refers to a system that is centred on nature and in which the welfare of the environment is seen as equal to the welfare of humans rather than as a subordinate factor (Imran et al. 2014, Mikkelson 2019). Under this view, meeting the needs of the human species would no longer be sufficient to ensure sustainable development, as non-human species' ought to be considered to construct a non-hierarchical interaction between humans and animals (Verniers 2021). Thus, sustainable development will be viewed as a method or process that enhances ecological systems, improving the quality of life for all living beings, including animals (Imran et al. 2014).

But even if the anthropocentric essence of sustainable development is maintained, there are clear arguments to at least consider the interest of some animals in the SD agenda, particularly their health and welfare. In fact, there is a growing discussion about the effect that animal welfare can have on human welfare in the context of human-animal coexistence (Garcia-Pinillos et al. 2016). If this is the case, animal welfare ought to be connected to sustainable development, because a diminishment in animal welfare could have direct negative implications in the achievement of the current anthropocentric sustainable development targets. For instance, good health for present and future human generations cannot be ensured if there is considerable risk of zoonotic diseases because of poor animal handling and keeping animals in suboptimal welfare conditions (Kona-Boun 2020). But there are also other

perspectives at play, like the argument that peaceful and humane societies cannot flourish where there is mistreatment and neglect of other animals (Puryear 2017).

While some conceptual frameworks for integrating animal interest into the SD agenda have emerged recently; in general, a normative argument has been favoured over a more pragmatic discussion on the applicability of such proposals. Also, as new frameworks are developed and more ideas are put on the table; an increase of obstacles, debates and conflicting viewpoints is inevitable. Therefore, when the time comes to decide about which animals and what interests should or should not be included in new versions of the SD agenda, focusing on a single approach will probably not be fruitful. To engage decision-makers into a commitment to integrate the interests of animals into the SD agenda, it is important to envision a pragmatic approach, exploring a range of perspectives, in line with the viewpoints of a diverse proportion of actors.

This paper aims to contribute to consolidating a theoretical knowledge base, that could be implemented as a guide for the inclusion of the interests of animals into the SD agenda. Accordingly, a practical moral approach is used to illustrate three moral perspectives that could be explored for this purpose (anthropocentric, sentientistic and ecocentric). First, a review of previous studies is presented, to provide context about the advancements and shortcomings around the topic. Next, each moral viewpoint is described and analysed by making use of concepts, definitions and theories discussed in the sustainability science, environmental conservation and animal ethics fields. Some implications of each perspective are also discussed highlighting their applicability, advantages and possible obstacles. Finally, a discussion and conclusion section reflect on possible synergies amongst the three viewpoints and summarize the main findings.

5.2 Connecting the interests of animals with sustainable development

Despite the limited work available around the prospect of including the interests of animals in the conceptualization and interpretation of sustainable development and integrating them in the SD agenda, this is an emerging area of study. Thus, in recent

years some scholars have analysed a range of possibilities. These studies show several approaches could be taken, some within the current anthropocentric paradigm and others by a partial or full reinterpretation of concepts and frameworks by including a non-anthropocentric perspective. Below some of this work will be discussed, to provide context about the advancements and shortcomings around the topic and to illustrate the variety of perspectives at play.

To make animals visible in the conceptualization of sustainable development, some authors have developed frameworks rooted in a range of sociopolitical and philosophical perspectives. Verniers (2021), analysed the feasibility of integrating animal welfare into the sustainable development framework from a legal perspective. The author concludes that sustainable development could be a suitable option for the integration of animal welfare. Firstly, from an anthropocentric perspective, to strengthen the nexus between the well-being of animals, humans and their environment; but also, from a sentientistic perspective, to broaden the influence of animal welfare initiatives. The strategy seeks to incorporate animal welfare into new sustainable development tools through an integrated component that accounts for human welfare, economic growth, environmental integrity, and animal welfare (Verniers 2021).

Vinnari & Vinnari (2022), offer a prospect to explicitly include animals in the definition of sustainable development. They develop a framework to add animals as individuals embedded in the natural environment, while human beings are included as a sub-group of animals. The framework conceptualizes the transition from no rights via simple rights to fundamental rights for animals, including indicators for tracking progress towards these goals. This appears to be the first model that offers a perspective where the interests of animals are embedded in the conceptualization of sustainable development in such a manner. The authors contend that this kind of integration framework is a viable strategy that is increasingly manifesting itself in practice. This makes it a worthwhile model to explore as a guide in the process of integration of the interests of animals into the SD agenda.

Drury et al. (2023) developed a hierarchical framework based on an ethical interpretation of sustainable development, where it is possible to include the

interests of sentient animals at a higher level of priority, but also other non-sentient living beings and non-living environmental entities. Within this perspective, they propose that sustainable development is primarily an ethical issue which connects people, the planet, and the animals and other organisms which inhabit it. Based on this perspective, they offer a novel non-anthropocentric definition of sustainable development which states that “in all decisions and actions on any scale, from the individual to the institutional, we should minimize our immediate and future negative impact on animals, the planet, and other humans, while simultaneously maximizing our positive impacts on these domains” (Drury et al. 2023).

Bergmann (2019), also proposes a new conceptualization of sustainable development that transcends the human species by using the concept of “interspecies sustainability”. According to the author, it is not enough to account for the welfare of animals, but the anthropocentric paradigm needs to be transcended and sustainable development aspirations should be based on the sentience of, at least certain, animals. According to this perspective, sentient animals are considered part of the moral community, and as such, their interest should be taken into account in the SD agenda in line with the interest of humans. In a similar stance, Boscarding & Bosert (2015) refer to the concept of “strong sustainability” by Ott & Döring (2011), to put forward a new perspective that leaves space for acknowledging direct moral obligations towards animals. They argue that a strong or very strong sustainability approach is the only theory on sustainable development that arguably takes animals into account as unique individuals when establishing its ethical foundation, and hence, it should be applied to include the interest of sentient animals in an egalitarian manner, and not in a hierarchical manner (Boscarding & Bosert 2015).

Other authors have proposed a reimagining of the traditional sustainable development pillars (society, economy, environment), by advocating for the inclusion of a fourth pillar that includes the interests of animals. According to Rawles (2012), animal welfare concerns are not naturally accommodated by the sustainable development triangle; hence, rather than attempting to impose such an accommodation, the triangle should be transformed into a diamond with animal welfare as the fourth corner. Meanwhile, Vinnari et al. (2017), argue that the conventional three-dimensional framework of sustainable development is

inadequate for considering ethical issues pertaining to animals. As a result, they take into consideration a fourth pillar of sustainable development, which is animal protection, by developing a “Sustainability Matrix” that produces sustainable development objectives that consider the needs of both humans and animals.

Besides the proposals to reconceptualize sustainable development to include animals, other scholars have developed frameworks to directly include their interests in the United Nations Sustainable Development Goals for 2030 (SDGs). For instance, Verniers & Brels (2021), investigate the SDGs as an avenue to make animal welfare visible in international law. Concretely they suggest that SDG 3 (Good Health and Well-Being) could be extended to encompass animal health and welfare. They discuss several issues where the connection between human and animal welfare is reinforced, including the prevention of zoonotic diseases, pet ownership, and animal-assisted therapy. They also emphasize the significance of the win-win situation that exists between enhancing animal welfare and promoting human health and wellbeing.

Taking an interdisciplinary approach, Visseren-Hamakers (2020), offers a groundbreaking model to connect the academic and policy debates that are linked to sustainable development and animal concerns. The author claims that it is essential to envision ways to connect animal interests with the SDGs, to guarantee the establishment of a single worldwide guiding framework that takes into consideration humans, animals, and the ecosystem they share. The proposal makes the case for an 18th SDG on animal health, welfare and rights. Accordingly, the author argues that the interests of the individual animal should be integrated as a self-standing new 18th goal in the SDGs.

In contrast with the idea of developing a new SDG to account for the interests of animals, other authors argue in favour of integrating animals within the current structure of the SDGs. To critically analyze the anthropocentric assumptions that underlie the SDGs, Torpman & Röcklinsberg (2021) propose a reinterpretation of the SDGs framework. In their model, the interests of sentient animals should be included in all SDGs that are sentience-centered, meaning that are relevant for humans and sentient animals alike. The authors argue that there are no good reasons to defend

the anthropocentric bias and that the SDGs should therefore be reconsidered so that they take animals into direct consideration. In the same line, Herdoiza et al. (2023) highlight the feasibility of incorporating animal welfare into a future version of the SDGs. The authors accomplish this by referring to the case of farmed animals and developing a model based on a set of anthropocentric and sentientistic targets for each of the 17 SDGs. They conclude that broadening the SDGs' focus from anthropocentrism to sentientism advances sustainable development while also fostering a positive relationship between human and animal welfare.

Citing mutually beneficial benefits for humans and animals, Keeling et al. (2022) make a similar case for linking animal welfare to the overall SDGs framework. They suggest that although some SDGs are expected to have a larger influence on animal welfare than others, the SDG framework in its entirety could boost animal wellbeing because of the advantages for animal health and wellbeing that can result from attaining the SDGs. To enhance animal welfare and aid in the implementation of various policy choices, the authors provide a “map” that serves as a compass to integrate animal welfare objectives within the SDGs framework.

The aforementioned proposals are noteworthy developments that present diverse approaches to integrating the interests of animals within the definition of sustainable development and/or the construction of the SD agenda. Even though at an early stage, this research provides a foundation that can be valuable to further develop the debate around how this inclusion could be practically implemented. The analysis provided hereafter aims to consolidate the theoretical knowledge and add to this work, by evaluating how different moral perspectives could be explored as a guide to integrate animal welfare into the SD agenda. The analysis that follows aims to add to previous work and deepen the theoretical knowledge, by assessing how diverging moral perspectives could be investigated as a means of integrating the interests of animals into the SD agenda.

5.3 Including the interests of animals in the SD agenda: three perspectives

Based on the discussed literature, in this section, three perspectives that could guide the inclusion of the interest of animals in the SD agenda are analysed. The purpose is not to advocate for, nor to disregard any of the viewpoints, but to showcase an inclusive model, that can be useful to navigate the complexities of the debate and facilitate the assessment. The methodological analysis aims to contextualize how a holistic, rather than reductionistic, approach allows to bring different viewpoints to the table, and as a result, aids in the process of including the interests of animals into the SD agenda. The three contrasting viewpoints (Figure 5.1), are illustrated along a gradient that represents the range of animals accounted for, and have been categorized based on the scope of moral consideration (anthropocentric, sentientistic, ecocentric).

Each perspective also illustrates how the interests of animals are included in different versions of the sustainable development model. In the anthropocentric perspective, animal welfare is the sole interest that is accounted for, it includes animals that have direct inference in the sustainable development interests of humans, and it is embedded within the traditional triangular sustainable development model. In the sentientistic perspective, the interests of sentient animals are accounted for as an independent fourth pillar within a diamond model of sustainable development. In the ecocentric perspective, the interests of all animals (human and non-human) are contained within a wider category that accounts for the interest of nature as a whole. The specifics of each viewpoint are discussed below (Table 5.1), these include the moral justifications for including the interests of animals, the animals that ought to be included, and the underlying challenges and shortcomings.

Anthropocentric perspective

The current construction of virtually all human societies is based on an anthropocentric view towards animals. According to the discourse on intrinsic worth, the core assumption of anthropocentrism is that only human beings are moral objects since they are the only beings with inherent value. This is predicated on the

idea that animals are valuable when they serve a purpose that is worthwhile for humans (Kronlid & Öhman 2013). However, it is worth noting that the preoccupation about the negative implications of the mistreatment and mismanagement of animals for the lives of human beings is on the rise. The main concern is that neglecting the health and welfare of the animals that humans have close contact with or depend upon, has proven to have negative effects on several sustainable development targets, particularly those related to human health, societal wellbeing, and nature conservation (Goldberg 2016, Scherer et al. 2019, Tarazona et al. 2019).

The United Nations acknowledged in 2019 the absence of animal welfare in the SD agenda, highlighting the need to investigate the relationship between animal welfare and sustainable development (UN 2019). More recently, in March 2022, the United Nations Environment Assembly adopted a resolution regarding the animal welfare–environment–sustainable development nexus and requested the preparation of a report about this nexus. The argument is largely anthropocentric and instrumental: animals are actors in the process of human flourishing; as a result, the necessity of enhancing their welfare to move toward sustainable human communities should be acknowledged. Hence, including the welfare interest of animals in the sustainable development debate would require answering why and how animal welfare fits within the pursuit of the current anthropocentric construction of the SD agenda.

If neglecting the welfare of animals has negative implications that could compromise the achievement of the SD agenda, then, it can be assumed this is a direct motive to consider animal welfare as an element of concern in the pursuit of sustainable development. Several scenarios in the human-animal relationship grant consideration of the health and welfare of certain animals. In particular, it has been found that improving the welfare of farmed animals could play an integral part in mitigating certain sustainable development challenges, notably land use, human health, food safety and greenhouse gas emissions (Broom et al. 2013; Gjerris et al. 2011). Scholars have also noted that safeguarding the well-being of the individuals that comprise a species, aids in the population's overall conservation (Paquet & Darimont 2010). This indicates that wild animal welfare has to be a priority in the SD

agenda since it improves species conservation, which is necessary to meet the needs of human beings.

From an anthropocentric perspective, the interest of improving and maintaining animal welfare is a means to an end, rather than an end in itself. Therefore, states might be motivated to create governance tools for sustainable development that incorporate animal welfare by redefining the problem of animal welfare as a societal problem and highlighting its effects on people Verniers (2021). Following a similar perspective, Keeling et al. (2019), explore a reciprocal relationship between achieving the SDGs and animal welfare, with strong synergies for specific SDGs; for instance, SDG 12 (responsible consumption and production) and SDG 14 (life below water). Within this prospect, the question is how improving animal welfare could be advantageous in achieving the SDGs, but also, to explore how achieving the SDGs could have a positive effect on animal welfare. There are several other instances where these synergies are particularly strong. For instance, Twine (2020) points towards the need to consider the human-animal relation in the sustainable development debate, particularly in the analysis of impacts and solutions for SDG 13 (climate action), as the mass commodification of animals commonly referred to as “livestock” has been directly linked to decreased animal welfare and climate change.

A focus on improving animal health and welfare could also be explored as a strategy for the achievement of SDG 3 (good health and wellbeing). Hence, targets directed to improve animal health and welfare could be added to this goal, to tackle the circumstances where the health and welfare of humans and animals converge. This is in line with the One Welfare (Garcia-Pinillos et al. 2016) and One Health (Monath et al. 2010) initiatives, which are increasingly mentioned in sustainable development reports. The One Welfare approach recognizes the connection between the well-being of humans and animals. Therefore, it could help to promote key global objectives such as reducing human suffering (e.g., the abuse of vulnerable people), supporting food security and improving productivity within the farming sector through a better understanding of the value of high welfare standards (Garcia-Pinillos et al. 2016). The One Health approach promotes the integration of human, animal, and environmental health through communication and collaboration among professionals in different fields in animal care and research (Monath et al. 2010).

This perspective could allow improving healthcare for animals, in particular those that are more closely intertwined with humans, while advancing and improving good health and well-being for humans.

The main advantage of considering an anthropocentric perspective is that the welfare interests of animals could be implemented as a strategy within the current structure of the SD agenda, and as such, actors might be more open to its application. This perspective in principle does not require a fundamental alteration, but rather, the development of specific targets and governance instruments to advance animal health and welfare objectives in parallel and coordination with the advancement of the SD agenda. Consequently, this perspective could be used as an opportunity to bring animal welfare organizations and organizations concerned with advancing sustainable development objectives to collaborate. Moreover, including animal welfare in sustainable development instruments could put the animal welfare issue at the forefront of the global discussion (Verniers 2021). An example of how this could be applied in practice has been developed by Keeling et al. (2022). In their study, the authors outline a framework through which organizations concerned with animal welfare and organizations concerned with the advancement of the SD agenda can identify concrete targets from one specific or several SDGs, to prioritize those that will achieve the co-benefits from their collaboration (Keeling et al. 2022).

The main objective of an anthropocentric perspective of sustainable development is to improve welfare within existing systems, rather than challenging the anthropocentric basis of the SD agenda. Nevertheless, this does not mean that some systems would not require to be transformed to obtain results that are in line with the aspirations of the current SD agenda. Accordingly, specific targets would need to be developed to enhance animal health and welfare as a strategy to reach sustainable development milestones. This could be done without necessarily challenging the existence of the systems of animal use that underlie the structure of the SD agenda, but ensuring that the health and welfare of animals are sufficient. This approach would require emphasizing feasible and measurable changes to improve the welfare of animals in industries and practices where this improvement could have positive implications (e.g., animal agriculture, animals in entertainment and research, and wild animal management).

While at first glance including the welfare of animals in the SD agenda could be an important step in the road towards sustainable development, it might encounter significant challenges. Achieving this inclusion will require a global consensus on what animal welfare entails, and on what is considered sufficient animal welfare. However, such consensus is lacking at the moment, as there are many different definitions and interpretations of animal welfare. These vary depending on disputed ethical, cultural, and scientific viewpoints; ranging from the absence of suffering to the question of whether the animal should be in perfect bodily and mental health and in balance with its surroundings, to a sociopolitical or economic perspective that takes into account human preferences (Fisher 2009). This debate represents a significant barrier to determining the acceptability of practices and systems, and it runs the risk of leading to unattainable targets.

Being a complex issue, this lack of agreement grants more in-depth biological and ethical analysis, to facilitate reaching scientific and moral consensus, and hence, lies outside the scope of this paper. However, it is worth noting that advances have been made already to establish a concrete global agreement on animal health and welfare, in the form of the United Nations Convention on Animal Health and Protection (UNCAP 2019). This agreement was created to serve as a crucial framework for international cooperation and the establishment of comprehensive rules intended to improve the lives of animals. However, it has not been officially ratified by the United Nations. Hence, the adoption of this framework should be considered a prerequisite, to ensure a coherent inclusion of specific animal welfare targets within the structure of the SD agenda.

Finally, it is important to acknowledge that within an SD agenda that is mainly directed at fulfilling the needs of human beings, choosing an anthropocentric perspective will inevitably perpetuate the instrumental use of animals. In turn, this emphasizes the longstanding discrimination of animal interests. On the other hand, an anthropocentric approach allows the establishment of synergies between human welfare and animal welfare. Thus, at the risk of diluting the interest of animals within an agenda that is fundamentally anthropocentric, identifying animal welfare as a requirement for meeting essential human needs may have some benefits that could

precipitate drastic changes and establish animal welfare as a component of sustainable development for the first time.

Sentientistic perspective

While initiatives such as One Health and One Welfare have brought into focus the interconnection between humans, animals and the environment, they are still constructed from an anthropocentric perspective. Thus, some have criticized these types of proposals defining them as narrow and not radical enough. According to Coghlan et al. (2021), these ideas do not embrace the emerging philosophical view that historical anthropocentrism is an unfounded ethical prejudice against other animals. In the context of the sustainable development debate, challenging this prejudice requires applying an ethical analysis, to help uncover the underlying moral blind spots within the sustainable development concept and the SD agenda.

Anthropocentrism limits moral standing to human beings who are considered moral agents, and to human beings considered moral patients, such as babies and those with severe handicaps. It is common practice in philosophical literature discussing animals to distinguish between moral agents and moral patients and to classify animals as patients and humans as agents (Regan, 2004). A more inclusive view, known as sentientism, allows other potential moral patients—such as more developed creatures like birds and mammals—into the category of beings with moral standing in addition to human moral agents and patients (Schönfeld 1992).

Nowadays, a considerable number of humans recognize that sentient animals should be considered moral patients, which means that at least some moral considerations to their sentientistic interests should be considered in the search for sustainable development. Sentience in the context of animal science usually refers to the ability to feel subjectively pleasurable and unpleasant sensations like pain, suffering, anxiety, pleasure, happiness, and joy (Varner 2012). Conclusive biological research demonstrates that a wide range of animals (both vertebrates and invertebrates) can react to tissue damage or injury by way of nociception or nociceptive-like reactions. Additionally, certain animal species can experience psychological suffering (Jones 2013). Accordingly, Ott (2014) asks a particularly relevant question: “why should we have moral commitments with respect to human posterity and not with respect to

sentient animals which suffer right now within the industrialized system of domestication or those who suffer in the wild?” (p. 898). Meanwhile, Narayan (2016) observes that the anthropocentric narrative surrounding sustainable development may have exacerbated the commodification of sentient animals since the concepts of development have mostly ignored concern for their interests and well-being. These views challenge this discrimination, highlighting the need to refocus global efforts to extend the scope of the SD agenda to include the interests of sentient animals.

Adopting sentientism as part of the SD agenda would mean acknowledging that the interests of sentient animals cannot be sacrificed for human society to develop. Boscardin & Bosert (2015) argue, that if animals are part of the moral community, the criterion for being morally considerable should be sentience, and not rationality, the use of human language, or any other arbitrarily chosen anthropocentric faculty. If this assumption is agreed upon, there is no justification for keeping sentient animals out of the SD agenda, and specific targets ought to be developed to fully account for their interests. In the case of climate change, for example, at least some sentient animals will likely survive and outlive humanity. Hence, if the interests of sentient beings matter in and of themselves, then there is an obligation to lessen the catastrophic effects of climate change for the benefit of all sentient beings including animals and humans (Humphreys 2020).

If the values that underpin the current concept of sustainable development are shifted from an anthropocentric to a sentientistic perspective, new structures and definitions must emerge. This means that the traditional sustainable development model (society, economy, environment), would also need to be reframed into a framework that directly accounts for the interests of sentient animals. Examples of how this restructuring could occur are the “Sustainability Matrix” by Vinnari et al. (2017) and the “Sustainability Diamond” by Rawles (2012). Accordingly, this perspective would also require the development of renewed targets, and maybe even new goals, to reflect a novel structure (society, economy, environment, sentient animal interests), rather than attempting to include the interests of animals under the anthropocentric structure of the current SD agenda. This could be done through different approaches; for instance, adding the interest of sentient animals to those SDGs that have sentientistic aspirations (Torpman & Röcklinsberg 2021); adding

sentientistic targets to each of the current SDGs (Herdoiza et al. 2023); or developing an 18th SDG that accounts for the interests of sentient animals (Visseren-Hammakers 2018).

Amongst nations and communities, the animal category is a broad spectrum. Hence, there is no consistent view or value ascribed to all animals everywhere. Moreover, the views and values surrounding animals are widely changing depending on societal, religious, and political views. In some instances, animals are seen as key components of the ecosystems upon which humans depend for survival; others are seen as companions and/or family members; while they can also be perceived as objects, pests, or labour resources (Arcari et al. 2021). Therefore, the idea of a sentientistic version of the SD agenda is severely hampered by the morally contradictory ideals toward animals, which are bound to cause conflicts and disagreements over which animals and what interests ought to be considered.

The inevitable occurrence of scenarios in which the sentientistic interests of animals could conflict with the upholding of systems and practices deemed essential to human development—such as animal agriculture, animal experimentation and research, and the management of wild animals—is another barrier to this viewpoint. According to Torpman & Röcklinsberg (2021) however, there are similar types of conflicts when incorporating the interest of different people. Yet, all groups of people are represented by incorporating their interests in the SDGs. Nonetheless, it is worth noting that it seems unlikely that a sentientistic perspective could be adopted in the SD agenda without raising rejection by a large proportion of stakeholders that still depend on the instrumental use of sentient animals for their livelihoods.

In principle, there is no moral justification for keeping the interests of sentient animals out of the SD agenda. However, a sentientistic approach seems to be intertwined by a range of theoretical, ideological and practical quandaries that need to be timely addressed and openly discussed by societal actors, including academics, policymakers, industry and the general public. Either way, a sentientistic viewpoint of sustainable development will inevitably call for fundamental changes to some of the targets of the SD agenda, for example by phasing out incompatible practices and systems that compromise basic sentientistic interests.

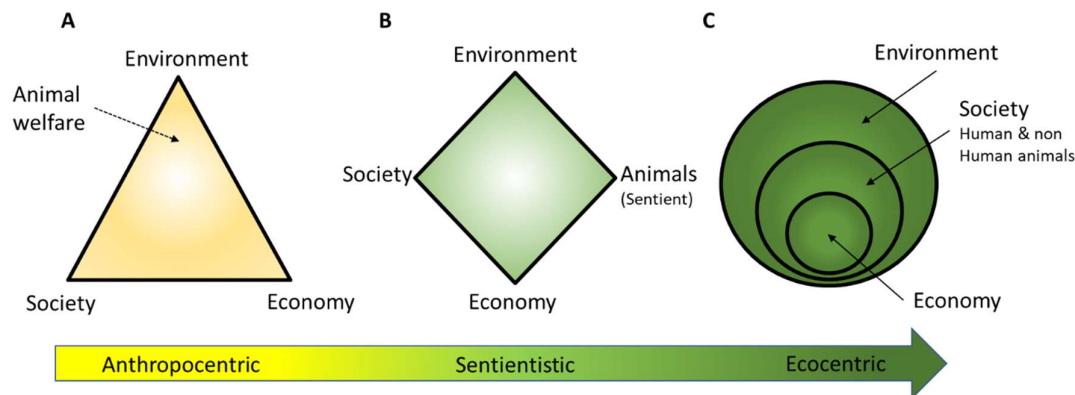


Figure 5.1—Three moral perspectives for the inclusion of the interests of animals into the SD agenda. A: Anthropocentric; B: Sentientistic; C: Ecocentric.

Ecocentric perspective

In the last three decades, there has been an increasing trend in the sustainable development debate stressing the need for a paradigm shift of values where humans are not seen as dominant but as a part of a natural community, alongside animals and other life forms. Some authors have developed alternative definitions to improve and/or challenge the current sustainable development concept. These new interpretations of sustainable development build on the premise of the interdependence of life, and not the supremacy of a single species (Rupprecht et al. 2020). According to Cielemecka and Daigle (2019), this is referred to as "post-human sustainability", which encompasses animals, plants, and ecosystems that should be preserved and allowed to flourish for future generations. This new interpretation will view sustainable development as a strategy or process that improves ecological systems, which in turn provides a higher quality of life for all living beings (Imran et al. 2014).

In line with this principle, Rupprecht et al. (2020) propose a reconceptualization towards "Multispecies Sustainability" where visual elements (e.g. biosphere, microbial societies, plant societies) are dependent on those containing them, and affected by those they contain. The authors offer an alternative definition of sustainable development: "meeting the diverse, changing, interdependent, and irreducibly inseparable needs of all species of the present, while enhancing the ability of future generations of all species to meet their own needs" (p.5). Bergmann (2019)

suggests a similar stance, and offers the concept of “Interspecies Sustainability”, as a paradigm to guide human decision-making and actions impacting animals. The author offers an inclusive view where principles such as ecocentrism, interspecies justice, animal agency, animal cultures and a holistic conception of naturalness converge and urges these principles should be translated to governance and extended to all species (Bergmann 2019).

Such a non-anthropocentric approach to sustainable development would emphasise that “human needs are secondary to the natural order of things, where equilibrium exists between life and death, growth and decay. Rather, humanity should strive for a sustainable harmony of nature” (Buchdahl & Raper 1998, p. 93). As stated by Kopnina (2017), non-anthropocentric viewpoints prioritize biodiversity preservation and conservation for the benefit of entire habitats or species, rather than for human advantage. These perspectives decenter humankind and locate humans and animals within a shared community which is embedded and dependent upon the natural world. Kopnina et al. (2023) describe this as a combined non-anthropocentric ethic of ecologists and animal defenders, that exposes anthropocentrism as the root cause of environmental crises and non-human suffering. Hence, a combination of various environmental ethics approaches, such as animal rights, deep ecology (Næss 1989), and land ethics (Leopold 1949), with their various units of study (individuals, species, and habitats), is necessary to achieve a non-anthropocentric account of sustainable development (Kopnina 2017).

An ecocentric viewpoint of sustainable development acknowledges that animals are members of communities composed of humans, non-humans and other living creatures and that all animals have important interests shared with humans; such as freedom to live in their natural habitat, having autonomy and interacting with their ecological community. Under this perspective including the interests of animals in the SD agenda, would require an approach that recognizes these interests. For this, a holistic model reflecting the interdependence between humans-animals-nature would replace the current utilitarian/instrumental model, where animals and nature are seen as mere resources. Hence, humans could be classified as a subcategory within a broader category composed of all animals (Bergmann 2019); while all animals including humans could be contained within a wider category that

constitutes the whole of nature. Under this model, protecting the needs of nature in the SD agenda would effectively mean protecting the needs of all animals, including humans.

Historically, ecocentric perspectives have been at odds with animal welfare/rights perspectives, as in the former the interests of the individual animal are overrun by the interests of the species and ecosystems. In the context of sustainable development, animal advocates contend that an ecocentric approach would not sufficiently take into consideration the individual interests of the animals (Humphreys 2020). Nonetheless, Mikkelson (2019) argues that a more inclusive theory such as ecocentrism should be favoured over more exclusive theories such as sentientism. According to the author, it is worse to inadvertently leave out of direct moral consideration a being or object that merits it, than it is to inadvertently include one that does not. While sentientism opens the door to sentient animals, it also closes the door behind them. Ecocentrism, in contrast, continues to hold the door open for all animals (collectives and individuals) and recognizes that ecological collectives, such as species and ecosystems, have moral consideration based on factors other than the welfare of the living beings that inhabit them (Mikkelson 2019).

According to Verniers (2021), an ecocentric perspective might encourage the rejection of the anthropocentric meaning of sustainable development and promote its expansion to include considerations for the interests of animals. Consequently, embracing this perspective, which aims to satisfy human needs on par with animal needs, would have far-reaching effects. This would entail actions like stringent environmental preservation, tight hunting and fishing restrictions, managing human overpopulation, and perhaps reevaluating whether animals should be eaten at all (Verniers 2021). However, it should be noted that while some of these targets could in principle be accounted for in provisions embedded in some SDGs; for instance, (SDG 15) life on land and (SDG 14) life on water; since human prosperity is currently linked to the global spread of unsustainable industrial production systems and consumer culture, the majority of the SDGs, are likely to conflict with these actions (Kopnina 2017).

Despite the possible far-reaching consequences and transformation potential of an ecocentric approach to sustainable development, one of the main obstacles is the risk of it being demarcated as too radical and grounded in theoretical worldviews that are not feasible in practice. If a sustainable development vision centred on nature is to become prevalent and last, anthropocentrism and human exceptionalism must be refuted, and alternatives must be developed for every aspect of sustainable development in terms of both definition and application (Bergman 2019). This would mean not only a fundamental change in the current anthropocentric conceptualization of sustainable development and a transformation of the current SD agenda; but would also require a disarmament of the extractive capital-centered structures that govern the current human paradigm.

Accounting for the interests of all animals through an ecocentric perspective would certainly mean a compromise on the needs of the human species, as the needs of humans still heavily depend on practices that go against the interests of a considerable number of animal species. Given this reality, an ecocentric perspective can be considered, at most, as one of many viable viewpoints to challenge the prevailing anthropocentric paradigm of the current SD agenda, rather than a standalone stance (Kopnina, 2017). Hence, even though this perspective might not be the most pragmatic or feasible in its application, it is not less worth exploring, as from a fundamental point of view there is no ethically coherent justification for perpetuating a view of sustainable development that is based on the exploitation of other living beings and the destruction of the natural world.

Table 5.1– Comparison between three moral perspectives for including the interests of animals in the SD agenda

Characteristics	Anthropocentric	Sentientistic	Ecocentric
Animals included	Animals that have a relation with the sustainable development interest of humans, (e.g. farmed animals, endangered animals)	Sentient animals (who can experience pain and pleasure; animals that have an interest in their wellbeing)	All sentient and non-sentient animals (e.g. sponges, corals, anemones, and hydras).
Underlying moral viewpoint	Anthropocentrism	Sentientism	Ecocentrism

Reasons for inclusion	Achieving synergies between improving human and animal health and welfare for the advancement of the SD agenda.	Some aspirations in the SD agenda are relevant to humans and sentient non-humans, therefore there is no moral ground to exclude sentient animals.	Fuelling the abandoning of the anthropocentric connotation of sustainable development and promoting the extension of its scope to nature which includes all animals. The goals related to human- prosperity are likely to clash with nature-focused goals.
Obstacles and conflicts	Lack of consensus surrounding the concept and measurement of animal welfare. Not strong enough to offset the instrumental use of animals.	Dissonance in the views and values surrounding animals. Possible conflicts between the interests of sentient animals and humans.	Too radical in the face of the predominant anthropocentric neo-liberal ideology.

5.4 Discussion and conclusion

This paper has argued (i) that including the interest of animals in the SD agenda is an intricate endeavour, requiring further examination and debate (ii) that bringing a moral perspective to the analysis, could help to understand the underlying ideals and viewpoints that might guide the decisions about which animals and what interests should or should not be included (iii) that taking a holistic rather than a reductionistic approach is a better way to identify synergies amongst perspectives and to navigate the complexity of the debate. It has been demonstrated that anthropocentric, sentientistic and ecocentric ideals are relevant viewpoints that could be valuable in the debate about the inclusion of the interests of animals in the SD agenda.

The findings of this analysis are significant for several reasons. First, it contributes to the growing debate about the incorporation of the interest of animals in the SD agenda. Second, it brings together and builds upon the ideas established by other scholars, who have developed frameworks and models for the advancement of this process. Third, it showcases that the promising prospect of including the interests of animals in the SD agenda in practice cannot be addressed from a single perspective, as the views and values surrounding the debate are diverse. Finally, this study sets

itself apart from the traditional technical standpoints enacted in the sustainable development debate, by proposing a moral approach, that might be used as a guide to understanding the underlying moral ideals that might play out in the decision-making process.

While there are compelling arguments for the inclusion of the interest of animals in the SD agenda, the findings have shown that the distinction between moral necessity and pragmatic feasibility should not be disregarded. The moral necessity of including the interests of animals is highlighted in the literature and reviewed in this paper from a range of views. Nonetheless, a significant gap between the moral necessity and the pragmatic feasibility is revealed through the obstacles to the inclusion in each of the approaches. This has seldom been answered by previous work, since the normative argument has been favoured over a more in-depth discussion on the applicability of such proposals. Therefore, the purpose of this paper has been to deepen the analysis and put some of these obstacles into perspective.

The call of the United Nations Environmental Assembly to officially debate the connection between animal welfare and sustainable development offers a groundbreaking opportunity to account for the interest of animals for the first time in the SD agenda. Yet, the underlying motivation is largely anthropocentric and instrumental, which inevitably perpetuates the harm to animals brought about by human activities. Nonetheless, pragmatist thinkers reflect that relying on the intrinsic value of animals and nature is not sustainable and argue that moral anthropocentrism is unavoidable (Kopnina & Cherniak 2015). Therefore, incorporating the welfare interest of animals into the SD agenda from an anthropocentric perspective appears to be the most logical first inclusion of the interests of animals at this time. To some extent though, this approach might serve as a means of challenging the anthropocentric bias of the SD agenda, as considering the welfare interest of animals could lead actors to become more aware of aspects of care that could contest some of the current systems of animal exploitation (Crist 2012). Therefore, it is plausible that an anthropocentric viewpoint that addresses animal welfare could provide an initial platform for contemplating the addition of other sentientistic and ecocentric targets to the SD agenda.

Accounting for the health and welfare of animals in the path towards sustainable development is important because humans depend on animals for their survival and development. However, through the expansion of the scope of moral consideration the necessity to account for the interest of animals in their own right, and not because of their utility to humans also comes into focus. Despite the fundamentally conflicting moral ideals amongst the three perspectives presented in this paper, there are certain aspects in which they could converge, possibly complementing each other, because they can speak to a wider array of individual and collective human viewpoints. Consequently, by committing to upholding common values and ideas, people may be more likely to find common ground and come to an agreement (Wan et al. 2010). Therefore, adopting this inclusive strategy, instead of discounting any of the proposed viewpoints, might increase the odds of seeing at least some of the interests of animals included in the SD agenda sooner rather than later.

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**"Don't do nothing because you can't do everything. Do something. Anything."
— Colleen Patrick-Goudreau**



Chapter 6

Conclusions

6.1 Research context

In 2024, the deadline established for the achievement of the United Nations Sustainable Development Agenda for 2030 (2030 Agenda) through the implementation of the United Nations Sustainable Development Goals (SDGs) is quickly approaching. The year 2023 was a "make or break it moment" for the SDGs, as it marked the halfway point between 2015 and 2030 (Pattberg & Bäckstrand 2023). Yet, a review of sustainability studies and reports from the past decade revealed major setbacks in several areas, including public health, energy and resource consumption, biodiversity conservation and climate change; suggesting that achieving the SDGs will be very unlikely unless drastic corrective measures are taken (Arora & Mishra 2019). Furthermore, the COVID-19 pandemic (2020–2022) and its aftermath have severely impeded recent efforts to advance the 2030 Agenda by exacerbating critical global challenges. As a result, humanity is still confronted with unchecked climate change, regional and international warfare, skyrocketing energy prices, and increasing inflation and recession (Pattberg & Bäckstrand 2023).

The 2030 Agenda aims to address the most important issues facing humanity in the pursuit of sustainable development, including hunger, poverty, health, and climate change. Yet, other issues concerning the interdependence between humans, non-human animals, other living beings, and the environment have been largely overlooked in the sustainable development agenda. This absence has been deemed as one of the main causes of the unprecedented environmental crisis, as it is based on an understanding of sustainable development that focuses on a utilitarian view of nature, and centres exclusively around human interests. The 169 targets that make up the SDGs reflect this exclusion; as they are meant to be accomplished solely for the benefit of current and future human populations, disregarding the interests of non-human beings and the flourishing of the natural environment. This omission has led to growing criticism, as it has become evident that human-centeredness (anthropocentrism) has failed to lead humanity towards sustainable development (Kopnina et al. 2018).

Echoing this criticism, an increasing number of voices are calling for a fundamental paradigm shift, emphasizing the need to move past the prevailing anthropocentric view of sustainable development, through the evolution of more inclusive non-

anthropocentric approaches. To implement these new strategies, it will be necessary to re-evaluate the concept of sustainable development and restructure the existing frameworks intended to guide humanity toward a more sustainable existence. However, the largest number of individual and collective societal actors must also be dedicated and actively involved with the cause. Still, a sizable segment of the public continues to be unable, unwilling, or disengaged from their responsibility to combat the prevalent unsustainable tendencies around the globe. This might be partially explained by the fact that traditional sustainable development frameworks have focused on overly technical, normative, and top-down approaches, which may not accurately speak to the range of ideals of the wider public. Moreover, there is a lack of integration and constructive collaboration among the existing fields of study concerned with sustainable development (e.g., science, governance, ethics). Consequently, there is a shortage of sustainable development frameworks that converge the insights from these fields and cohesively present them. It has become clear that a more inclusive and integrated approach to sustainable development must be investigated and translated into pragmatic tools that can help actors in navigating the decision-making process, finding common ground amongst differing ideals, and taking positive action.

6.2 Research questions

Applying a moral perspective to the study of sustainable development has been deemed a valuable avenue for addressing some of the most pressing sustainable development challenges. In particular, a moral perspective can facilitate an introspective process, through which people may recognize their role and responsibility in the fulfilment of individual and/or collective sustainable development goals and commit to act accordingly. This PhD thesis contributed to this field of study by addressing the following research question:

Can a moral approach foster positive action towards an inclusive version of sustainable development?

Based on the main research question three sub-questions were addressed:

RQ1 Could moral reflection guide a shift towards sustainable systems of production and consumption?

RQ2 How can moral expansion be harnessed to promote more sustainable choices and behaviours?

RQ3 Can moral ideals guide the development of a non-anthropocentric notion of sustainable development?

6.3 Main Findings

Applying an interdisciplinary theoretical approach, this thesis was built upon emerging research in various fields, including environmental ethics, animal ethics, sociology, and sustainability science. By using the lessons learned from earlier research and translating them into a practical strategy, this work went beyond the ongoing conversation within these disciplines. To answer the main question and sub-questions the thesis relied on a conceptual research methodology. Hence, specific normative moral concepts and theories were investigated and pragmatically applied to conceptual frameworks and case studies aimed to address pressing sustainable development challenges. Hereafter, the conclusions for each sub-question are summarized; subsequently, the main research question is addressed.

RQ1: Could moral reflection guide a shift towards sustainable systems of production and consumption?

RQ1 was addressed by following the proposals of previous research, which suggest that moral reflection could be a catalyst for positive action for environmental protection and sustainable development (Schneider & Hoffmann, 2011; Sørensen et al. 2001). Examining the topic of food sustainability as a means of addressing RQ1 seemed worthwhile, given the trend in sustainability science literature that emphasizes food systems and food choices as crucial elements in the context of sustainable development. Accordingly, in Chapter 2, a multidisciplinary literature review was performed, to firstly highlight the relevance and impact of food systems in the context of sustainable development, and, secondly, unravel tools and strategies that could lead actors to get involved in the advancement towards more sustainable food systems.

According to some of the studies reviewed in Chapter 2, one of the main obstacles to achieving better food sustainability results is persuading participants in the entire food system to alter their choices and behaviours. This holds particularly true considering the pressing need to shift quickly toward the production and consumption of more nutrient-dense, sustainably produced foods (Perez-Cueto 2021). The findings from Chapter 2 also imply that in addition to government actors, other individual and collective actors should also be encouraged to actively participate in reducing the rising production, excessive consumption, and waste of unsustainable foodstuff. Hence, Chapter 2 concluded that leveraging both individual as well as collective moral ideals could be a useful tactic to bridge the gap between food sustainability frameworks and the participation of actors in the realization of more sustainable food systems. Yet, past research suggests that food choice is not frequently understood as a relevant behaviour in terms of sustainability by most consumers (Beverland 2014; Tobler et al. 2012). These findings highlight the shortcomings of the top-down and, predominantly, technical approach of most of the existing sustainable development frameworks, which do not necessarily speak to the views, values, and motivations of a good section of the public. This was identified as the primary challenge in Chapter 2 and poses the question of whether developing strategies that would directly connect people's food choices to their moral ideals could help solve, at least in part, the public's lack of commitment.

Chapter 2 concluded that including a moral perspective in food sustainability frameworks could indeed guide a range of actors, such as businesses, governments, and consumers in favouring more sustainably produced food, while also assisting in decision-making and problem-solving. These strategies may combine self-promoting ideals like health, wellbeing, and economic development, but should also consider ideals of care, respect, and accountability toward others—both human and non-human. Examples of such strategies can be seen through the advancement of social movements that appeal to a variety of moral ideals to promote more sustainable and healthier food choices. For example, the Vegan Movement in the United Kingdom, which encourages refraining from consuming food derived from animals, and the Plant-Forward/Plant-Based movement in the United States, which emphasizes and celebrates foods from plant sources, have experienced significant growth in recent years. Both movements base their messaging on moral principles, such as care for

the environment, public health, and/or compassion for other sentient beings. This indicates that moral viewpoints are already being fostered in some settings as a means of bringing about positive changes in the direction of food sustainability. Therefore, it has been suggested that more research and policy efforts may be focused on creating bottom-up frameworks grounded on moral perspectives in addition to traditional technical recommendations and indicators that, although crucial for these domains, may not necessarily reach a considerable number of actors.

RQ2: How can moral expansion be harnessed to promote more sustainable choices and behaviours?

Based on the findings of RQ1, the application of a moral perspective in the development of more sustainable behaviours and systems was explored in Chapter 3. The idea put forward in Chapter 2—that sustainable food systems should embrace a more participative, bottom-up approach instead of concentrating solely, as currently done, on top-down, and overly technical viewpoints— was expanded upon in this chapter. In Chapter 3, RQ2 was addressed by developing a conceptual framework for applying the concept of the moral circle as a foundation to guide sustainable action throughout the food system. The model illustrates and supports the arguments proposed in previous work (e.g. Anthis & Paez 2021; Crimston et.al. 2018), suggesting that the implementation of an inclusive approach that embraces a moral expansion perspective might be an effective strategy for understanding the nature of moral progress towards more ethical decision making.

In Chapter 3, a review of previous research led to the conclusion that the extent to which a person's moral circle includes or excludes certain entities can influence their level of participation and commitment to safeguarding the interests of those entities. The result of this review also supports the arguments made by others in the introduction of this thesis (e.g., Bratanova et al. 2012), indicating that an expansion of the moral circle can play a role in encouraging sustainable living. It has been implied that people will be more inclined to support efforts to phase out certain systems if they are aware of the possible harm these systems may cause to the entities who are part of their moral circle. A similar argument is put forward by Hards (2011), who argues that treasured ideals held by each individual contribute to

personal responsibility, which is felt as a moral duty to take action to defend that which is threatened. This is also consistent with the viewpoint of Kopnina (2018), who contends that while it is necessary to be clear about the objectives of sustainability, it is also critical to identify who are the primary victims of unsustainability. With this idea in mind, the question that emerged was: how can the range of moral ideals within people's moral circles be leveraged to guide a shift towards more sustainable food choices and behaviours?

In Chapter 3, a conceptual framework for food sustainability was developed, to show how guiding societal actors toward more sustainable food choices and behaviours can be achieved by highlighting the variety of moral principles that are ingrained in people's moral circles. The idea proposed was that a more involved public that is prepared to make significant changes may emerge when actors can more clearly grasp the link between the ideals embedded in their moral circle and their choices around food. The findings suggest that in the context of food choice, understanding the differences and parallels in the extension of moral concern of different actors can help to determine how these can be translated into behavioural change and consensus, regardless of the level grasped in the moral circle. Hence, it was concluded that efforts should not be limited to appealing to specific groups and individuals, like environmental NGOs or activists, who already hold moral ideals that are known to encourage more sustainable food choices (e.g. nature conservation, climate change). Nevertheless, it is equally important to address other less likely actors, who might adhere to moral ideals that are less frequently considered in the context of food sustainability. Social justice, animal welfare, and even self-improvement aspirations, like personal wellbeing, were identified as ideals that are less acknowledged, but nonetheless important, in the context of food sustainability.

Overall, the findings of Chapter 3 highlight the role of including an inclusive range of moral ideals in the advancement towards important sustainable development objectives. This reinforces the arguments made by other authors (e.g., Crimston et al 2018), suggesting that “the psychology of moral expansiveness can help us navigate through the tricky moral terrain associated with pressing global changes, identifying barriers to moral concern and suggesting ways that some of these barriers can be overcome” (p. 18). Hence, it is expected that the conceptual model presented in

Chapter 3 could facilitate societal engagement, promote action, and serve as a guide for efforts to create more successful methods for participation and promotion of food sustainability. For instance, it has been proposed that the application of the moral circle as presented in this study could work as a guide for the creation of campaigns aimed at reducing meat consumption, supporting healthier eating habits, advocating less processed diets, and preventing food waste. However, this framework could also be applied in research, education, and policy, as an illustration of how to apply moral perspectives in the creation of sustainable development guidelines and tools.

RQ3: Can moral ideals guide the development of a non-anthropocentric notion of sustainable development?

To illustrate the practical implications of applying non-anthropocentric moral principles in the advancement of new outlooks of sustainable development, Chapter 4 and Chapter 5 focus on a specific moral ideal: the inclusion of the interests of non-human animals in the United Nations sustainable development agenda (SD agenda). Although it is well known that non-human animals could impact several sustainable development targets; historically, this possibility has received little attention in the fields of sustainability science and governance. Others have provided insightful analysis on the need to consider animal welfare and/or animal rights in the understanding and construction of sustainable development. Accordingly, some authors (e.g. Boscardin & Bossert (2015), Meijboom (2013) and Narayan (2016), raise a similar question: where are the animals in sustainable development?

A review of the literature identified only a small number of studies linking non-human animals with sustainable development. Some offered direct proposals to include the interest of non-human animals in the sustainable development concept and/or the SDGs, while a couple of empirical studies addressed the views of a small number of actors on the connection between animal welfare and the SDGs. This shows that the knowledge on this topic, available up to this point, is still predominately conceptual and normative. Yet, the studies put forward the idea that anthropocentric concepts of sustainable development are outdated and need to be extended. Citing the emergence of these debates, the United Nations requested in 2019 the drafting of a report on the nexus between animal welfare, the environment and sustainable development. This prospect grants an investigation of specific

avenues that may be pursued to incorporate the interests of non-human animals into the SD agenda, raising more pragmatic considerations, such as whether possible sequels to the 2030 Agenda and the current SDGs could take animal interests into account. And if so, could this process be guided by moral perspectives? These quandaries were addressed in this thesis through the development of a case study in Chapter 4 and a conceptual model in Chapter 5.

The study conducted in Chapter 4 provides an opportunity to demonstrate the viability and relevance of including the interests of sentient non-human animals within the SDGs framework. It does so by using the case of farmed animals as a practical example. Others (Grasso 2019, Perez-Cueto 2020) have suggested that a certain share of the public is becoming increasingly aware of the negative environmental repercussions of animal farming as well as the moral dilemmas raised by poor animal welfare. This supported the use of this case because it is significantly relevant to demonstrating the significance and viability of including non-human animal welfare within the framework of the SDGs. In Chapter 4, the implications of considering farmed animal welfare in the context of several elements of the 2030 Agenda were discussed. The study was developed based on an analysis of the 2030 Agenda and a previous review of the literature on the topic. As a result, a series of proposed animal welfare targets for each of the 17 SDGs, both from a human-focused and an animal-focused perspective were developed. Through the development of these targets, it was possible to showcase how the welfare interest of some non-human animals, (in this case farmed animals), can be reconciled with and complement the human interests outlined in current sustainable development targets. The resulting framework demonstrated how concrete farmed animal welfare targets could be embedded into the current structure of the SDGs. The focus was to embrace an inclusive approach, indicating that there are potential synergies to be found between various moral ideals (i.e., anthropocentrism, sentientism). Thus, the finding of Chapter 4 suggested there are benefits to including animal welfare targets in the SDGs, both from the prospect of advancing the current anthropocentric targets and to account for the welfare interests of sentient non-human animals.

In Chapter 5, the question of whether a moral framework could serve as a possible means of guiding the inclusion of the interests of non-human animals in the SD

agenda was investigated. Accordingly, a pragmatic method was employed to demonstrate how three moral stances—anthropocentrism, sentientism, and ecocentrism—could be explored for this purpose. For this, each moral viewpoint was described and analysed by making use of concepts, definitions and theories from the environmental ethics, animal ethics and sustainability science literature. Moreover, some of the possible implications of each perspective were also discussed, highlighting their applicability, advantages, and possible shortcomings, and determining if there were any synergies to be found. The conclusions of Chapter 5 demonstrate that incorporating a moral perspective into the analysis could aid in understanding the underlying values and points of view that could direct the decision-making process if the time comes to incorporate the interests of non-human animals into future versions of the SD agenda. For instance, moral insights could facilitate the evaluation of which categories of non-human animals and what range of interests might or might not be included. It was also concluded that taking an inclusive rather than a reductionistic approach is a better way to identify synergies amongst differing perspectives and to navigate the complexity of the debate. Hence, the research suggested that the discussion around the inclusion of non-human animal interests in the SD agenda may benefit from a moral approach that considers a variety of moral perspectives.

The research discussed in Chapters 4 and 5 contributes to the theoretical construction of a more inclusive view of sustainable development. The studies consider the interests of both human and non-human animals; thereby acknowledging the relevance of anthropocentric ideals but going beyond the current anthropocentric paradigm. The research findings indicate that expanding the moral scope of the sustainable development discourse beyond anthropocentrism, to encompass moral perspectives like sentientism and potentially even ecocentrism, fosters a mutual understanding between human and non-human animal interests. This could help create an integrated effect through which improving animal welfare could help in the advancement of the SDGs, while completing the SDGs may improve the welfare of non-human animals. Hence, it has been argued that including the interests of non-human animals in new versions of the SD agenda might improve opportunities to tackle pressing sustainable development challenges and advance crucial sustainable development goals.

Can a moral approach foster positive action towards an inclusive version of sustainable development?

The prospect of tackling sustainable development from an inclusive perspective—one that goes beyond the prevailing anthropocentric worldview, while embracing a variety of societal viewpoints and academic disciplines—was the inspiration behind this research. What this thesis aimed to grasp was, if pragmatically applying an inclusive range of moral principles in the construction of sustainable development frameworks could help in guiding actors across different sectors and systems to make more sustainable decisions. Accordingly, the two themes employed in this thesis—i. applying moral principles to the creation of more sustainable food systems and—ii. investigating moral viewpoints as a means of incorporating the interests of non-human animals into the SD agenda—proved to be suitable case studies for this research.

The research findings support several significant conclusions in the direction of answering the main research question. Specifically, the thesis raises the possibility that moral perspectives could be considered in future efforts to address the most urgent sustainable development issues of our day, in both research and policy. Since moral ideals are the foundation of human self-determination and decision-making, the research indicates that moral principles could also be significant drivers of action in resolving sustainability issues associated with certain systems and practices. For the construction of more inclusive and integrated versions of the SD agenda, applying moral perspectives seems to be at least one of several strategies to be considered. This is corroborated, firstly, by the investigation of Chapters 2 and 3, which confirmed that food systems are one of the main drivers of sustainable development challenges, while food choices and behaviours are strongly influenced by a wide range of moral ideals and norms, and as such, a good starting point for the exploration of the main research question. Second, the findings of Chapters 4 and 5, showed that taking advantage of differing moral perspectives can lead to the development of a more inclusive, and hence, non-exclusively anthropocentric approach to sustainable development which takes the interest of non-human animals into account.

The overarching results of this thesis lead to the conclusion that, due to the complexity of human behaviour, it is not feasible to guarantee that the process of moral insight will result in meaningful and longstanding action in the direction of sustainable development. However, a shift towards more sustainable systems and practices might become even less likely if only a limited range of moral ideals are addressed. Hence, it is suggested that the intricacy of the decision-making process in the sustainable development debate should consider a pragmatic perspective that accounts for an extensive range of moral viewpoints. These could include either self-focused ideals and/or ideals concerning the interest of others. Hence, a second and more inclusive possibility allows the integration of several perspectives and the encounter of common ground between contradicting moral ideals, such as anthropocentrism and sentientism. This might increase the possibility of appealing to the views, values, and motives of a wider range of individuals and collectives. In the same vein, it is preferable to examine a variety of moral perspectives while trying to come to a consensus on how to address sustainable development issues, as opposed to narrowing in on an exclusionary perspective.

Finally, to enhance the probability of fostering a more inclusive notion of sustainable development, there is an immediate need to address the systemic obstacles that may hinder individuals from broadening their moral horizons and/or acting in a way that aligns with their moral ideals. The findings of this research indicate that there are cultural, educational, political, economic, and ideological factors that also play a role in shaping and limiting the scope of moral consideration of individuals and collectives. In turn, this can limit their willingness or capacity to take positive action to protect the interest of entities outside their moral scope. This highlights a different problem, because it seems unlikely that a sizeable portion of the global population will be willing and/or able to enact their moral ideals without first addressing problems like extreme poverty, human overpopulation, lack of education, and insecurity brought about by crime and war. This serves as a reminder to look into the concept of sustainable development in general and the issues associated with it in particular from a multifaceted perspective. In this context, an inclusive moral approach could be applied as a useful tool and guide, as opposed to a single-standing strategy to tackle the pressing sustainable development challenges of our day.

6.4 Research Limitations

The research methodology of this thesis is conceptual and philosophical. It does not include empirical investigation. A theoretical approach was necessary due to the novelty of the research in this field and the lack of practical conceptual frameworks to analyse the subject. This means that the outcomes of this dissertation relied on the construction and data from previous research. Therefore, it is important to recognize and consider that the results and conclusions are constrained by the nature of conceptual research. The findings of this thesis have been developed into applicable frameworks applied to concrete case studies, which are expected to be relevant in the context of academic research, education, and policy. However, before definitive judgments regarding how well these tools operate to ignite the anticipated societal response, the theoretical outcomes of the studies should be empirically validated. This could provide insights into the applicability by means of implementing them in studies with a wide variety of actors and different contexts. For instance, the models in chapters 3 and 4 could be applied to qualitative research, aimed at determining the response of societal actors (e.g., businesses, students, farmers).

In terms of applying a moral perspective to sustainable development, two perspectives/cases were addressed in this thesis: food systems and the interests of non-human animals. These are two relevant and interconnected topics, which are increasingly explored in the context of sustainability science, governance, and ethics. Nonetheless, the incorporation of the interest of non-human animals in the framework of sustainable development is a new field of study that still requires a considerable amount of development. Hence, due to the novelty and broadness of the subject, and to keep some consistency with the topic of food, the research was zoomed in on farmed animals and animal agriculture. Thus, less has been said about other categories of non-human animals such as wild animals, animals used for research/testing and companion animals. Hence, it should be emphasized that the thesis has focused on a narrow subset within a much larger range of issues concerning the link between non-human animals and sustainable development. As a result, other cases might call for a different strategy and the application of alternative research methodologies. For example, compared to domesticated animals, the welfare interests of wild animals are not as well researched or acknowledged. Therefore, to investigate the possibility of including the welfare interests of wild

animals in the SDGs, as it was done with farmed animals in Chapter 3 of this thesis, a deeper understanding of wild animal welfare and its implications within the framework of sustainable development would be necessary.

Finally, although careful consideration has been put in avoiding endorsing any one normative ethical theory, value position, or moral ideal; by adopting an open-minded position, referring to a wide range of sources, seeking diverse perspectives, and ongoing peer review processes, it is still important to acknowledge the potential for biases stemming from the cultural upbringing and personal values of the contributors. It is also important to highlight that the studies were largely conducted from a Western perspective, as most prior research on the subjects was conducted by academics in westernized settings that were either very similar or comparable. Therefore, even though the theoretical underpinning of the studies is universal, and hence universally applicable, the way that the resulting tools of this thesis are interpreted and utilized could vary considerably depending on the societal context of the actors applying them. Consequently, it is important to bear in mind that in the application of the frameworks developed through this research, cultural and other socio-political context specificities might need to be accounted for, and some adaptations might need to be done to the frameworks accordingly. This should be carefully considered in any future application of the frameworks and further research particularly in non-western contexts, while further research must be performed to include a non-western perspective.

6.5 Future research

In Chapters 1 and 2 some of the issues related to the lack of awareness and or commitment of actors to partake of more sustainable food and lifestyle choices were raised. There is considerable and relevant research done in the fields of psychology, sociology, and nutrition about what drives people to choose specific foods. Nonetheless, it has been proposed that additional research should look at the lifestyle, psychological, and sociodemographic aspects of sustainable food consumption to develop focused nudges that strongly influence consumers' intention to practice sustainable food consumption (Pandey et al. 2023). As a result, it is recommended that a moral perspective, like the one presented in this thesis, could be

applied in these kinds of behavioural and sociological studies to examine if an integrated approach may be able to direct more sustainable food and lifestyle choices. Such a process could help to understand how moral ideals influence and are influenced by other sociological aspects, such as gender, age, religion, economic status, and educational attainment. Concretely, future research could explore what are the perceived benefits and obstacles to including non-anthropocentric targets in the SD agenda across various groups of actors and in diverse cultural and political contexts.

Likewise, it could be insightful to investigate if people's readiness to act in accordance with their moral ideals differs in response to socio-political, psychological, and cultural circumstances and constraints. Middlemiss (2010) argues that when it comes to sustainable consumption, the responsibility of individuals depends on their capacity to undertake sustainable practices in the first place; and this is of course highly context-dependent. Here lies an opportunity for future sociological and behavioural studies to investigate how specific socio-political conditions might be a barrier for actors who want and are willing to make more sustainable decisions but are unable to do so due to specific circumstances. Researchers and politicians may find this useful in better understanding the obstacles that need to be addressed to improve the likelihood that people would connect their moral principles with their decisions and actions. Furthermore, in the context of encouraging more sustainable decisions and behaviours, this kind of research could aid in assessing the advantages and limitations of including moral approaches.

Two observations that have repeatedly come up within this thesis are, i). that moral ideals can affect and even direct people's decision-making processes and ii). that fundamental differences in these ideals can hinder the possibility of reaching consensus amongst actors in the sustainable development debate. Accordingly, Bowen et al. (2017) observed, that one of the main obstacles to achieving the SDGs is resolving disagreements among different actors. For this reason, they emphasize the need to foster collective action by establishing inclusive decision spaces for the interaction of actors across various sectors and scales. The findings of this dissertation showed some examples of how these types of opportunities for

interaction could be facilitated through implementing a moral approach that could facilitate points of encounter between actors with divergent and conflicting interests. Bearing this in mind, this thesis has supplied the essential elements that can serve as a foundation for further contributions. However, whether the approach proposed in this thesis is feasible in practice, should be further explored, particularly through governance and sociological research. Therefore, future research might be designed to validate the applicability of the proposed frameworks employing empirical research; for example, by providing avenues for interested parties to convene and investigate the practicality of implementing interventions, like the ones outlined in this thesis, to support the decision-making process.

With 2030 rapidly approaching, there is a unique opportunity to re-evaluate the anthropocentric biases of the sustainable development structures that are now in place and investigate the possibility of transcending them. In recent research, Rupprecht et al. (2020) demonstrated how multispecies thinking, which includes life forms that are other than human, can inform policies aiming to improve the well-being of a vast range of species, including the human species. Yet, they bring up the question: “How can multispecies sustainability change our perspective of pressing global environmental challenges and sustainability issues?” (p.10). This thesis has partially addressed this question by demonstrating how solving urgent sustainable development issues and advancing the SDGs may benefit from an understanding of sustainable development that considers the interests of non-human animal species. However, because this is a new field of study, there is not much research done on the applicability of this kind of non-anthropocentric/multi-species thinking or how effective it is at addressing urgent global sustainable development concerns outside of the studies in this thesis. Hence, more research is needed in this area, to continue challenging the anthropocentric bias in the understanding of sustainable development and its application in science and policy. Future studies could be directed to illustrate how moral ideals concerning other entities, beyond non-human animals, such as other life forms, ecosystems and nature could also be included as elements/targets in the SD agenda, and the implications of this inclusion in the advancement of current and future SDGs.

6.6 Final thoughts

This thesis was set up to find out if moral ideals could work as a guide to lead humanity towards a more inclusive account of sustainable development, which could aid in the fight against the pervasive unsustainable trends of our times. The dominant anthropocentric paradigm embedded in the conception of sustainable development is acknowledged by some scholars as one of the main obstacles to obtaining the changes required to advance the SD agenda. Therefore, a crucial step on the road to sustainable development is to broaden the scope of moral consideration to include the interests and flourishing of other entities beyond humans (e.g., non-human animals, other living beings, and nature), or as the title of this thesis states “minding others”. However, it should not be overlooked that “human self-love is not only natural but helpful as a starting point for loving others, including non-humans” (Kopnina 2018, p. 110). Therefore, it is critical that people also grasp how important it is to work toward sustainable development to achieve their self-focused ideals, such as living a healthy life and improving their well-being.

According to the latest United Nations Secretary-General’s SDGs progress report, just around 12% of the SDG targets are on track, while about 30% of targets show no progress or have even fallen below the baseline set in 2015 (United Nations General Assembly 2023, p. 2). This reality should be confronted by all humanity with a deep sense of concern, but also from an attitude of self-responsibility. This thesis has made the case that It is imperative to provide opportunities for actors to engage in moral reflection about the meaning and purpose of sustainable development from a range of perspectives. Through this process, people may discover fresh insights on what and who counts in the pursuit of sustainable development, while becoming aware of their responsibilities and roles in ensuring that these ideals are realized.

6.7 References

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Summaries

Summary

Living on a planet with finite natural resources and a human population that is always increasing, humanity has searched for ways to deal with this mismatch. The most widely accepted solution to this issue, without sacrificing the development and well-being of present and future human populations, is known as sustainable development. In 2015 the United Nations approved a plan of action, intended to lead humanity towards sustainable development. This guide is known as the 2030 Agenda for Sustainable Development (2030 Agenda), while the framework that guides nations towards its achievement is outlined in 169 targets contained in 17 Sustainable Development Goals (SDGs).

In the pursuit of achieving the SDGs, some progress has been made in the areas of economy, social equality, and environmental protection. Yet, the deadline established for the completion of the 2030 Agenda is quickly approaching, while most of the targets in the SDGs are either not showing considerable advancement or are even regressing. This thesis argues that this slow progress is, at least in part, because the sustainable development concept and its application are constructed from a human-focused (anthropocentric) viewpoint. This viewpoint recognizes that achieving sustainable development is crucial for the well-being of current and future human populations, but it ignores both the inherent value of other living entities and their interdependent relationship with human beings.

While there has been some recent effort to incorporate non-anthropocentric moral viewpoints into the sustainable development discourse, an overly technical and disarticulated argument amongst different disciplines has been prioritized over a more pragmatic and integrated analysis. Hence, this thesis transcends the ongoing theoretical discussion on this matter, by taking advantage of what has been learnt from previous research while translating this knowledge into practical conceptual frameworks. According to existing knowledge, integrating a moral approach within the sustainable development discourse could serve as a guide for igniting sustainable behaviour and action. Based on this knowledge, the main research question of this thesis is: **Can a moral approach foster positive action towards an inclusive version of sustainable development?** This question is partially addressed in

each of the content chapters by answering three sub-research questions, while the conclusion chapter addresses the main question.

The first sub-question of this thesis is: **Could moral reflection guide a shift towards sustainable systems of production and consumption?** This thesis makes the case that to bring about these improvements, people must recognize their responsibility to contribute to the development of more sustainable food systems. Yet, because actors are alienated from the largely technical and policy-focused traditional sustainable development frameworks, they remain indifferent to or confused about the relationship between their food choices and sustainable development targets. Considering this, an alternative perspective to conventional top-down and technical sustainable development agendas is presented, by examining the significance of incorporating bottom-up approaches grounded in moral ideals as a framework for the creation of more sustainable food systems. The findings suggest that in creating more sustainable food systems, actors may find it helpful to have a moral compass as a tool for navigating the decision-making process.

These findings highlight the need for further investigation, to clarify how a moral perspective could be implemented in the process of shifting towards more sustainable food systems. Hence, the next sub-question addressed in this thesis is: **How can moral expansion be harnessed to promote more sustainable choices and behaviours?** This thesis proposes it is crucial to develop approaches for framing food sustainability goals that can effectively speak to the views and values of a diverse range of actors. By helping to connect the principles of food sustainability with concrete individual and collective moral ideals, it might be possible to empower actors throughout the food system to make a shift in their food choices and behaviours. In this context, the concept of the moral circle serves as the foundation for the development of a conceptual framework intended to guide a shift towards more sustainable food systems. This approach transcends the anthropocentric methods endorsed by traditional sustainable development agendas, offering an alternative with a more inclusive perspective.

To further the notion of developing a more inclusive understanding of sustainable development, which goes beyond the traditional anthropocentric viewpoints one

additional sub-question is addressed: **Can moral ideals aid the development of a non-anthropocentric notion of sustainable development?** First, this question is tackled by discussing the prospect of including animal welfare targets in the SDGs. For this, the practical case of non-human animals in aquaculture and agriculture (farmed animals) is addressed. Accordingly, a conceptual framework composed of a set of human-focused (anthropocentric) and animal-focused (sentientistic) targets for each of the 17 SDGs is developed. Through the construction of this framework, a conceptual contribution is made to the development of a non-anthropocentric notion of sustainable development that directly considers the interests of non-human animals alongside the interests of humans. The next step explores a range of possible perspectives that could be considered in the process of integration of the interests of non-human animals into the United Nations sustainable development agenda (SD agenda). To address this a moral approach is used, by exploring three viewpoints: human-focused (anthropocentric), sentience-focused (sentientistic) and nature-focused (ecocentric). The conclusion is that, despite the essentially opposed moral ideals amongst the three perspectives, there are some areas where they might agree and even strengthen one another since they can address the moral viewpoints of a larger spectrum of actors. This could increase the odds of seeing the interests of non-human animals considered in the SD agenda in the near future.

Finally, the main question is addressed: **Can a moral approach foster positive action towards an inclusive version of sustainable development?** The prospect of tackling sustainable development from a practical moral perspective — one that goes beyond the prevailing anthropocentric worldview, while embracing a variety of societal viewpoints and academic disciplines— is the inspiration behind this research. Hence, it has been set up to explore how specific moral principles might result in pragmatic modifications to the ways that sustainable development frameworks are constructed and applied. Specifically, the thesis raises the possibility that moral perspectives could be considered in future efforts to address the most urgent sustainable development challenges of the present day, both in research and policy.

The main conclusion is that it is not always possible to ensure that a specific, long-lasting sustainable action or behaviour will arise from a process of moral insight. However, this prospect might become even less likely if only a limited range of moral ideals is addressed. Because the decision-making process is complex, it is therefore important to consider a broad range of moral perspectives that may be compatible with the ideals of the largest number of individual and collective actors. The findings of this research indicate that there are cultural, educational, political, economic, and ideological factors that also play a role in shaping and limiting the scope of moral consideration of individuals and collectives. In turn, this can limit their willingness or capacity to take positive action to protect the interest of entities outside their moral scope. Hence, to enhance the probability of creating a more inclusive and integrated understanding of sustainable development, there is an immediate need to address the systemic obstacles that may impede actors from broadening their moral horizons and/or acting in a way that aligns with their moral ideals. This highlights a different problem because it seems unlikely that a sizeable portion of the global population will be willing and/or able to enact their moral ideals without first addressing problems like extreme poverty, human demographics, lack of education and insecurity brought about by crime and war. This is a reminder to investigate sustainable development as a general concept and consider sustainable development challenges specifically, from a multifaceted approach. In this context, a moral approach could be applied as a helpful tool and guide, as opposed to a single-standing strategy to tackle present and future sustainable development challenges.

Samenvatting

Levend op een planeet met eindige natuurlijke hulpbronnen en een steeds groeiende wereldbevolking, zoekt de mensheid naar manieren om met deze mismatch om te gaan. De meest geaccepteerde oplossing voor dit probleem, zonder dat dit ten koste gaat van de ontwikkeling en het welzijn van de huidige en toekomstige bevolking, staat bekend als duurzame ontwikkeling. In 2015 hebben de Verenigde Naties een actieplan goedgekeurd, bedoeld om de mensheid naar duurzame ontwikkeling te leiden. Deze gids staat bekend als de Agenda 2030 voor Duurzame Ontwikkeling (Agenda 2030). Het raamwerk dat landen helpt deze doelen te bereiken, wordt geschetst in 169 doelstellingen die zijn opgenomen in 17 Duurzame Ontwikkelingsdoelstellingen (SDG's).

Bij het nastreven van de SDG's is enige vooruitgang geboekt op het gebied van economie, sociale gelijkheid en milieubescherming. Toch nadert de deadline die is vastgesteld voor de voltooiing van Agenda 2030 snel, terwijl de meeste doelstellingen in de SDG's geen noemenswaardige vooruitgang laten zien of zelfs achteruitgaan. In dit proefschrift wordt betoogd dat deze trage vooruitgang, althans gedeeltelijk, te wijten is aan het feit dat het concept van duurzame ontwikkeling en de toepassing ervan zijn gebaseerd op een mensgericht (antropocentrisch) standpunt. Dit standpunt erkent dat het bereiken van duurzame ontwikkeling cruciaal is voor het welzijn van de huidige en toekomstige menselijke populaties, maar het negeert zowel de inherente waarde van andere levende wezens als hun onderlinge afhankelijkheidsrelatie met mensen.

Hoewel er recentelijk enige pogingen zijn gedaan om niet-antropocentrische morele standpunten op te nemen in het discours over duurzame ontwikkeling, is er voorrang gegeven aan een te technisch en onsamenhangend betoog tussen verschillende disciplines ten opzichte van een meer pragmatische en geïntegreerde analyse. Daarom overstijgt dit proefschrift de lopende theoretische discussie over dit onderwerp, door gebruik te maken van wat is geleerd uit eerder onderzoek, terwijl deze kennis wordt vertaald naar praktische conceptuele kaders. Volgens de bestaande kennis zou het integreren van een morele benadering binnen het duurzame ontwikkelingsdiscours kunnen dienen als leidraad voor het aanwakkeren van duurzaam gedrag en handelen. Op basis van deze kennis luidt de

hoofdonderzoeksvraag van dit proefschrift: **Kan een morele benadering positieve actie bevorderen in de richting van een inclusieve versie van duurzame ontwikkeling?** Deze vraag wordt in elk van de inhoudelijke hoofdstukken gedeeltelijk beantwoord door drie deelonderzoeksvragen te beantwoorden, terwijl het conclusiehoofdstuk de hoofdvraag behandelt.

De eerste deelvraag van dit proefschrift luidt: **Zou morele reflectie een verschuiving naar duurzame productie- en consumptiesystemen kunnen begeleiden?** In dit proefschrift wordt betoogd dat mensen, om deze verbeteringen te bewerkstelligen, hun verantwoordelijkheid moeten erkennen om bij te dragen aan de ontwikkeling van duurzamere voedselsystemen. Maar omdat actoren vervreemd zijn van de grotendeels technische en beleidsgerichte traditionele kaders voor duurzame ontwikkeling, blijven ze onverschillig of verward over de relatie tussen hun voedselkeuzes en doelstellingen voor duurzame ontwikkeling. Dit in overweging nemend wordt een alternatief perspectief gepresenteerd voor conventionele top-down en technische duurzame ontwikkelingsagenda's, door het belang te onderzoeken van het integreren van bottom-up benaderingen, gegrondvest op morele idealen, als raamwerk voor het creëren van duurzamere voedselsystemen. De bevindingen suggereren dat actoren het bij het creëren van duurzamere voedselsystemen nuttig kunnen vinden om een moreel kompas te hebben als instrument om door het besluitvormingsproces te navigeren.

Deze bevindingen benadrukken de noodzaak van verder onderzoek om te verduidelijken hoe een moreel perspectief kan worden geïmplementeerd in het proces van de verschuiving naar duurzamere voedselsystemen. Daarom is de volgende subvraag die in dit proefschrift wordt behandeld: **Hoe kan morele expansie worden ingezet om duurzamere keuzes en gedragingen te bevorderen?** Dit proefschrift stelt dat het van cruciaal belang is om benaderingen te ontwikkelen voor het formuleren van voedselduurzaamheidsdoelen die effectief kunnen inspelen op de opvattingen en waarden van een breed scala aan actoren. Door de principes van voedselduurzaamheid te verbinden met concrete individuele en collectieve morele idealen, zou het mogelijk kunnen zijn om actoren in het hele voedselsysteem in staat te stellen een verandering in hun voedselkeuzes en -gedrag teweeg te brengen. In deze context dient het concept van de morele cirkel als basis

voor de ontwikkeling van een conceptueel raamwerk dat bedoeld is om een verschuiving naar duurzamere voedselsystemen te begeleiden. Deze aanpak overstijgt de antropocentrische methoden die worden onderschreven door traditionele agenda's voor duurzame ontwikkeling en biedt een alternatief met een meer inclusief perspectief.

Om het idee van het ontwikkelen van een inclusiever begrip van duurzame ontwikkeling, dat verder gaat dan de traditionele antropocentrische standpunten, verder te ontwikkelen, wordt er een aanvullende subvraag gesteld: **Kunnen morele idealen bijdragen aan de ontwikkeling van een niet-antropocentrische notie van duurzame ontwikkeling?** Ten eerste wordt deze vraag aangepakt door de mogelijkheid te bespreken om doelstellingen voor dierenwelzijn op te nemen in de SDG's. Hiervoor wordt de praktijkcasus van niet-menselijke dieren in aquacultuur en landbouw (landbouwhuisdieren) behandeld. Daarom wordt een conceptueel raamwerk ontwikkeld dat bestaat uit een reeks op de mens gerichte (antropocentrische) en op niet-menselijke dieren gerichte (sentientistische) doelstellingen voor elk van de 17 SDG's. Door de constructie van dit raamwerk wordt een conceptuele bijdrage geleverd aan de ontwikkeling van een niet-antropocentrisch begrip van duurzame ontwikkeling dat de belangen van niet-menselijke dieren direct in ogenschouw neemt naast de belangen van mensen. De volgende stap onderzoekt een reeks mogelijke perspectieven die in overweging kunnen worden genomen bij het proces van integratie van de belangen van niet-menselijke dieren in de Duurzame Ontwikkelingsagenda (SD-agenda) van de Verenigde Naties. Om dit aan te pakken wordt een morele benadering gebruikt, waarbij drie gezichtspunten worden onderzocht: op de mens gericht (antropocentrisch), op het gevoel gericht (sentientistisch) en op de natuur gericht (ecocentrisch). De conclusie is dat er, ondanks de wezenlijk tegengestelde morele idealen van de drie perspectieven, enkele gebieden zijn waarop ze het met elkaar eens kunnen zijn en elkaar zelfs kunnen versterken, omdat ze de morele standpunten van een breder spectrum aan actoren kunnen aanspreken. Dit zou de kans kunnen vergroten dat de belangen van niet-menselijke dieren in de nabije toekomst in de SD-agenda worden opgenomen.

Ten slotte wordt de hoofdvraag beantwoord: **kan een morele benadering positieve actie bevorderen in de richting van een inclusieve versie van duurzame ontwikkeling?**

Het vooruitzicht om duurzame ontwikkeling aan te pakken vanuit een praktisch moreel perspectief – een perspectief dat verder gaat dan het heersende antropocentrische wereldbeeld, terwijl het een verscheidenheid aan maatschappelijke gezichtspunten en academische disciplines omarmt – is de inspiratie achter dit onderzoek. Daarom is het opgezet om te onderzoeken hoe specifieke morele principes kunnen leiden tot pragmatische aanpassingen in de manier waarop kaders voor duurzame ontwikkeling worden opgesteld en toegepast. Concreet brengt dit proefschrift de mogelijkheid naar voren dat morele perspectieven in overweging kunnen worden genomen bij toekomstige pogingen om de meest urgente uitdagingen op het gebied van duurzame ontwikkeling van vandaag aan te pakken, zowel in onderzoek als in beleid.

De belangrijkste conclusie is dat het niet altijd mogelijk is om ervoor te zorgen dat een specifieke, langdurige, duurzame actie of gedrag voortkomt uit een proces van moreel inzicht. Dit vooruitzicht zou echter nog minder waarschijnlijk kunnen worden als slechts een beperkt aantal morele idealen wordt aangepakt. Omdat het besluitvormingsproces complex is, is het daarom belangrijk om een breed scala aan morele perspectieven te overwegen die verenigbaar kunnen zijn met de idealen van het grootste aantal individuele en collectieve actoren. De bevindingen van dit onderzoek geven aan dat er culturele, educatieve, politieke, economische en ideologische factoren zijn die ook een rol spelen bij het vormgeven en beperken van de reikwijdte van morele overwegingen van individuen en collectieven. Dit kan op zijn beurt hun bereidheid of capaciteit beperken om positieve actie te ondernemen om de belangen van entiteiten buiten hun morele bereik te beschermen. Om de kans op het creëren van een inclusiever en geïntegreerde begrip van duurzame ontwikkeling te vergroten, is er daarom een onmiddellijke behoefte om de systemische obstakels aan te pakken die actoren ervan kunnen weerhouden hun morele horizon te verbreden en/of op een manier te handelen die in overeenstemming is met hun morele idealen. Dit benadrukt een ander probleem, omdat het onwaarschijnlijk lijkt dat een aanzienlijk deel van de wereldbevolking

bereid en/of in staat zal zijn om hun morele idealen te verwezenlijken zonder eerst problemen aan te pakken zoals extreme armoede, demografie van de bevolking, gebrek aan onderwijs en onzekerheid die worden veroorzaakt door criminaliteit en oorlog. Dit is een herinnering om duurzame ontwikkeling als een algemeen concept te onderzoeken en om uitdagingen op het gebied van duurzame ontwikkeling specifiek te beschouwen vanuit een veelzijdige benadering. In deze context kan een morele benadering worden ingezet als een nuttig hulpmiddel en leidraad, in plaats van één enkele strategie om de huidige en toekomstige uitdagingen op het gebied van duurzame ontwikkeling aan te pakken.

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About the author



Natalie S. Herdoiza Castro was born and raised in Quito, Ecuador. At an early age, she spent most of her time caring for her dogs and exploring remote corners of Ecuador like the Galapagos Islands, the Amazon rainforest and the paramos of the Andes together with family and friends. In 2004, she decided to pursue a BSc., in Applied Ecology at Universidad San Francisco de Quito (Ecuador). Her thesis project explored the behaviour and the ecological interactions of the smallest primate species in the world (*Cebuella pygmaea*) in the Yasuni National Park in Ecuador. Natalie graduated with honours (Cum laude) in 2009. After her graduation, she worked as a science high school teacher, followed by a three-year position at the Municipality of Quito. Natalie served as a project coordinator and an advisor on youth and inclusivity during her tenure at the city's public office.

In 2015, after securing a full scholarship from the Government of Ecuador (SENESCYT), she completed her MSc., in Environmental Biology at Utrecht University. Her thesis project explored the legal frameworks for wildlife welfare management in three European countries. Natalie started a PhD program in 2016 at the Copernicus Institute of Sustainable Development from Utrecht University. Her research analyzed the need to consider moral ideals as a guide to lead humanity towards a more inclusive (beyond anthropocentric) account of sustainable

Author

development, which could aid in the fight against the pervasive unsustainable trends of our times.

In parallel to her PhD studies, Natalie was hired as a teaching assistant for two years followed by a four-year position as a junior lecturer at the Copernicus Institute of Sustainable Development. She participated in an array of bachelor and master courses dealing with a wide range of topics ranging from environmental ethics to ecology and sustainability challenges.

In the last ten years, Natalie has also been a student of mindfulness and mindfulness meditation practices, which inspired her to pursue a diploma in “Mindfulness Leadership” from New York University (2022) and a professional certification as a “Mindfulness meditation teacher” from University of California, Berkeley (2020-2022). She plans to apply her academic education and professional experience to guide private and public organizations to implement a mindfulness and ethics approach to their sustainable development frameworks, and with this, aid in a transition towards a more inclusive sustainable development model.

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