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The Programmatic Approach to Achieving Sustainability in Environmental Law: Is it Possible?

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Published in:
Environmental law for transitions to sustainability

DOI:
[10.1017/9781780689302.003](https://doi.org/10.1017/9781780689302.003)

IMPORTANT NOTE: You are advised to consult the publisher's version (publisher's PDF) if you wish to cite from it. Please check the document version below.

Document Version
Publisher's PDF, also known as Version of record

Publication date:
2021

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Braaksma, L. (2021). The Programmatic Approach to Achieving Sustainability in Environmental Law: Is it Possible? In M. Boeve, S. Akerboom, C. Bakkes, & M. van Rijswijk (Eds.), *Environmental law for transitions to sustainability* (pp. 29-44). (European Environmental Law Forum Series; Vol. 7). Intersentia. <https://doi.org/10.1017/9781780689302.003>

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THE PROGRAMMATIC APPROACH TO ACHIEVING SUSTAINABILITY IN ENVIRONMENTAL LAW

Is it Possible?

L.S. (Lolke) BRAAKSMA

1. INTRODUCTION

Ecosystems are subjected to growing pressures.¹ As humankind's capacity to manipulate and alter ecosystems increases, more and more ecosystem goods and services are secured for socio-economic development.² Within scientific communities, a consensus has emerged that global environmental conditions are worsening, with humankind's over-exploitation as the main driver.³

Climate change and biodiversity loss are considered to be the two major environmental challenges of our era.⁴ A study published in 2016 showed that the adverse impacts of this over-exploitation have already caused biodiversity to fall to unsustainable levels across more than half of the world's landmass.⁵

¹ See e.g. S.L. Maxwell et al., 'Biodiversity: The ravages of guns, nets and bulldozers' (2016) 536 *Nature* 143–145; H.F.M.W. van Rijswijk, 'The Road to Sustainability: How Environmental Law Can Deal with Complexity and Flexibility', editorial in (2012) 8(3) *Utrecht law Review* 1.

² Daily describes ecosystem services as 'the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfil human life', in G. Daily (ed.), *Nature's services: Societal Dependence on Natural Ecosystems*, 4th ed., Island Press, Washington D.C. 1997, idem. 3; See: Millennium Ecosystem Assessment, *Ecosystems and Human Well-Being: Synthesis*, Island Press, Washington D.C. 2005.

³ R.E. Kim, K. Bosselmann and V. Mauerhofer, *Planetary Boundaries in Post-2015 Sustainable Development Goals: Safeguarding Ecological Integrity as a Priority Goal and a Grundnorm of International Law*, Planetary Boundaries Initiative, WWF-UK 2013, 24/25.

⁴ K. Skogen, H. Helland and B. Kaltenborn, 'Concern about climate change, biodiversity loss, habitat degradation and landscape change: Embedded in different packages of environmental concern?' (2018) 44 *Journal for Nature Conservation* 12–20.

⁵ T. Newbold et al., 'Has land use pushed terrestrial biodiversity beyond the planetary boundary? A global assessment' (2016) 353 *Science* 288–291. Other environmental concerns – interconnected with these two concerns – are interference with the nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, changes in land use, chemical pollution, and atmospheric aerosol loading, see: R.E. Kim,

The gravity of these environmental concerns led scientists to assume that a new interval of geologic time period had begun after the ‘Holocene’, since humans have altered Earth’s functioning so immensely. This time period is called the ‘Anthropocene.’⁶ While the precise consequences of this shift are uncertain, they are very likely to be catastrophic to human societies. International consensus has been reached to act fast and drastically on the myriad of environmental concerns at hand.⁷

It has been argued that current legal frameworks are inadequate to achieve sustainability.⁸ Examples include provisions over-valuing political and economic objectives at the expense of environmental objectives, as well as the fragmented structure of legal frameworks, which is too centralised and places too much emphasis on uniform models and rational, linear, legal-centralist processes that assume certainty.⁹ Fundamental changes are necessary to the main approaches governing social-economic systems that pursue sustainability.¹⁰

In the search for more sustainable management practices, numerous heterogeneous approaches are being developed and researched. The programmatic approach could be a frontrunner in this regard.¹¹ Examples of this approach can be found in the European Union (EU) and its Member States to achieve sectoral environmental objectives regarding, for instance, water quality, air quality and the conservation of Natura 2000 sites.¹² In the Netherlands, the most notable examples of the programmatic approach are the National Air Quality Cooperation Programme (NAQCP) and the (former) Programmatic Approach to Nitrogen (PAN).¹³ These integrated approaches have the two-fold

K. Bosselmann and V. Mauerhofer, *Planetary Boundaries in Post-2015 Sustainable Development Goals: Safeguarding Ecological Integrity as a Priority Goal and a Grundnorm of International Law*, Planetary Boundaries Initiative, WWF-UK 2013, idem. 5.

⁶ See e.g. E.C. Ellis, *Anthropocene: A Very Short Introduction*, Oxford University Press, Oxford 2018.

⁷ See e.g. the United Nations Framework Convention on Climate Change (UNFCCC), COP 21, the Paris Agreement.

⁸ See e.g. K.N. Lee, ‘Deliberately Seeking Sustainability in the Columbia River Basin’ in L.H. Gunderson, C.S. Holling and S.S. Light (eds.), *Barriers and Bridges to Renewal of Regional Ecosystems*, Columbia University Press, New York 1995.

⁹ See e.g. F.M. Platjouw, *Environmental Law and the Ecosystem Approach: Maintaining Ecological Integrity Through Consistency in Law*, Routledge: Earthscan, London 2016.

¹⁰ See e.g. K.N. Lee, ‘Deliberately Seeking Sustainability in the Columbia River Basin’ in L.H. Gunderson, C.S. Holling and S.S. Light (eds.), *Barriers and Bridges to Renewal of Regional Ecosystems*, Columbia University Press, New York 1995.

¹¹ See e.g. R.H.W. Frins and L.J.M. Timmermans, ‘De bestuursrechtelijke toekomst programmatisch aangepakt’ in R.J.N. Schlössels, B.A. Beijen, A.M.M.M. Bots and J.A.F. Peters (eds.), *In het nu ... wat worden zal: Over toekomstig bestuursrecht*, Kluwer, Deventer 2018, idem. 135–158.

¹² See e.g. A.A. Freriks and H.F.M.W. van Rijswijk, ‘Programmatische aanpak stikstof en programmatische aanpak water: van tweeën een?’ (2015) 9 *Tijdschrift voor Agrarisch Recht* 399.

¹³ *Dutch Government Gazette* 2015, 16320; *Dutch Government Gazette* 2009, 11559.

objective of achieving environmental objectives whilst allowing new economic development to take place.¹⁴ The future Dutch Environment and Planning Act, which is anticipated to come into force in 2022, introduces a generic version of the programmatic approach, allowing this approach to be used for practically every component of the physical environment.¹⁵

This chapter aims to explore the legal implications and challenges of the programmatic approach when used to support the transition to sustainability. It begins by setting out the pathways to manage the environment sustainably and continues by providing an overview of what is required as a basis for environmental law to enable the transition towards this ideal. This points towards the application of the programmatic approach with a set of prerequisites (section 2). After that, EU and Dutch legal frameworks are discussed and analysed in light of this normative framework. The result will be an overview of the main legal implications and challenges when using the programmatic approach to strive for sustainability (section 3).¹⁶ Finally, general conclusions are drawn (section 4).

2. THE PROGRAMMATIC APPROACH: A PROMISING APPROACH TO PURSUE SUSTAINABILITY

2.1. SETTING THE STAGE: SUSTAINABILITY AND SUSTAINABLE DEVELOPMENT

The dedication to move towards sustainability – the goal of a human-ecosystem equilibrium – can be observed in all sectors of society nowadays. Sustainable development – the holistic approach and temporal processes that lead us to sustainability – is regarded, in turn, as the main paradigm to act upon environmental concerns.¹⁷ The concept of sustainable development gained worldwide attention with the publication of the Brundtland report, where it is defined as ‘[d]evelopment that meets the needs of the present without

¹⁴ A reduction of administrative costs is also mentioned as an objective of the programmatic approach, see e.g. *Dutch Government Gazette* 2015, 16320, idem. 31.

¹⁵ *Governmental Gazette* 2016, 156; *Parliamentary Papers II* 2020/21, 33118, no. 160. The physical environment is defined in article 1.2 of this Act and includes nature, water, infrastructure, housing, parking, recreation and mobility.

¹⁶ This part is delineated by only taking examples from regulations to achieve objectives regarding air quality, water quality and Natura 2000 sites.

¹⁷ See e.g. K. Bosselmann, *The Principle of Sustainability*, Routledge: Taylor & Francis, London 2016; M. Leach, I. Scoones and A. Stirling, *Dynamic sustainabilities: technology, environment, social justice*, Earthscan, London 2010. Some argue that the paradigm of sustainability should be replaced by resilience, see e.g. R.K. Craig and M.H. Benson, ‘Replacing Sustainability’ (2013) 46(4) *Akron Law Review* 841.

compromising the ability of future generations to meet their own needs.¹⁸ It is generally understood that sustainable development requires a balancing act between environmental, social and economic dimensions to attain a harmonious co-existence between them. The exact meaning of sustainable development is, however, contested and uncertain.¹⁹ There is, for example, discussion on how different interests should be valued and weighed, both on an abstract level as well as in concrete cases.²⁰

This chapter does not try to settle the debate on the precise implications of sustainable development. Instead, this concept is operationalised by discussing the conditions necessary to pursue sustainability. To this end, the concept of environmental utilisation space (EUS) is used, which illustrates that there are limits to the pressures that ecosystems can endure (section 2.2). Subsequently, the ecosystem approach and adaptive management are discussed, offering pathways to manage ecosystems sustainably (section 2.3). The section ends by providing the elements needed in light of these theories, resulting in a normative framework of the programmatic approach (section 2.4).

2.2. THE CONCEPT OF ENVIRONMENTAL UTILISATION SPACE

The concept of environmental utilisation space (EUS) represents the idea that exploitation ceilings can be formulated for the sustainable use of (non-)renewable environmental goods and of the natural environment as a sink for emissions.²¹ Opschoor defines EUS as ‘the locus of all feasible combinations of environmental services that represent steady states in terms of levels of relevant environmental quality and stocks of renewable sources.’²² In other words: the EUS concept reflects the limits of the services provided by ecosystems and the capacity to absorb waste and pollution and regenerate.²³

¹⁸ Report of the World Commission on Environment and Development, *Our Common Future*, United Nations General Assembly, Annex to document A/42/427, 1987, idem. 37.

¹⁹ J.M. Mog, ‘Managing Development Programs for Sustainability: Integrating Development and Research Through Adaptive Management’ (2006) 19(6) *Society and Natural Resources* 531.

²⁰ There is, for example, discussion on placing an equal value on environmental, social and economic interests (‘weak’ sustainable development), instead of acknowledging that humans are dependent on nature, that humans are a part of nature and that ecosystems and elements of them have a value in themselves, which results in prioritising environmental interests above environmental and social interests (‘strong’ sustainable development).

²¹ V. Beekman, ‘Environmental Utilization Space Between Science and Politics’ (2004) 17(3) *Journal of Agricultural and Environmental Ethics* 293, 294.

²² J.B. Opschoor and R. Weterings, ‘Environmental utilisation space: An introduction’ (1994) 9(5) *Tijdschrift voor Milieukunde* 198, 199.

²³ See also: L.S. Braaksma and K.J. de Graaf, ‘Managing Environmental Utilisation Space in the Dutch Environment and Planning Act’ in H. Tegner Anker and B.E. Olsen (eds.), *Sustainable*

The innovative part of the EUS concept is that it became clearer that there are, at all times, limits to the amount of environmental pressure that the ecosystems can take without damaging these systems or the life support processes that they enable.²⁴ De Bruyn gives the following example: one should not harvest more from the stock than the stock grows each year, or the next year will return a lower available stock for providing environmental services.²⁵ Beekman notes that the EUS concept embraces two striking features, namely intergenerational egalitarianism in the distribution of environmental goods *and* an egalitarian distribution of environmental utilisation space among the members of the current generation.²⁶

From the above it becomes clear that there are boundaries to the environmental pressures ecosystems can take, and that, therefore, polluting rights are scarce. Now, the question rises as to how ecosystems should be managed to pursue sustainability and what that implies for the legal framework.

2.3. THE ECOSYSTEM APPROACH AND ADAPTIVE MANAGEMENT

The ecosystem approach has been described as a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.²⁷ Trouwborst argues that, throughout the variety of definitions for an ecosystem approach, three core elements are substantially agreed upon. These elements are: (1) a holistic management of human activities (2) which is based on the best available knowledge on the components, structure and dynamics of ecosystems (3) and is aimed at satisfying human needs in a way that does not compromise the integrity or health of ecosystems.²⁸ Platjouw adheres to these elements and elaborates on the holistic

Management of Natural Resources: Legal Instruments and Approaches, Intersentia, Vol 5 European Environmental Law Forum Series, Cambridge 2018, idem. 142.

²⁴ J.B. Opschoor and R. Weterings, 'Environmental utilisation space: An introduction' (1994) 9(5) *Tijdschrift voor Milieukunde* 198.

²⁵ S.M. de Bruyn, *Economic Growth and the Environment: An Empirical Analysis*, Springer, Dordrecht 2000, idem. 29.

²⁶ V. Beekman, 'Environmental Utilization Space Between Science and Politics' (2004) 17(3) *Journal of Agricultural and Environmental Ethics* 293, 294–295.

²⁷ See the Convention on Biological Diversity, www.cbd.com; D.E.J. Currie, *Ecosystem-Based Management in Multilateral Environmental Agreement: Progress towards Adopting the Ecosystem Approach in the International Management of Living Marine Resources*, World Wildlife Fund 2007, idem. 1–2.

²⁸ A. Trouwborst, 'The Precautionary Principle and the Ecosystem Approach in International Law: Differences, Similarities and Linkages' (2009) 18(1) *Review of European Community & International Environmental Law* 26.

element and integrative element.²⁹ The holistic element in environmental law refers to the idea that ecosystems should be seen and protected as a whole, whereas the integrative element aims to couple the sustainable use of ecosystem goods while maintaining the integrity of those ecosystems.³⁰

The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. One of the key objectives of the ecosystem approach is the maintenance of ecosystem integrity.³¹ The ecosystem approach does not preclude other management and conservation approaches, such as single-species conservation programmes, but aims to integrate all these approaches and other methodologies to deal with complex situations. A comprehensive set of (various) measures have to be put in place on national, regional, local, and other scales to be effective.³² Slocombe argues that adaptive management allows for the flexibility and inclusiveness to deal with constant environmental, societal and political change, which is necessary to adopt an ecosystem approach.³³

The concept of resilience is – together with experimental science, systems theory and industrial ecology – considered the origin of adaptive management.³⁴ The idea of adaptive management was proposed by Holling in 1978, and has been developed further ever since.³⁵ Allen and Garmestani describe adaptive management theory as

the process of defining and bounding the management problem, identifying and representing what we know through models of dynamics that identify assumptions and predictions so experience can further learning, identifying possible sources of uncertainty and alternate hypotheses and designing policies to allow continued resource management while enhancing learning.³⁶

Essentially, this type of management translates essential ecological understanding based on extended studies of complex ecological systems into localised

²⁹ F.M. Platjouw, *Environmental Law and the Ecosystem Approach: Maintaining Ecological Integrity Through Consistency in Law*, Routledge: Earthscan, London 2016, chapter 2.1.

³⁰ H.D. Tolsma, *Integrated Environmental Permitting. Towards a Coherent System of Environmental Law in the Netherlands*, Europa Law Publishing, Zutphen 2019, idem. 10.

³¹ F.M. Platjouw, *Environmental Law and the Ecosystem Approach: Maintaining Ecological Integrity Through Consistency in Law*, Routledge: Earthscan, London 2016, idem. 71.

³² See e.g. annex 7 of the International Technical Workshop, *Biological Management of Soil Ecosystems for Sustainable Agriculture*, found on: www.fao.org.

³³ D.S. Slocombe, 'FORUM: Defining Goals and Criteria for Ecosystem-Based Management' (1998) 22(4) *Environmental Management* 483–493.

³⁴ C.R. Allen et al., 'Adaptive Management of Rangeland Systems' in D. Briske (ed.), *Rangeland Systems*, Springer Series on Environmental Management 2017, idem. 376.

³⁵ C.S. Holling, *Adaptive Environmental Assessment and Management*, Wiley, Chichester 1978.

³⁶ C.R. Allen and A.S. Garmestani, 'Adaptive management' in C.R. Allen and A.S. Garmestani (eds.), *Adaptive Management of Social-Ecological Systems*, Springer, Dordrecht 2015, idem. 4.

implications for human society. This is particularly the case for human learning and institutional change in a certain area.³⁷ The essence of adaptive management theory is an iterative, incremental, decision-making process built around a continuous flow of monitoring the effects of decisions and adjusting decisions accordingly.³⁸ This allows for a better response to the ecological uncertainty regarding ecosystems. Roughly three types of uncertainty can be identified, namely: imperfect knowledge, when knowledge on how ecosystems work is inadequate or inexact; incomplete knowledge, where multiple perspectives are needed to construct a full system understanding; and unpredictability, which results from the inherent variability and constant co-evolution of complex systems.³⁹

A foundational premise of adaptive management is that knowledge of ecological systems is often incomplete and that, therefore, human interactions with the system should be experimental. Two frameworks to describe the processes that guide the implementation of adaptive management in resource systems can be distinguished: passive and active adaptive management.⁴⁰ Passive adaptive management can be described as the ‘*traditional prescription*’-type of management in which the best possible predictive model is designed. This model should be acted upon until evidence shows that the model is outdated.⁴¹ This style unintentionally leads to additional knowledge about resource management, but it does not pursue such learning. Active adaptive management, in contrast, takes a more experimental route by pursuing management interventions which lead to learning. The key difference between these two frameworks ultimately comes down to the way uncertainty is recognised and treated.⁴²

The literature seems to be rather clear on the general steps to be taken for passive- and active adaptive management.⁴³ The first step is to define goals and objectives; the second step is to formulate a plan and policies to reach these goals and objectives; the third step is to implement them; the fourth step is to evaluate, and lastly; the fifth step is to see what lessons can be learned

³⁷ J. Jiggins and N. Röling, ‘Adaptive Management: Potential and Limitations for Ecological Governance of Forests in a Context Normative Pluriformity’ in J.A.E. Oglethorpe (ed.), *Adaptive Management: From Theory to Practice*, IUCN, Gland/Cambridge 2002, idem. 94.

³⁸ J.B. Ruhl, ‘Panarchy and the Law’ (2012) 17(3) *Ecology and Society* 31.

³⁹ L. Hasselman, ‘Adaptive management; adaptive co-management; adaptive governance: what’s the difference?’ (2017) 24(1) *Australasian Journal of Environmental Management* 31.

⁴⁰ See e.g. B. Williams, ‘Passive and active adaptive management: Approaches and an example’ (2011) 92(5) *Journal of Environmental Management* 1371.

⁴¹ C.J. Walters, *Adaptive Management of Renewable Resources*, Macmillan Publishers, Basingstoke 1986, idem. vii.

⁴² B. Williams, ‘Passive and active adaptive management: Approaches and an example’ (2011) 92(5) *Journal of Environmental Management* 1371.

⁴³ See e.g. D.D. Murphy and P. Weiland, ‘Science and structured decision-making: Fulfilling the promise of adaptive management for imperiled species’ (2014) 4(3) *Journal of Environmental Studies and Sciences* 200.

(which can lead to a feedback loop to step two) to define a new or changed plan and policies.

In short, the ecosystem approach and adaptive management requires (1) environmental quality objectives, set on the basis of available knowledge on the components, structure and dynamics of ecosystems, which aim to satisfy human needs in a way that does not compromise the integrity or health of ecosystems, together with (2) a coordinated and integrated approach of land-use management and (3) the constant generation and incorporation of new sustainability knowledge and, finally, (4) adaptation of land-use decisions to best available knowledge.⁴⁴

2.4. A NORMATIVE FRAMEWORK FOR THE PROGRAMMATIC APPROACH

The programmatic approach as a policy instrument can be supportive to pursue sustainability. This chapter defines this approach as ‘an integrated, cyclic decision-making process – following a structured, multistep protocol – which contains the use of plans and programmes to achieve environmental objectives within a certain time frame.’ Some readers will recognise similarities between this definition and definitions of adaptive management. This is no surprise, as the idea of the programmatic approach can be regarded as a novel adaptive management strategy.⁴⁵

Similar steps can be identified when using the programmatic approach compared to adaptive management. The first is to identify the environmental objectives for the compartments of the environment that have to be achieved within a set time frame. The second step is to design a coherent and consistent plan and/or programme, which includes selecting the measures to improve the quality of the environment as well as a framework to influence the permissibility of new socio-economic developments. The third is to conduct interim monitoring, and evaluate whether the plan and/or programme concerned is on track to achieve the environmental objectives. The fourth step is to adapt the plan and/or programme: this means it is modified when interim monitoring results or new scientific knowledge indicates that the environmental objectives are not achievable within the set time frame.

⁴⁴ See also: H.F.M.W. van Rijswick et al., *Rechtsvergleichende Studie zu Instrumenten eines nachhaltigen Landmanagements Comparative Law Analysis on Instruments for Sustainable Land Management (CLAIM)*, Leibniz-Zentrum für Agrarlandschaftsforschung (ZALF) e.V. 2015.

⁴⁵ See also: H. Schoukens, ‘The quest for the Holy Grail and the Dutch Integrated Approach to Nitrogen: how to align adaptive management strategies with the EU Nature Directives?’ (2018) 15(2) *Journal for European Environmental & Planning Law* 171.

In addition, as a prerequisite, the accompanying legal frameworks should support the programmatic approach. These frameworks should therefore include a coherent and consistent set of provisions to, *inter alia*, (re)distribute environmental utilisation space, to revoke permits, and to monitor, evaluate and adapt the plan or programme. Next to that, the legal frameworks should also include other elements necessary in a constitutional democracy: *inter alia*, norms regarding transparency, participation, legal protection, streamlined decision-making processes and providing compensatory measures when permits which allow detrimental activities are revoked.⁴⁶

3. THE PROGRAMMATIC APPROACH IN EU AND DUTCH ENVIRONMENTAL LAW: LEGAL IMPLICATIONS AND CHALLENGES

3.1. INTRODUCTION

From the above, the requirements the programmatic approach should adhere to from theory, have become relatively clear. Now it is time to analyse the legal implications and challenges which emerge when this normative-laden approach is implemented within EU and Dutch legal frameworks.⁴⁷ This analysis will be done on a conceptual level and in line with the four stages of the programmatic approach as identified in section 2.4 above. At the end of each stage, examples of legal implications and challenges that arise from current legal frameworks will be provided. Monitoring and evaluating are discussed together with the adaptive element, as this element on its own is less interesting from a legal point of view. The analysis is, therefore, undertaken for environmental objectives (section 3.2), plans and programmes, (section 3.3) and monitoring, evaluation and adaptation (section 3.4).

3.2. SETTING ENVIRONMENTAL OBJECTIVES

3.2.1. *The Regime for Formulating Objectives*

Article 192 Treaty on the Functioning of the European Union (TFEU) stipulates that EU environmental policy and law aims to preserve, protect and improve

⁴⁶ See e.g. R. Bellamy, 'Constitutional Democracy' in M.T. Gibbons (ed.), *The Encyclopedia of Political Thought*, Wiley-Blackwell, Hooken NJ/Oxford 2014; These legal frameworks should be based on environmental principles, see e.g. G.A. Biezeveld, *Onze ecologische voetafdruk. Hoe het milieurecht kan helpen die te verkleinen*, Europa Law Publishing, Groningen 2009.

⁴⁷ See also: F.A.G. Groothuijse and R. Uylenburg, 'Everything according to plan? Achieving environmental quality standards by a programmatic approach' in M. Peeters and R. Uylenburg, *EU Environmental Legislation. Legal Perspectives on Regulatory Strategies*, Edward Elgar, Cheltenham 2014.

the quality of the environment. Often, policies based on this provision require a certain quality of some aspect of the environment that must be achieved within a time frame, the so-called environmental quality standard (EQS). Although EU environmental law does not provide for a uniform definition of EQSs, such a standard can generally be defined as a value or quality that specifies the status of a specific component of the ecosystem, such as air, soil or water, which has to be achieved by Member States.⁴⁸ An example of an EQS can be found in Article 2(35) of the Water Framework Directive where it is defined as ‘the concentration of a particular pollutant or group of pollutants in water, sediment or biota which should not be exceeded in order to protect human health and the environment.’⁴⁹

Member States often enjoy a considerable amount of discretion to choose how they want to achieve EQSs.⁵⁰ A Member State can, for example, decide to halt issuing permits for new activities that are detrimental to the environment. It may also decide to reduce the emissions of current detrimental activities by (partly) revoking the permit necessary to conduct the activity, thereby reducing the detrimental effects of that activity. This strategy can also be used sometimes to offset (or to compensate for) the detrimental effects of a new project. Another route is to prescribe improvement measures when permitting a new project (mitigation), such as filters to reduce emissions into the air. Other measures are to (let third parties) carry out measures that improve the quality of the environment.

This type of thinking in environmental law is typically referred to as the goal-based approach: goals are specified in EU and/or national law, and it is more or less left to the public authorities of the Member States to decide how to achieve them. Goal-based approaches

consist of norms, which operate at different levels: the goals setting the high-level objectives; the functional requirements including the criteria to be met to fulfill the goals; and the regulations that set out the detailed requirements for meeting the functional requirements and the goals.⁵¹

⁴⁸ See for another definition: F.A.G. Groothuijse and R. Uylenburg, ‘Everything according to plan? Achieving environmental quality standards by a programmatic approach’ in M. Peeters and R. Uylenburg, *EU Environmental Legislation. Legal Perspectives on Regulatory Strategies*, Edward Elgar, Cheltenham 2014, idem. 117–118.

⁴⁹ Directive 2000/60/EC of the European Parliament and of the Council of 23 October establishing a framework for Community action in the field of water policy.

⁵⁰ M.N. Boeve and G.M. van den Broek, ‘The Programmatic Approach; a Flexible and Complex Tool to Achieve Environmental Quality Standards’ (2012) 8(3) *Utrecht Law Review* 74; Article 288 TFEU.

⁵¹ T. Henriksen, ‘Protecting Polar Environments: Coherency in Regulating Arctic Shipping’ in R. Rayfuse (ed.), *Research Handbook on International Marine Environmental Law*, Edward Elgar, Cheltenham 2015, idem. 370.

In this context, the distinction between emission limit values (ELVs) and EQSs is crucial. ELVs are not aimed at achieving a certain quality of a component of the ecosystem within a certain time frame, but rather at limiting the emissions of polluting substances in the environment at the source to a certain level. Just like EQSs, ELVs are not uniformly defined in EU law. ELVs are defined in the IE Directive as ‘the mass, expressed in terms of certain specific parameters, concentration and/or level of an emission, which may not be exceeded during one or more periods of time.’⁵²

It is not necessarily the case that achieving the ELVs will result in achieving a certain EQS. Groothuijse and Uylenburg point out the possibility that all individual point sources comply with an applicable ELV set for a certain substance, but that the EQS for the same substance is nevertheless exceeded because of other diffuse pollution sources that are not directly linked to a specific point source.⁵³ An ELV, therefore, does not determine the maximum concentration of emissions of a certain substance in component of the environment. There is, of course, a substantial link between controlling ELVs and the EQSs, as it will be easier to achieve EQSs when the emissions of point sources are limited. Legal frameworks can provide a link between the ELVs and EQSs in the assessment criteria for a permit for a specific detrimental activity.⁵⁴

The EUS concept is also relevant in this regard. The EQSs are supposed to set concrete requirements on what a good state of water quality entails. This means that a ceiling must be created, which, together with knowing (or using models to estimate) the current state of the quality of the environment and how it is influenced by prescribing ELVs and other factors, means that – at least in theory – the EUS can be determined for a component of the environment.

3.2.2. *Examples of Legal Implications and Challenges*

Several examples of legal implications and challenges can be identified when setting environmental objectives with a programmatic approach to pursue sustainability. One lies in taking into account all components of the ecosystem.⁵⁵ EQSs are not always based on the pressures that the environment can take, as the maximum environmental pressure is expressed in legally binding norms which are often – if not always – influenced by socio-economic interests.

⁵² Article 3 under 5 of the IE Directive.

⁵³ F.A.G. Groothuijse and R. Uylenburg, ‘Everything according to plan? Achieving environmental quality standards by a programmatic approach’ in M. Peeters and R. Uylenburg, *EU Environmental Legislation. Legal Perspectives on Regulatory Strategies*, Edward Elgar, Cheltenham 2014, §1.

⁵⁴ Ibid.

⁵⁵ R.T. Lackey, ‘Seven pillars of ecosystem management’ (1998) 40(1–3) *Landscape and Urban Planning* 21–30.

This means that the legal leeway does not necessarily correspond with the capacity of ecosystems and, consequently, that the ecological EUS is at odds with the legal EUS.⁵⁶ Examples of this include the fact that EQSs can be different throughout the territories of the Member States and are often regulated in a fragmented manner without being coordinated well with each other. Current EQSs, therefore, often do not take into account the environment as a whole.⁵⁷

A second example concerns to what extent derogating from these objectives should be made possible. Current legal frameworks often include a certain room for derogation.⁵⁸ This could allow for a No Net Loss (NNL) approach or a per balance system,⁵⁹ and can allow Member States to avoid an economic lockdown when there is no EUS left.⁶⁰ In theory, these possibilities to derogate could be used in accordance with active adaptive management; that is, to experiment and to learn. But to what extent do current legal frameworks allow for such flexibility, and to what extent should additional legal guarantees be implemented to reduce the risk of not achieving environmental objectives within the time frame?⁶¹

The last example addressed here is what happens when a programmatic approach fails. This question is particularly relevant in the Netherlands at the moment, as the Administrative Jurisdiction Division of the Council of State concluded that the PAN was unlawful in light of Article 6 of the Habitat Directive.⁶² The decision illustrates how EU legal frameworks can provide for more legal guarantees to achieve environmental objectives than some Member

⁵⁶ K.J. de Graaf, F.M. Platjouw and H.D. Tolsma, 'The future Dutch Environment and Planning Act in light of the ecosystem approach' (2018) 29(Part B) *Ecosystem Services* 306–314.

⁵⁷ See in this regard also: F.M. Platjouw, 'Environmental Law and the Ecosystem Approach: Maintaining Ecological Integrity Through Consistency in Law', Routledge: Earthscan, London 2016; R. Giljam, *Towards Ecological Governance in EU Energy Law. With a Focus on Biomass Regulation and the Use of 'Best Available Techniques'*, PhD University of Groningen 2019.

⁵⁸ See on this e.g. M.M. Bogaart, *Flexible directives: towards a better environment? An analysis of the balance between flexibility for Member States and harmonisation regarding the effective protection of European Union's waters and air*, PhD University of Amsterdam 2017.

⁵⁹ M.N. Boeve and G.M. van den Broek, 'The Programmatic Approach; a Flexible and Complex Tool to Achieve Environmental Quality Standards' (2012) 8(3) *Utrecht Law Review* 78; L. Squintani and H.F.M.W. van Rijswijk, 'Improving Legal Certainty and Adaptability in the Programmatic Approach' (2016) 28 *Journal of Environmental Law* 443, 445.

⁶⁰ See e.g. E.T. Schutte-Postma, 'Luchtkwaliteit en EU; Europese achtergronden van het Besluit luchtkwaliteit' in S.T. Ramnewash-Oemrawsigh (ed.), *Regeling inzake luchtkwaliteit; Nederland op slot?*, Vereniging voor Milieurecht, BJu 2006/1.

⁶¹ Significant efforts have already been made to analyse these aspects in EU environmental Directives, see e.g. S. van Holten and H.F.M.W. van Rijswijk, 'The consequences of a governance approach in European Environmental directives for flexibility, effectiveness and legitimacy' in M. Peeters and R. Uylenburg, *EU Environmental Legislation. Legal Perspectives on Regulatory Strategies*, Edward Elgar, Cheltenham 2014.

⁶² Administrative Jurisdiction Division of the Council of State (Afdeling bestuursrechtspraak van de Raad van State (ABRVS)) 29 May 2019, ECLI:NL:RVS:2019:1603 and ECLI:NL:RVS:2019:1604.

States are willing to require. The aftermath of this decision is still ongoing. Questions include to what extent permits that have been granted under this programmatic approach should be revoked in order to still achieve the environmental objectives, and under what circumstances new permits could be granted.⁶³

3.3. DESIGNING PLANS AND PROGRAMMES

3.3.1. *Typology of Plans and Programmes*

Plans and programmes have been used for decades, both as a requirement under EU directives as well as by the Member States themselves to achieve environmental objectives.⁶⁴ They can be defined as ‘a package of policy intentions and measures that serve to achieve and retain environmental values and goals in the physical environment.’⁶⁵ They are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land-use planning.⁶⁶

Squintani and Van Rijswick distinguish three types of plans and programmes required under EU environmental legislation.⁶⁷ The first type includes plans and programmes that are required to obtain information about Member States’ compliance with EU environmental goals. In the second place, there are plans and programmes used as a tool to achieve EU environmental goals by inducing Member States to set up the groundwork for environmental policy. For the third type, plans and programmes are the only instruments required to achieve these goals. These authors only regard the latter two types as plans or programmes with a programmatic approach. The reason for this seems to be that these plans and programmes directly influence the available EUS in a particular component of the environment.

⁶³ See e.g. R. Kegge and A. Drahmman, ‘The Programmatic Approach: Finding the Right Balance between the Precautionary Principle and the Right to Conduct a Business’, (2020) 17(1) *Journal for European Environmental & Planning Law* 76–98.

⁶⁴ See e.g. A.A. Freriks and H.F.M.W. van Rijswick, ‘Programmatische aanpak stikstof en programmatische aanpak water: van tweeën een?’ (2015) 9 *Tijdschrift voor Agrarisch Recht* 399.

⁶⁵ This definition is used by the Dutch legislator in the future Environment and Planning Act. For an EU definition see article 2 of Directive 2001/42/EC of the European Parliament and of the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (SEA Directive).

⁶⁶ See article 3 of the SEA Directive.

⁶⁷ L. Squintani and H.F.M.W. van Rijswick, ‘Improving Legal Certainty and Adaptability in the Programmatic Approach’ (2016) 28 *Journal of Environmental Law* 443, 444.

The difference between the two latter types of programmatic approaches is whether or not they have a delinking effect. A delinking effect in this regard means that the connection between the EQS and the authorisation of a specific project affecting this standard is missing, and that the plan or programme is used by the public authority as the sole reference when assessing whether a request for a permit is eligible to be granted. When plans and programmes are just one of the instruments to achieve EU environmental goals, they have a linkage and therefore have no delinking effect; whereas if the plan or programme is the *only* instrument to achieve these goals, such a linkage between the EQSs and allowing new activities to take place is missing, thus having a delinking effect.⁶⁸

The distinction can be regarded as a sliding scale, as it depends on the specific legal regime to what extent public authorities have to take into account the trade-offs and other considerations made in the plan and programmes when granting or rejecting permits.

3.3.2. *Examples of Legal Implications and Challenges*

Designing the legal frameworks to allow for plans and programmes that support the transition to sustainability is not an easy task. It includes coming up with fair and just mechanisms to (re-)distribute environmental utilisation space, building in legal guarantees which ensure that measures being put into the plan or programme are being realised, and revoking permits for detrimental activities when necessary, with or without compensation.⁶⁹

Another point of interest is how norms regarding transparency, participation and legal protection should be used in the programmatic approach. In fact, multiple analyses have been conducted to align the programmatic approach with the norms from the Aarhus Convention and the EU legal framework on, for instance, the principle of effective legal protection.⁷⁰ Although effective participation of the public and stakeholders is needed for the programmatic approach to function properly, the question remains what these formal elements should entail to be effective, as it will probably be less effective when long procedures impair the functioning of the plans and programmes. Decision-making procedures should be streamlined to allow the plan and/or programme to function properly, but should also allow the public and

⁶⁸ Ibid. *idem*. 445.

⁶⁹ See e.g. R. Kegge and A. Drahmman, 'The Programmatic Approach: Finding the Right Balance between the Precautionary Principle and the Right to Conduct a Business' (2020) 17(1) *Journal for European Environmental & Planning Law* 76–98.

⁷⁰ See e.g. L. Squintani and E.J.H. Plambeek, 'Judicial Protection against Plans and Programmes Affecting the Environment: A Backdoor Solution to Get an Answer from Luxembourg' (2016) 13(3/4) *Journal for European Environmental Law & Planning Law* 294–324.

stakeholders to stand up for their rights and influence the contents of a plan or programme.⁷¹

3.4. MONITORING, EVALUATING AND ADAPTIVE CAPACITY

3.4.1. *Monitoring for Effectiveness*

Obligations to monitor, evaluate and, when necessary to adapt plans and programmes can be found throughout EU environmental directives.⁷² For example, both the Dutch PAN and NAQPC provide for annual monitoring obligations with possibilities to add extra measures or limit the available EUS when interim results show that the environmental objectives are not reached within the set time frame.⁷³ It can even be required to revoke given authorisations when the evaluation concludes that environmental objectives will not be achieved with the added measures or when the environmental utilisation space is diminished.⁷⁴

3.4.2. *Examples of Legal Implications and Challenges*

Just like in the United States, where adaptive management approaches have been used for decades, attempts to integrate adaptive management strategies are often attempts to fit adaptive management within existing legal mandates and protocols.⁷⁵ Benson and Schultz state in this regard that ‘adaptive management is being thrown like a blanket on top of existing authorizations and requirements, with little attention to how practitioners balance this new mandate in relation to other legal and institutional requirements.’⁷⁶

⁷¹ See for suggestions to reconcile these elements: L. Squintani and H.F.M.W. van Rijswijk, ‘Improving Legal Certainty and Adaptability in the Programmatic Approach’ (2016) 28 *Journal of Environmental Law* 443, §4.

⁷² See on this e.g. B.A. Beijen, H.F.M.W. van Rijswijk and H.T. Anker, ‘The Importance of Monitoring for the Effectiveness of Environmental Directives, A Comparison of Monitoring Obligations in European Environmental Directives’ (2014) 10(2) *Utrecht Law Review* 126–135.

⁷³ Administrative Jurisdiction Division of the Council of State (Afdeling bestuursrechtspraak van de Raad van State (ABRvS)) 17 May 2017, ECLI:NL:RVS:2017:1259, §§6.6 and 6.11.

⁷⁴ See also: R. Kegge and A. Drahmman, ‘The Programmatic Approach: Finding the Right Balance between the Precautionary Principle and the Right to Conduct a Business’ (2020) 17(1) *Journal for European Environmental & Planning Law* 76–98, §3.

⁷⁵ M.H. Benson and C. Schultz, ‘Adaptive Management and Law’ in C.R. Allen and A.S. Garmestani (eds.), *Adaptive Management of Social-Ecological Systems*, Springer, Dordrecht 2015, idem. 41.

⁷⁶ Ibid.

Nevertheless, implementing an adaptive approach in a legal system based on legal values such as legal certainty, finality and stationarity is challenging.⁷⁷ Adapting means moving away from front-ended decision-making procedures and embracing the dynamics of ecosystems, but is simultaneously at odds with the need for finality and legal certainty of stakeholders.⁷⁸ Also on this point, further research is required in order to strike an appropriate balance between the opposed interests.⁷⁹

4. CONCLUSION AND DISCUSSION

This chapter explored some of the main legal implications and challenges on a conceptual level that arise when pursuing sustainability with the programmatic approach. In this regard, the words of Advocate General Kokott in her conclusion on the Dutch Programmatic Approach on Nitrogen say it all: '(...) whilst a programmatic integrated planning approach is to be welcomed, there is still room for improvement in its practical implementation.'⁸⁰

Current programmatic approaches do not necessarily meet the criteria that are needed to be ecologically sound. However, in light of the above, when sustainable environmental objectives are pursued, the programmatic approach could be deemed a valuable policy instrument. The legal implications and challenges indicated in this chapter mainly revolve around reconciling a holistic and adaptive approach with key legal values, such as legal certainty and finality.⁸¹

A considerable amount of research has already been conducted on the question concerning to what extent current EU and Dutch legal frameworks allow for a programmatic approach. Provided that this approach can support sustainability theories, perhaps an additional question that should be asked is how current legal frameworks should be designed to sufficiently implement these theories with the programmatic approach.

⁷⁷ M.F. Frohlich, C. Jacobson, P. Fidelman and T.F. Smith, 'The relationship between adaptive management of social-ecological systems and law: a systematic review' (2018) 23(2) *Ecology and Society* 23.

⁷⁸ See also: L. Squintani and H.F.M.W. van Rijswijk, 'Improving Legal Certainty and Adaptability in the Programmatic Approach' (2016) 28 *Journal of Environmental Law* 443–470.

⁷⁹ Lessons may be learnt from experiences from the United States in this regard, see e.g. C.R. Allen and A.S. Garmestani (eds.), *Adaptive Management of Social-Ecological Systems* Springer, Dordrecht 2015.

⁸⁰ Conclusion A-G J. Kokott, 25 July 2018 in Joined Cases C-293/17 and C-294/17, ECLI:EU:C:2018:622.

⁸¹ M.F. Frohlich et al., 'The relationship between adaptive management of social-ecological systems and law: a systematic review' (2018) 23(2) *Ecology and Society* 23, under 'Legal barriers to adaptive management'.