

# EurSafe News

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## Water ethics



This special 'conference issue' focuses on a young field of application-oriented ethics: water ethics. In terms of its genesis and social orientation, it shares many characteristics and developments with food ethics (Thompson 2016, Meisch 2018). For example, both argue against reductionist conceptions of their respective research objects (food and agriculture, water) and call for more compre-

hensive, life-worldly embedded understandings, or both possess an academically analytical and transformatively activist orientation each with its own specific epistemic and ethical challenges. Finally, both combine different ethical perspectives (descriptive, normative, and meta-ethics) and field and professional ethical arguments regarding their subject. Both also share a strong focus on sustainable development issues and a desire to contribute to a fair distribution of food and water in a shared world.

Like other fields of application-oriented ethics, water ethics deals with contexts of action that have become questionable. It strives, with the help of ethical reflection, to offer orientation to people in situations in which there are ambiguities and uncertainties about morally correct behaviour. The need for an ethical assurance in the human handling of water can be traced back to more recent developments. It is safe to say that the economization of water was one, if not *the* development that created the need for ethical understanding. For the globally unequal access of a growing world population to drinking water and sanitation or the pollution or salination of water had already been known for several decades, without this having explicitly led to the emergence of a new field in application-oriented ethics. The economization of water can certainly be described as the involuntary midwife of the water-ethical



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discourse and its greatest challenge from birth (Meisch 2016). To the extent that water ethics and food ethics have to do with fields of action that have become questionable, not only the normative and evaluative orientations have become questionable, but also with them the knowledge base. In this respect, both food and water ethics also face epistemological questions.

The four contributions in this Special Issue deal with the challenges of water ethics roughly outlined above and show to varying degrees references to food and agriculture. What they have in common is that they both take a critical look at the status quo and at the same time develop perspectives for action.

Viviana Wiegleb (in a discourse-analytical study) deals with different discourses on water energy food security nexus (Wiegleb und Bruns 2018). She identifies two parallel discourses. In order to be able to use the potentials that the nexus offers despite all criticism, she pleads for a more comprehensive, integrated perspective on and through the nexus. Zora Kovacic also deals with the nexus. Her focus is on how to address post-normal challenges that would arise from an integrated perspective (Cabello et al. 2018, Kovacic 2018). How can better knowledge for policy be generated in the face of uncertainties, complexity and value conflicts? To meet these challenges she proposes “quantitative story-telling” emphasising the “use of metrics as a means to tell a story, as opposed to Truth. The distinction is based on the acknowledgement that science reduces the complexity of the world by producing simple representations.” Simon Meisch takes a more comprehensive look at the relevance of narratives (Meisch 2019): Starting from a critique of contemporary water governance, he wonders how a narrative water ethics, which deals with the narrative structure of human action and the relevance of narratives for human action, can capture and deal with the political, i.e. the contentious search for better futures. Finally, Rafael Ziegler asks how, in the context of the so-called planetary boundaries, a biocentric ethical approach is better able to distribute water more equitably. His work continues reflections that were developed in the 2017 anthology “Global water ethics: towards a global ethics charter”

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(Ziegler und Groenfeldt 2017), which is now being reissued.

What does this mean for Agricultural and Food Ethics? Obviously more than can be presented here: The contributions take a critical look at how socio-political and scientific models construct the relationship between food and water and what ethical implications and consequences this can have. At the same time, however, they are also concerned with ethical issues of sustainable de-

velopment: How to distribute water fairly? How are we supposed to perceive water at all, because if water is partially a social construction and also a narrative of its cultural and symbolic appropriation, then this almost always includes constructions about food and agriculture. Here, challenges arise between contextual fields of action and universal ethical claims.

*Simon Meisch*



# What is Driving the Water-Energy-Food Nexus?

## Discourses, Knowledge, and Politics of an Emerging Resource Governance Concept



Viviana Wiegler

In recent years, the Water-Energy-Food Nexus approach has attracted growing attention within international politics, academia, and other areas of society.

Originally, the concept emerged within the realms of international politics under the influence of the World Economic Forum and related policy makers. As the Water-Energy-Food Nexus debate gains traction, it progressively influences international development and resource governance approaches. Moreover, various academic nexus platforms emerged, as the nexus increasingly frames research agendas and provides growing funding opportunities for scientists.

Despite its prominence, the nexus in its nascent form is still ambiguous and serves multiple purposes. First, it is employed as *analytical perspective* to describe and better understand interlinkages between water, energy and food resource systems. Second, it serves as *boundary concept* to facilitate discussion between academia and politics concerning resource governance and sustainable development. Third, the nexus acts as *governance concept*, aiming to integrate resource sectors across policies and infrastructures to promote sustainability and better resource allocation. Prominently, a nexus approach to water, energy and food systems also advertises knowledge integration via inter- and transdisciplinary research approaches, and collaborative decision-making.

Though international guiding concepts, like the Water-Energy-Food Nexus, may become very influential in shaping policy programs and scientific funding schemes, critical engagement with these concepts is often limited or neglected. Within the leading political and (natural) scientific debates, for instance, the nexus is rarely questioned but described as a neutral and apolitical concept. This represents an important misconception, as “[i]nfluential concepts in policy making are not merely neutral or scientific; they do not emerge by chance but, rather, are the emanation of complex webs of interests, ideologies, and power” (Molle, 2008: p. 132). Various actors are likely to hold different views of what the problem is or how it should be addressed. Hence, we deem it necessary to critically investigate the nexus approach before further endorsing it as analytical or resource governance framework.

While critical investigation of the Water-Energy-Food Nexus concept is limited, several studies exist that review the nexus from a social scientific perspective. These contributions mainly challenge the nexus concept for neglecting socio-political aspects of resource use and allocation (e.g. Allouche et al., 2015; Benson, Gain, & Rouillard, 2015; Foran, 2015; Leese & Meisch, 2015; Mdee, 2017; Middleton et al., 2015). Although this research provides important insights into actor interests and power relations, most of these papers are conceptual or theoretical in nature. Empirical studies exist, but often focus on particular aspects of the nexus or specific geographical locations, which hinders an overarching generalization of research results. To overcome these shortcomings, we seek to investigate the academic nexus debate from a meta-level perspective by also providing a strong empirical foundation for our argument.

This study explores the scientific nexus debates from a discourse analytical perspective by firstly illuminating various discursive formations of the WEF-Nexus. Can we identify dominant or marginalized discourses and, if so, what knowledge and power relations are at work? This relates to the questions of who produces nexus knowledge and what knowledge is seen as more legitimate. We also focus on the geographical context of these knowledge and power relations by analyzing the

stem of nexus knowledge and its destination. Second, we examine central discursive elements of the scientific WEF-Nexus by referring to the way environmental problems are framed and what solutions are legitimized to solve these problems. Are there different socio-nature relations shaping nexus discourses and what (political) implications emerge from this?

Addressing these questions is important, as certain understandings of environmental issues may delineate how these problems are dealt with politically. While the nexus debate is influenced by many different sectors, science plays a prominent role in defining and legitimizing the nexus as a resource governance concept to be implemented by policy makers. Science is actively engaged in shaping ideas, concepts and categorizations that have significant political implications. We focus on analyzing the scientific nexus discourse, as scientists are also increasingly called upon as experts in environmental governance processes, where they play an important (political) part (Castree, 2015).

By analyzing the academic nexus debates from a discourse analytical perspective, our findings reveal a splintered WEF-Nexus, with one leading and one counter-discourse. This finding highlights that the nexus is not uniform but, rather, presents a contested concept that is shaped by competing interpretations. The two discursive formations are shaped by distinct actor groups that conceive socio-nature relations in very different ways. These differences are based on and reflected in the different forms of knowledge, competing problem definitions, and opposing solutions suggested to solve these problems.

On the one hand, the leading nexus discourse is dominated by natural scientific, engineering and economic knowledge base aiming to control, monitor and manage nature for human use and benefit. Water, energy, and food are mainly conceived as global economic trade goods. The leading nexus narrative also contends that population and economic growth, changing lifestyles, urbanization, and climate change inevitably cumulate in a global resource scarcity that poses a threat to human existence. Suggested solutions

for addressing these global risks are based on scientific or technological innovations and market incentives aiming at allocating limited resources more effectively.

In this sense, the leading nexus discourse (re) produces a neo-Malthusian narrative which locates the causes for resource scarcity in places that experience population and economic growth, changing lifestyles, and urbanization. To date, these places are mainly located in countries of the Global South, which are implicitly made responsible for unsustainable development and environmental degradation.

This closely relates to the spatial dimensions of the nexus debate, which shows that the nexus is largely shaped by western knowledge, yet to be applied mainly in 'developing' countries of the Global South with a strong focus on South-East Asia.

By interpreting environmental problems through a neo-Malthusian perspective, resource intensive (western) lifestyles, capitalist economies or utilitarian approaches to nature are not addressed as underlying problems. Hence, we argue that the leading nexus discourse presents a typical techno-scientific approach to sustainability that gears policies towards addressing environmental problems without dealing with deeper (political) causes responsible for these problems (Beck, 1992; Castree, 2001; Harvey, 1974).

On the other hand, the alternative nexus discourse actively engages with the political nature of resource governance, allocation, and scarcity. Nature-society relations are acknowledged to have political dimensions that must be investigated within their socio-political, institutional, and historical contexts. The alternative nexus discourse suggests expanding the current nexus to focus more explicitly on power asymmetries, social justice, and the socio-political or historical context of resource allocation, in order to overcome poverty and social inequalities. More social scientific and political analysis are promoted in addition to more collaborative decision-making. However, this alternative nexus approach is less visible and influential within the overarching nexus discourse

Our analysis demonstrates that the nexus discourse as a whole is shaped by distinctly separate discursive formations, knowledge bases, and limited geographical foci. Despite highlighting the need for integrative approaches, the leading nexus discourse takes place in a rather confined intellectual and geographical space. Instead of conceptualizing the nexus in a truly interdisciplinary way, social scientific knowledge seems to be less legitimate and plays a negligible role in shaping the overarching nexus idea. Additionally, the nexus is mainly informed by western knowledge, which is then exported to the Global South.

These distinctions then contrast with the definition of the term *nexus*, which refers to the "connection or series of connections linking two or more things" and "a connected group or series" (Oxford Dictionary, 2018). Both nexus discourses advertise integrative solutions via inter- and transdisciplinary research approaches, and collaborative decision-making. We attribute this divide between rhetoric and real collaboration to a misconception of 'integration'. Instead of endorsing truly inter- and transdisciplinary exchange, genuine cooperation between scientific disciplines is actually limited. Research projects aiming to 'integrate' different types of knowledge often reflect wider power imbalances between natural and social sciences. While such research projects are largely dominated by techno-scientific approaches, social scientists taking marginal positions are often required to subscribe to natural scientific analytical frames and are employed as "after-thoughts" (Strang, 2009: p. 6). However, genuine collaboration, multiple types of expertise and truly integrative approaches are required to explain the complexities of environmental challenges.

In conclusion, we do not oppose or refute the WEF-Nexus concept per se. Instead, we argue that the overarching nexus discourse needs to bridge the current gap between rhetoric and real collaboration by developing into a more holistic, inter- and transdisciplinary concept that also moves beyond its current spatial constraints and scientific reductionism. The current nexus debate needs to overcome its limitations by endorsing epistemic pluralism and knowledge claims from various sources and places. For this purpose, the tech-

no-managerial approach, on the one hand, needs to recognize and acknowledge the deeply political nature of resource use and governance. Indeed, any debate about the nexus "necessarily entails a political or ideological dimension that must be explicitly acknowledged" (Giampietro, 2018: p. 4). Social scientists, on the other hand, are called upon to become more future and action-oriented, by engaging in environmental debates early on and by moving beyond purely theoretical and conceptual approaches. Otherwise, it remains questionable whether the nexus will be able to promote sustainable resource governance. Instead of creating emblematic issues shaped by techno-scientific approaches, we wish to see a wider debate around which nature and society relations we actually intend to promote (see Hajer, 1995).

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# Quantitative story-telling & water governance



Zora Kovacic

Water is difficult to govern: water forces governance to deal with factors outside of human control, such as droughts, flooding, the global water cycle. Water

is difficult to measure: how much water is there in a water basin? In an aquifer? Is it the quantity of water that needs to be managed or its quality? Waterbodies often determine borders between countries, and access to seas and oceans has been a cause of war between countries. Governing (access to) water is therefore not just a technical matter, but a deeply political issue. Water is necessary to human life, as irrigation for agriculture, as drinking water, and as sanitation of wastewater. Governing water has also social and ethical ramifications. In this context, what role should quantitative evidence play?

The quantitative story-telling approach (Saltelli and Giampietro, 2017), currently being developed in the H2020 MAGIC project ([www.magic-nexus.com](http://www.magic-nexus.com)), is an attempt to respond to the challenge of informing policy in the context of uncertainty, complexity and social and political controversies. Quantitative story-telling emphasises the use of metrics as a means to tell a story, as opposed to the Truth. The distinction is based on the acknowledgement that science reduces the complexity of the world by producing simple representations. That is, scientific representations focus on a reduced number of variables (e.g. two or three celestial bodies) and studies them by holding other factors constant. In economics, this simplification is rendered through the *ceteris paribus* assumption. This way, models act as blinders: while they explain certain factors, they leave out causal relationships outside of the model boundaries. Scientific representations are therefore partial representations, based on the simplification of complexity. Science produces partial truths, not



capital Truth. These partial truths are considered as stories: they express the perspective of the discipline that informs the model used.

Quantitative story-telling consists of using multiple sets of metrics, multiple scales of analysis, and multiple analytical lenses as a means of exploring the different stories that numbers can tell. Quantitative story-telling can be seen as an attempt to represent complexity (Kovacic, 2018), by comparing and contrasting multiple representations, rather than privileging one representation over the others. By using the concept of story, quantitative story-telling moves away from the conception of science as a view from nowhere. Science expresses a point of view. The point of view of modern science is one that privileges technical knowledge and the objectivization of value judgements, whereby policy alternatives are assessed in terms of costs and benefits, rather than reflecting upon who bears the costs and who enjoys the benefits. Quantitative story-telling strips metrics and indicators of their objectivity clothes, and uses quantitative evidence reflexively, carefully and modestly.

How has quantitative story-telling been applied to the study of water governance? I give two examples (EU Framework Directive and water consumption in the Netherlands and Germany) of applications that have been used to deal with the challenges of uncertainty and ambiguity.

There are different sources of uncertainty in the research and governance of water. Some uncertainty is linked to the knowledge gaps and limited knowledge about, for instance, estimating the water recharge of an aquifer. This uncertainty arises from the challenge of deciding *what should be observed*. Some uncertainty is also generated by the conceptual tools of science. For instance, the concept of “good ecological status” of rivers used in the European Commission’s Water Framework Directive Uncertainty has proven very difficult to put into practice. Rivers in Northern Europe are affected by pollution, and good ecological status in this context may refer to eutrophication, biodiversity loss, etc. In the arid regions of the Mediterranean, rivers dry up for part of the year, and the challenge is one of avoiding soil run off during rain events, and of preventing over drafting of aquifers. In

this case, uncertainty refers to the challenge of deciding *how to observe*. Is the universal concept of good ecological status a good simplification of complexity, a good way of observing rivers?

Quantitative story-telling uses numbers to assess orders of magnitude, rather than as precise measurements. Saltelli et al. (2013) argue that precision is spurious in the context of uncertainty. Funtowicz and Ravetz (1990) partly because of the metaphysical prejudices that mathematical language is inherently precise and scientific assertions necessarily correct. In this age of global environmental problems, there is an urgent need for a method of expressing judgements of uncertainty and quality that is convenient, robust and nuanced. The notational system NUSAP (Numeral, Unit, Spread, Assessment, Pedigree) use the example of fossil to show that measurements can be vague. The estimated age of a fossil may be expressed as 50 million years, and not as 50,002,019 years. Additional significant digits do not improve the quality of the estimate. This logic has been used in quantitative story-telling to estimate how much water is consumed by different countries and by different economic sectors. The purpose of this assessment is not to estimate water consumption to the millilitre but to compare different indicators. For example, both the Netherlands and Germany use about 10% of water resources in agriculture. In absolute terms, however, the Netherlands use more than twice as much water (1.4 million cubic metres) as Germany (0.6 million cubic meters) (Ripoll-Bosch and Giampietro, 2018). Different stories can be told using these metrics: the focus on proportional consumption explains how water resources are distributed across economic sectors, and can be used to assert that the Netherlands and Germany have similar patterns of resource use. The focus on absolute quantities tells a story about the specialisation of the Netherlands in agricultural production for export, which increases water consumption. This story can be used to discuss the effect of trade of agricultural products in the European Union on water governance within member states. These assessments do not depend on the number of significant digits used, but on the choice of what to measure and how.

Ambiguity refers to the type of uncertainty that is created by the existence of multiple and non-equivalent representations (Kovacic and Di Felice, 2019). An example of non-equivalent representations is efficiency in water use and water scarcity. The two metrics are not proxies for one another, that is, water efficiency is not a measure of scarcity and cannot be converted to scarcity. In some cases, the phenomena described by these metrics are related. For instance, inefficient water use may lead to high losses and worsen water scarcity. Causal relations, however, may run in the opposite direction. This is the case in Israel, which suffers from chronic water scarcity due to aridity, and has developed high water efficiency through technologies such as drip irrigation to cope with water scarcity (Kovacic, 2014). Ambiguity is generated not by the vagueness of the indicators used but by the fact that different indicators allow for multiple scientific interpretations. In other words, numbers do not speak for themselves.

By juxtaposing different metrics, quantitative story-telling draws attention to the voices that are given to different metrics. The interpretation of scientific results is not immune from value judgements. Quantitative story-telling highlights that values and facts cannot be separated. As a consequence, the idea that there can be honest knowledge brokers is challenged. With regard to water governance, the focus on efficiency invites the use of innovation and technology and leads to a depoliticization of water governance, whereas the focus on distribution shifts the focus of governance to questions of equity and social justice.

In conclusion, quantitative story-telling takes inspiration from post-normal science to shift the attention from truth to quality. What constitutes a good representation? What constitutes a good interpretation of results? Funtowicz and Ravetz speak of quality as fitness for purpose. The concept of purpose, in turn, begs the question of whose purpose. Who decided what to observe and how? Who decides how to interpret the results? Who governs water? The use of multiple representations is used as a means to open the assessment and the interpretation of results to multiple stakeholders. The use of metrics as stories as opposed to evidence, takes science out of its



ivory tower and makes room for more types and sources of knowledge to inform policy. This may lead to lengthier decision processes, and higher epistemic uncertainty (Cabello et al., 2018), but it also avoids authoritarian and technocratic forms of governing.

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# Narrative Water Ethics: A Way to Re-theorize the Political in Water Governance?

Simon Meisch



How can narrative water ethics contribute to re-theorizing the political in water governance? Obviously, this question is implicitly premised on another question, namely why we should re-theorize water governance at all. The desideratum to

re-theorize the political in water governance originates from descriptions of a dual deficit. First, ever since Rene Descartes, the project of modernity has produced governance approaches that build on and reinforce the separation of nature and culture and, in this context, the exclusion and objectification of water. As a result, water became an issue that needed to be – and could be – mastered by techno-scientific means and was thus removed from its social and cultural contexts. This led to injustices through the deprivation of rights and the destruction of the environment. Second, governance approaches tended to focus on issues of action coordination and to a lesser degree on underlying political problems, related values and norms and affected actors. Ultimately, this led to the de-politicization of water and its handling by techno-scientific and managerial means – even though water is a paradigmatic ‘wicked problem’ (Rittel und Webber 1973) that is imbricated with social controversy and needs constant political renegotiations of potential solution paths.

Instead, re-conceptualizing the political in water governance requires an understanding of the spatial and temporal dimensions of water, i.e., its context. This includes (but is not limited to) the abilities to acknowledge people’s

experiences with their waters (beyond reductionist notions of H<sub>2</sub>O), to perceive the plurality of different (contentious) cultural perspectives on water and the values and norms associated with it, and, finally, to argue or quarrel about these values and norms. Academic ethics generally regards the systematic exploration of values and norms, as expressed in different moral systems, and guidance towards reasoned action as its central tasks. This also applies to water ethics. Narrative ethics explicitly regards itself as contextual ethics and claims a place between the exact description of moral contexts of action and the prescription of rules of action. It deals with the narrative structure of actions and the significance of narratives for actions.

Subsequently, the criticism of water governance will be briefly explained and narrative water ethics presented as an approach to seeing better the political dimension of water.

## Water Governance and the Political

Water governance is an ambivalent concept. In a way, there can never be no water governance if governance implies those social mechanisms by which collective decisions about water are made and institutionally implemented. In this sense, even abstaining from collectively addressing a problem area (such as water) is already a governance decision. Hence, as an analytical category, the governance perspective asks whether and how institutions are able to cope with tasks assigned to them. Academic and political discourses often link this perspective to the search for good water governance. In a historical perspective, the concept of governance has been contrasted with that of management. Here, the latter is regarded as the prototype of steering and planning by state bureaucracies, whose projects, including large infrastructure projects such as dams, canals or sewage systems, were more often than not implemented top-down, in complete disregard of local conditions. Governance, by contrast, was introduced as a broadening of perspective with regard to scales, sectors, the actors involved in political processes, and policy networks. As opposed to water management, which aimed for efficiency, water governance represented the search for legit-

imacy.

Meanwhile, the governance approach came under criticism because existing forms of water governance did not lead to the anticipated or promised socially just and ecologically tolerable solutions. In addition, conceptions of good governance are based on particular notions of the (morally) Good that often hide behind a technocratic world view and are hardly ever the subject of ethical reflection or public discussion.

In contrast, other concepts have been suggested that stress the social nature of water, such as the hydro-social cycle, socio-natures or waterscapes. They have consistently drawn attention to the dialectical relationships of people and societies to their waters. On this reading, water is appropriated symbolically and culturally in various ways and thus acquires its meaning through the social and cultural circumstances in which it performs its roles while simultaneously shaping the identities of the people who interact with it. These concepts of the (critical) social sciences and humanities emphasize the manifold cultural references to and ontological understandings of water and argue for a shift towards the political in water, a dimension marginalized in current forms of water governance. In spite of these conceptual alternatives, reductionist notions of water have so far prevailed. They tend to reduce water, in all its rich cultural and social manifestations to a single universal substance, represented by the molecule H<sub>2</sub>O, which circulates in the water cycle and whose graphic representations typically do not feature humans or societies.

Consequently, this neglected political dimension needs to be made visible and productive in order to contribute to the development of just policies and institutions. Swyngedouw (2015) characterizes ‘the political’ as the “contested public terrain where different imaginings of possible socio-ecological orders compete over the symbolic and material institutionalization of these visions. Indeed, the terrain of struggle over political-ecological futures – a terrain that makes visible and perceptible the heterogeneous views and desires that cut through the social body – and how to achieve this is precisely what constitutes the terrain of ‘the po-

litical.’” So, a key claim here is that the question of the political in water governance is not about a re-politicization of a previously apolitical field, but rather about consistently confronting the always present political and searching for the public dispute over which present and future water worlds we want to share. Thus, it is also a genuinely ethical issue.

## Re-theorizing the Political with Narrative Ethics

The approach to re-theorizing the political in water governance put forward here draws on ancient Greek understandings of theory. The verb *theôrein* means ‘to look at,’ ‘to observe,’ ‘to see,’ or ‘to contemplate’. Thus, in contrast to its use in modern science, the noun *theôria* refers to the observation, spectatorship, and contemplation of reality – and not its abstraction. From early on, this definition provoked debates about the conceptual relationship between theory and practice (praxis). In this reading, theory reflects social practice, but is not itself this practice. Along these lines, re-theorizing the political in water governance does not deal with abstraction, but with concretization by linking concepts of water governance with life-worlds.

An analytical approach that combines the morally important category of experience with reflected action and identity formation is ‘narrative ethics’ which addresses hermeneutical questions of moral practices. Within the academic debate on what constitutes an appropriate reflection on questions of the good life and the right actions, according to Haker (2006), narrative ethics positions itself in a specific – mediating – way in-between prescriptive forms of normative ethics on the one hand and thick descriptions of the cultural and social sciences on the other. In this vein, narrative water ethics provides a conceptual lens to make visible and contemplate the political in water governance. It adds a crucial dimension to water governance: reflecting and settling upon the aims of contextualized and situated governance approaches.

Narrative ethics argues that forms of ethics focusing solely on discursivity and argumentation remain incomplete and cannot do justice to the complexities of moral questions within social con-

texts. As such, it does not reject normative ethics’ search for claims to the validity of the reasons for our actions. Yet narrative ethics insists that this alone cannot be enough, because this kind of ethical reflection lacks the “historical and life-world depth of focus” (Haker 2010) – or, in other words, context. Thus, narrative ethics insists that narration is a necessary form of addressing moral questions.

Narrative water ethics thus understood deals with concrete persons, actions, geographies, institutions, as well as value and norm systems and explores how these are all entangled in water stories. In doing so, we would not do justice to the depth of water as a reservoir of cultural meanings if the analysis of these stories were to refer solely to literature, and in particular high literature. Innumerable narrative formats thus deal with water; and often, water and its metaphors structure our ways of thinking in the first place. If we engage with narrative entanglements of people with their waters, we need to become aware of this ontological plurality – in particular, if we aim to make it productive for better water governance.

So, narrative water ethics aims to improve actual water practices, which first of all need to acknowledge that there are ‘multiple ontologies of water’, as Yates et al. (2017) argue. In doing so, narrative water ethics draws on the potential of narratives “in creating an alternative space for ecological imagination” (Ingram et al. 2014). As such, it is well suited to better observe, concretize and contemplate certain aspects of the political in water governance, such as context, agency, contestation or values and norms. Water stories make visible and accessible people’s experiences with their waters in the first place. Moreover, they have the potential of challenging worldview by allowing experiences of otherness and complexity (cf. also Kovacic in this special issue). By revealing the plurality and interrelatedness of different knowledges and value systems, they lay the ground for subsequent deliberations on good and fair water worlds.

Thus, narrative water ethics contributes critically and constructively to re-theorizing the political in water, by dealing with stories, i.e., the narrative structuring of experiences and actions. Its critical

perspective problematizes existing moral systems and storytelling itself, while its constructive perspective aims to provide orientation for water action and to influence the debate on historically situated issues about the good life and the right action. As such, narrative water ethics is an approach or method with a view to achieving more reflective water practices, rather than a specific moral approach to how people should act with regard to their waters. Thus, another key claim here is that engaging with the narrative structure of human-water relationships enhances debates on the good life and increases the reflexivity of people’s deliberations on possible and desirable water futures and policies.

To conclude, narrative water ethics contributes to re-theorizing the political in water governance by making the inherent political visible, concrete and productive for social deliberations. As such, the question of the political in water governance is not about a re-politicization of a previously apolitical field, but rather about consistently confronting the always present political and searching for public debates over present and future water worlds. Furthermore, engaging with the narrative structure of human-water relationships enhances these debates and supports the reflexivity of people’s deliberations on possible and desirable water futures. Here lies the potential of narrative ethics for water governance. It recognizes water stories as the structured experience of people with their own waters and grasping their content (interpretations of reality, norms, and value systems). These stories have the ability to represent complex situations and contradictions by integrating and composing different worldviews. This results in hybridized forms of knowledge that enable people to reflect on their relationship to their waters and act together to create their water worlds.

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# The planetary boundary for human water use in a more-than-human world

## a transformative perspective on water and food

Rafael Ziegler<sup>1</sup>



The idea of planetary boundaries is a bold attempt to capture the multi-dimensional and interrelated nature of the global sustainability challenge (Steffen et al. 2015). The boundaries track human-caused risks and damages to major aspects of the earth such as its

biodiversity, climate . . . and freshwater supply. The planetary boundary for human freshwater use (PB-W) is defined as the maximum tolerable amount of total global freshwater consumption by humans for irrigation, livestock raising, domestic purposes, manufacturing and cooling of thermal power plants. Freshwater consumption refers to the fraction of the abstracted freshwater volume that evapotranspires during use and is no longer available in liquid form to other human or non-human water users. The global human water consumption currently amounts to ~1600 km<sup>3</sup>/year; the proposed PB-W is 4000 km<sup>3</sup>/year (Steffen et al. 2015). The following sections will move from a conservative, via an integrated to a transformative interpretation of PB-W. It concludes with implications for water and agriculture.

<sup>1</sup> The following paragraphs are based on the prior publications cited below. I would like to thank Martin Gorke for comments.



At first sight, the point of PB-W is to alert human societies not to transgress the maximum amount of freshwater that can be safely appropriated by humans. Notable threats to this “safe space” are the extinction of freshwater and marine biota, salinization processes and groundwater depletion. A main driver of these impacts is agriculture, with an estimated 70% global rate of water abstraction. This “safe space” reading of water in the planetary system can be qualified as *conservative* as it is primarily focused on securing the current system in the light of threats, present and future. It is consistent with a narrative of growth within limits, maximizing water use potential and for this advancing efficiency of water use, especially in agriculture.

But if we care about unacceptable damage to the Earth system making it less safe, we also ought to care about the individuals and unacceptable damage done to them. This inference leads to the idea of a safe and *just* space. It introduces an idea of sufficientarian justice: ensuring a life in dignity vis à vis a minimum threshold. It proposes an *integrated* reading as it links the idea of upper limits to minimum thresholds: important justice

questions animating the sustainability discourse and its emphasis on meeting and securing needs of present and future generations. Indeed the canonical Brundtland definition had pointed “in particular [to] the essential needs of the world’s poor, to which overriding priority should be given”. For water, this integrated reading leads to the need of - and UN recognized human right to - a minimum of safe, affordable and acceptable water for drinking and hygiene, and also to the water requirements of agriculture so as to meet nutritional needs. Assuming a PB-W of 4000 km<sup>3</sup>/yr., both threshold needs can be met given the current state of technology and population (see Ziegler, Gerten and Döll 2017 for further discussion).

However, at this point we might also ponder a third *transformative* reading. Already the extinction of freshwater biota pointed to damage beyond impact on humans alone. So whose harm is to be considered? On a bio-centric interpretation, all life is morally relevant. The high risk to biodiversity and ongoing extinction of species, especially in aquatic ecosystems, indicates not only a loss for us but direct harm to other living beings. Inspired by the practical ethics of figures such as Mahatma Gandhi and Albert Schweitzer, Paul Taylor spelled out such a perspective systematically (Taylor 1986). It implies a primary focus on the minimum threshold of living in dignity, and with it an economy and agriculture of enough.

To see this, we need to turn to the moral principles suggested by this environmental philosophy perspective for humans as moral agents *and* hetero-trophic beings who unlike plants cannot produce their own food via photosynthesis. Must humans not inevitably violate biocentrism - in the field and on the plate? The answer is no, and it is inspired by Taylor’s idea of priority principles for moral agents. I propose as a constructive development of Taylor’s philosophy the following principles: a principle of self-preservation according to which it is permissible for moral agents to foster and secure their central capabilities; a principle of proportionality that gives priority to central capabilities over other capabilities; a principle of minimum wrong that requires human agents to minimize harm

when pursuing their self-preservation (Ziegler 2019). The idea of legitimate self-preservation coupled with respect for everyone's need yields a transformative interpretation: a focus on an economy of enough, and the water (and other requirements) needed to meet threshold(s) of living in dignity. Where resource and water use moves beyond the threshold to wants and luxury consumption, this third perspective asks for a justification: is this water use synergetic and respectful with the water requirements of other species?

To be sure, the transformative reading raises numerous questions of justification and of operationalisation. Here I can only point to some implications for thinking about water and agriculture: a search for improved water productivity, but also on the demand side a reconsideration of water-intensive 'lifestyle choices'. Reduction of animal-based products dramatically reduces the human freshwater requirement. Moreover, European agriculture has emerged as a dryland agriculture inspired by the Mesopotamian civilization. Thus mires and wetlands had to be drained in many parts of swampy central and Northern Europe to claim land for dry agriculture. All the more interesting therefore that we currently see attempts to rethink agriculture as paludiculture, i.e. wet agriculture on rewetted mires (Wichtmann, Schröder und Joosten 2016). This move so far is mainly motivated by climate change considerations, because drained mires are a potent sources of greenhouse gases. But it also opens up an opportunity to re-think agriculture in a way that situates it within restoration of wetlands and green water flows, i.e. the habitat of other species in a more than human world, and on this basis explores a place for wet agriculture. On the transformative reading, the paludiculture is just as important as the natural science assessment of greenhouse gas emissions. The rejection of a maximization of needs and wants in an economy of enough would create space for mire and wetland restoration – much needed in recognition of the biodiversity and habitat decline in freshwater ecosystems. It offers a philosophical framework to explore the possibilities of wet

agriculture and the circular economy options suggested by it as genuine transition rather than incremental adjustment only.

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# update

## EurSafe executive committee

After a long and hot summer this is a good moment to look back to what happened in the last months and look forward to what we can expect.

In March the Executive Committee had its regular Spring meeting in Utrecht followed by a telephone meeting in June. In both meetings, we discussed the progress of the EurSafe 2019 conference, but also made first steps for the organization of the next conference in 2021 and 2022. We hope to update you on the further details of the next conferences in Tampere and on our website. Other important points were the member survey, the new website, the finances, and the planning of the (re)election of board member.

### Website

With regard to the website, you may have noticed that we launched a new website ([www.eursafe.org](http://www.eursafe.org)) in May. With a new design and more flexibility we hope this will contribute to an improved communication and enable EurSafe to function as a platform to exchange information and expertise. If you have any feedback on the current website or ideas on how further to improve its function, please let us know.

### Survey

Furthermore, early July you all received an email with an invitation to participate in a members' survey. We cordially invite you to share with us your experience with EurSafe and indicate what you value most and/ or tell us what could be improved or developed. This will help us to make EurSafe an (even) more attractive society. You can find the survey at: <https://forms.gle/s8QrB4hem-rGV4WbGA>

### Conference

Finally, we are very close to our next conference in Tampere. With the title "Sustainable governance and management of food systems: ethical perspectives" and a promising line up of key note lecture, oral presentations and poster presentations it will be an inspiring meeting. The organizing committee is in full control and as Board of EurSafe we are looking forward meeting many of you in Tampere.

### General Assembly

This leads me to one important final point, I would like to use this opportunity to invite you as member of EurSafe to the General Assembly in Tampere, on 19 September. Further details and the agenda have been communicated by mail, but if you have any points for the agenda or candidates for the Executive committee, please do not hesitate to contact me.

Franck Meijboom

On behalf of the Executive Board, 18 February 2019

## SEPTEMBER 18-21

### EurSafe Conference 2019: Sustainable governance and management of food systems: ethical perspectives

Tampere, Finland  
<https://events.uta.fi/eursafe2019/>

## SEPTEMBER 23

### Animal Minds & Animal Ethics: Across Species, Across Disciplines

Vetmeduni Vienna, Veterinaerplatz 1, 1210 Vienna  
Starting at 9.30 am

This interdisciplinary conference on social cognition in animals and its ethical implications gathers researchers from different disciplines – philosophy of mind, animal ethics, animal cognition, animal welfare science – to assess the current state of research and discuss new approaches.

Participation is free, but if you plan to attend please register by sending an e-mail to: Susana.Monso@vetmeduni.ac.at

## 30 SEPT - 1 OCT

### Mainstreaming Animal Protection - World Conference

Helsingør,  
<https://cdf.dk/mainstream-animal-protection-2019/>

## OCTOBER 14-15

### One Welfare Conference II TAG Family Foundation Grandstand

Oval Number 2, The University of Sydney  
<https://www.cve.edu.au/conference/one-welfare-conference-ii>

## OCTOBER 24-25

### Ninth International Conference on Food Studies

Kaohsiung, Taiwan  
<http://food-studies.com/2019-conference/call-for-papers>

## OCTOBER 25-27

### The 27th Annual Animal Law Conference Representing Animals: Elevating Animal Status

Portland, Oregon  
<https://animallawconference.org/>

## NOVEMBER 6

### 9th Animal Task Force Seminar: "Towards a climate smart European livestock farming"

University Foundation, Brussels, Belgium.

2020

## MAY 27-30

### AFHVS/ASFS Conference Cultivating Connections: Exploring Entry Points into Sustainable Food Systems

The University of Georgia will host our 2020 Conference in Athens, Georgia. It will focus on the history and impact of race and culture in agriculture and the broader food system. Save the date and stay tuned for more information!

## AUGUST 31- SEPTEMBER 4

### 71st Annual Meeting of the European Federation of Animal Science

Porto, Portugal  
<https://www.eaap2020.org/>





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