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The future Dutch Environment and Planning Act in light of the ecosystem approach



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ABSTRACT

This paper discusses whether the future Dutch Environment and Planning Act has embraced the ecosystem approach as a leading paradigm.

1. Introduction

In the Netherlands the government is working on a legislative project that will fundamentally change the structure of Dutch environmental law: the Environment and Planning Act (hereafter EPA). Although the EPA has already been adopted ([Official Government Gazette, 2016](#), 156), it will not enter into force before all necessary implementing legislation is adopted. One of the main reasons for the fundamental change is the idea that current and future challenges concerning the use and protection of the environment cannot be tackled effectively using the current legal instruments, which are scattered all over a large range of statutory regulations. At the national level there are approximately 4700 provisions spread over 35 Acts, 120 governmental decrees (Orders in Council), and 120 ministerial decrees. The transition towards a sustainable society requires a structural change since current legislation and instruments do not focus sufficiently on sustainable development ([Parliamentary Papers II, 33962, No. 3](#), p. 6).

The EPA will – possibly in 2019 – replace fifteen existing legislative acts concerned with environmental law, including the General Act on Environmental Permitting, the Water Act, the Spatial Planning Act and the Crisis and Recovery Act, and incorporate the area-based components of eight other acts, such as the Environmental Management Act ([Parliamentary Papers II, 33962, No. 186](#)). The key objective of the proposed legislation is sustainable development. The goal of sustainable development is codified in Article 1.3 EPA that aims to emphasize that not only the needs of the current generation but also those of

future generations are important in the application of the Environment and Planning Act.

In current legislation and accompanying explanatory memoranda the ecosystem approach and the concept of ecosystem services is scarcely mentioned. Since these concepts are quite widely adopted and used by other disciplines, there is sufficient reason to integrate them in the field of (environmental) law as well ([Mertens et al., 2012](#), p. 31). In our paper we aim to analyze whether and to what extent the future Dutch EPA supports an ecosystem approach. Will the Netherlands set an example by introducing an ecosystem approach in the EPA? Will the new act hinder the implementation of an ecosystem approach in environmental governance? Has the concept been a topic of debate during preparation of the new legislation? And if not, should that be considered a missed opportunity or does the EPA itself offer sufficient flexibility to implement such an approach? We will answer these questions in an explorative manner by analyzing the EPA, parliamentary papers and literature.

The first part of the paper starts with an explanation for the delay of integrating an ecosystem approach in the field of (environmental) law and then discusses the link between the concepts of the ecosystem approach, ecosystem integrity and ecosystem services. A number of indicators are described to evaluate environmental legislation in the light of an ecosystem approach. The second part of the paper will analyze the EPA by using the assessment framework elaborated in the first part.

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2. The ecosystem approach, ecosystem services and environmental law

At present there is wide agreement on the need to shift from a sectoral approach in environmental governance to a more ecosystem-based governance approach (Kidd et al., 2011); a governance approach that focuses on the ecological boundaries of the ecosystem, with the objective to facilitate both the sustainable use of the ecosystem and the maintenance of ecosystem integrity (Platjouw, 2016, p. 1). An ecosystem approach thus requires a governance approach that encompasses the entire geographical area of the ecosystem (e.g. a forest, lake, or estuarine) as well as an approach that integrates different interests and uses while maintaining the integrity of the ecosystem.

Though necessary, this shift towards more ecosystem-based governance is not easily accomplished. While other scientific disciplines have widely embraced concepts as the ecosystem approach and ecosystem services, environmental law appears not to be ready for this transformation yet. An important explanation for this delay in the field of law is the apparent tension between the requirements of the ecosystem approach and the architecture and design of environmental law (Platjouw, 2016; Woolley, 2014).

2.1. The challenges of environmental law

A first important challenge is the fact that jurisdictional boundaries often cut across habitats and ecological areas, at national as well as trans-national levels (Borg, 2012). The fragmentation of environmental law poses serious challenges to the aim of ecosystem-based governance as parts of ecosystems often are regulated by a set of laws and regulations that regulate the human relationship with the ecosystem in relatively diverse manners. These pieces of legislation that aim to conserve nature (nature conservation legislation), regulate industrial activity such as renewable energy production, mining, agriculture, forestry (sector legislation), and set environmental quality objectives, such as the Dutch Environmental Management Act and the Dutch Water Act, are in addition often implemented by different sectoral authorities. Following the principle of Environmental Policy Integration (EPI), these sectoral authorities usually have developed their own methods and traditions to govern 'their' natural resources without much cross-sectoral cooperation or harmonization (Bugge, 2010, p. 8–12). EPI, as a concept, appeared in the context of sustainable development. In the *United Nations General Assembly, 1887 Brundtland Report*, and subsequently in the *Rio Declaration on Environment and Development, 1992* and in *UNCED, 1992 Agenda 21*, EPI was strongly advocated. In short, the principle refers to the integration of environmental objectives and considerations into sector policy-making and planning (e.g. energy, transport, agriculture, and urban development) and is considered to be a key principle for realizing sustainable development. EPI means moving environmental issues from the periphery to the center of decision-making, whereby environmental issues are reflected in the very design and substance of sectoral policies (European Environment Agency, 2005). Though it may allow for giving a higher priority to environmental issues in relation to traditional sector and economic objectives, it might be rather complicated and difficult to implement the principle in concrete terms at sector level. While many "win-win" opportunities exist for achieving environmental and sector policy objectives together, there will also inevitably be highly complex and controversial trade-offs to be made between the three dimensions of sustainable development (Perrson, 2004). When sectors have developed rather diverse traditions and methods to make these trade-offs, 'holistic' ecosystem approaches are difficult to implement and realize. In case of both fragmented environmental law and governance it will thus be rather difficult to realize a 'holistic' ecosystem-based governance approach.

A second challenge arises through the open and discretionary nature of parts of environmental law and governance. Law often

requires public authorities to weigh and balance different interests and values when deciding on whether to grant licenses. Certain laws explicitly require a comparison of advantages and disadvantages of projects, other laws require the application of environmental principles that implicitly involve the weighing and balancing of interests and values. Many decision-making processes are nowadays resolved on the interpretation of the precautionary principle or some sort of codification of that principle (Peel, 2005). Moreover, environmental law contains an amount of vague and ambiguous concepts, such as 'sustainable' or 'responsible' that (implicitly) provide room and flexibility to public authorities when making decisions. This flexibility can have positive effects for environmental governance and can probably be justified by the need for the adaptive management of our ecosystems (e.g. Biber, 2013; Graig and Ruhl, 2014; Ebbesson, 2010). The secretariat of the Convention on Biological Diversity (*Secretariat of the CBD, 2004*) encouraged adaptive management in the context of the ecosystem approach:

"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. Ecosystem processes are often non-linear, and the outcome of such processes often show time-lags. The result is discontinuities, leading to surprise and uncertainty. Management must be adaptive in order to be able to respond to such uncertainties and contain elements of "learning by doing" or research feedback [...]"

At the core of the ecosystem approach is the recognition of complexity, constant change and lack of knowledge (Karkkainen, 2002). Thus, management of ecosystems and natural resources must be adaptive and allow for experimentation and learning that can then trigger adaptation. Institutions for protection must be capable of adapting, provide mechanisms for constant monitoring and evaluation of progress against benchmarks, and they must be able to cope with surprise because of the inevitable uncertainty involved (Karkkainen, 2002). Wiersema (2008, p. 23) notices that "[w]ith an emphasis on learning, comes also an emphasis on flexibility. For learning to be effective, institutions – whether legal or political or scientific – must be able to adapt to the new knowledge that learning provides. And to be adaptive, institutions must be flexible".

Though this rationale for flexibility and openness in environmental law is understandable, it also entails risks (Adler, 2015). Most importantly, the maintenance of ecosystem integrity may not be ensured. According to Bugge (2010, p.62) "[i]t remains difficult to use this discretion in a manner that will lead to sustainable outcomes, particularly when many diverging interests are involved, and these interests are of various types and strengths; both multiple and conflicting public interests, and several contradictory private interests, and interests at different levels – local, national and international. The interests range from clear and short term economic profit on the one hand, to uncertain, vague, long term effects on ideal, 'soft' and disputed values such as environmental values and future concerns at the other end of the spectrum." Indeed, notwithstanding the possibility to integrate and weigh 'environmental' values, there is no guarantee that these values will actually affect the outcome of a particular decision. Moreover, administrative discretion and flexibility allows public officials to integrate and weigh in their own manner, which may result in an inconsistent approach towards the ecosystem and fragmented governance of different parts of the same ecosystem.

Given these rationales in favor of and against flexibility in environmental law, it appears rather difficult to structure and design environmental law in a way that both reduces its open and discretionary nature as well as it allows for flexibility and adaptive management approaches.

2.2. Ecosystem integrity and ecosystem services

Despite the apparent tension between the requirements of the

ecosystem approach and the architecture and design of environmental law, opportunities to weaken this tension certainly exist. These opportunities mainly arise out of the interlinkages between the concepts of ecosystem integrity and ecosystem services. The overall objective of the ecosystem approach is the maintenance of ecosystem integrity. Ecosystem integrity as a concept encompasses the structure and functions of the ecosystem (Trouwborst, 2009; Manuel-Navarrete et al., 2008). Integrity is related to a system's ability to maintain its organization and to continue its process of self-organization and adaptiveness in the face of human impacts. It also reflects the capability of ecosystems, however defined, to support services, including pure aesthetics, that humans value (De Leo and Levin, 1997, 8). Healthy ecosystems (with a high degree of integrity) thus provide ecosystem services to mankind.

The valuation of ecosystem services may be useful to identify the ecosystem's socio-economic importance to humans, and possible changes in its socio-economic value due to a possible degradation of the ecosystem (TEEB, 2010). The valuation of ecosystem services may also be useful as a tool for a better conservation of ecosystems, for instance in the context of 'payments for ecosystem services' (TEEB, 2011). 'Payments for ecosystem services' can be defined as "voluntary transactions where a well-defined ecosystem service is 'bought' by at least one buyer from at least one provider, if –and only if – the provider secures the provision of the ecosystem service" (TEEB, 2011). The overarching principle of 'payments for ecosystem services' is to ensure that those who benefit from a particular ecosystem service compensate those who provide it, giving them an incentive to continue doing so. Direct beneficiaries, such as water companies, irrigation authorities, aquaculture operations or hydropower companies are often willing to pay to secure the services that underpin their businesses. Payments provided for the sustenance of particular ecosystem services thus requires that these ecosystem services are given a monetary value.

The economic valuation of ecosystem services has the potential of making the weighing and balancing of ecosystem services a more transparent exercise. This will possibly lead to a better, and probably more consistent, integration of ecosystem values into decision-making procedures and provides a tool to ensure the maintenance of ecosystem integrity. Notwithstanding this potential, decision-making authorities need to acknowledge the limitations of this information. As many ecosystem services are produced and enjoyed in the absence of market transactions, their value is often underestimated and even ignored in daily decision making. Moreover, valuation techniques face important challenges especially regarding uncertainty and irreversibility (Ludwig, 2000). These limitations of monetary valuation are particularly important as ecosystems reach critical thresholds and when ecosystem change is irreversible, or reversible only at extreme costs. The TEEB report (2010) stresses that the valuation techniques in general and the stated preference methods specifically are affected by uncertainty stemming from gaps in knowledge about ecosystem dynamics, human preferences and technical issues in the valuation process.

Despite the limitations, demonstrating the approximate contribution of ecosystem services to the economy provides an important opportunity to implement a more ecosystem-based governance approach to our natural environment, whereby the valuation of ecosystem services serves as the practical tool to shed light on the ecosystem's integrity. This natural link between the concepts of ecosystem integrity and ecosystem services also provides important opportunities for a more systematic integration of the ecosystem approach and the ecosystem services concept in environmental law. Rather than focusing on the aim of the maintenance of ecosystem integrity in itself, a governance approach that focuses on the services provided by an ecosystem is a much more practical method to assess both the degree of integrity and any changes related to this. As stated by Rapport et al. (1998, p. 19–20) ecosystem services may be a good indicator of any dysfunction in the ecosystem. They recognize that "[in] many instances, these services are sharply curtailed when ecosystems come under

stress. As a consequence, clean air, clean water, and renewable resources such as a fish and timber can no longer be taken for granted".

As the integration of the concept of ecosystem services in environmental law may play an important role for the implementation of the ecosystem approach in environmental governance, there is a need to develop practical methods to integrate this concept effectively. In an attempt to contribute to this development, the following section describes a number of indicators, which can be used to evaluate existing or future legislation in light of the ecosystem approach.

2.3. The evaluation of environmental legislation

In order to maintain ecosystem integrity and to ensure that ecosystems continue providing ecosystem services to mankind, environmental law plays an important role. Both the substance of environmental law as well as the design of the system of environmental law is important. Firstly, environmental law needs to contain strong rules that protect ecosystem functioning, so that it can continue providing ecosystem services. Secondly, the legal frameworks that apply to a particular ecosystem need to be consistent and coherent; i.e. the legal framework that applies to a particular activity should work as a system, with an overarching objective, and no internally contradictory rules or principles. Thirdly, the application of environmental law should be predictable; in line with the rule of law. This implies that environmental principles are being applied in a transparent and predictable manner.

As a consequence of the (jurisdictional) fragmentation of environmental law, various laws and regulations often apply to a particular activity or a certain ecological area at the same time. This involves that environmental law needs to be evaluated at two levels: 1) the individual pieces of legislation and 2) the particular legal frameworks and the relationships between the respective laws and regulations. As this paper aims to evaluate the future Dutch Environment and Planning Act, this section will only provide and describe the indicators relevant for the evaluation of single pieces of legislation. The extent to which a single piece of legislation supports the ecosystem approach may be analyzed through the following questions:

a) What is the jurisdictional scope of the act?

Ideally, the jurisdictional scope of the applicable acts should match with the geographical boundaries of the ecosystem it aims to manage. Many types of ecosystems, such as freshwater ecosystems, marine ecosystems, or mountain ecosystems however often transcend national jurisdictional boundaries. Marine ecosystems are usually shared by a number of states; freshwater ecosystems may be located in cross-border areas; and also large mountain ecosystems often do not coincide with jurisdictional boundaries. While it would be unrealistic to expect that regulatory acts cover the entire geographical area of such larger ecosystems, it is desirable to aim at the largest geographical overlap as possible. National legislation should thus cover the largest possible area of the ecosystem. As an illustration, with regard to marine ecosystems, it is thus undesirable to limit the jurisdictional scope of certain legal acts to the territorial zone only.

A different dimension related to the jurisdictional scope of the act concerns the extent to which impacts on the ecosystems need to be assessed. Though the jurisdictional scope of certain acts may be restricted to a particular zone only, often also the impacts on nature or ecosystems of particular activities need to be assessed outside of these boundaries. For example, in the context of Appropriate Assessments, to be carried out pursuant to Article 6 of the Habitats Directive, possible impacts on Natura 2000 areas need to be assessed, even those located outside of jurisdictional boundaries of the area itself. This aspect is incorporated in the nature conservation legislation of all EU Member States that have implemented the Habitats Directive into national law.

b) What are the environmental objectives of the act?

Many laws and regulations contain provisions stating the overall objectives of the act. Certain acts specifically aim at the conservation of nature; many other acts may mention a number of objectives. It needs to be assessed to what extent these objectives focus on the maintenance of ecosystem structure, functioning and/or productivity, and the capacity of ecosystems to provide ecosystem services. When acts aim at a number of objectives, it is necessary to assess their internal consistency and to ensure that these objectives are non-contradictory.

c) Does the act require a focus on cumulative and long-term impacts on ecosystems in addition to a focus on single species?

As being an example of complex adaptive systems, ecosystems are composed of very large numbers of diverse, interacting parts. This interaction brings forth *novel* patterns. Particularly this feature is an important reason behind the argument that an ecosystem needs to be governed holistically rather than by focusing on the individual components; the variables involved are numerous and interactions are complex, creating novel patterns at a systems level. This aspect also needs to be reflected in legislation; in addition to focusing on the protection of single species and the possible effects of human activities on single species, there is also a need to focus on the system as a whole. There is thus a need to assess the cumulative impacts on ecosystems, taking into account also the pressures that are being (and will be) placed on the ecosystems by other current, past and future human activities.

d) To what extent does the act require the weighing and balancing of different interests and values when making decisions i.e. what is the degree of administrative discretion?

As described above, environmental law may contain a degree of administrative discretion for public authorities to weigh and balance diverse interests and values when making decisions. This administrative discretion or flexibility may affect the environmental objectives of the act, since the aims of for instance the maintenance of ecosystem structure, functioning and productivity then becomes subject to a weighing and balancing assessment. The trade-offs that need to be made between different competitive objectives may adversely affect the maintenance of ecosystem integrity and may affect the ecosystem's capability to continue providing ecosystem services. For that reason, the environmental objectives identified under question b) always need to be evaluated in conjunction with the degree of administrative discretion available to deviate from these objectives.

e) Does the act prescribe specific weighing and balancing methods? For example, cost-benefit analyses which would require the economic valuation of ecosystem services?

Different public authorities often have developed their own traditions and methodologies for the integration of environmental considerations in decision-making processes and the weighing and balancing of diverse interests. While these weighing and balancing assessments may be rather implicit and non-transparent, one method for the integration of ecosystem services in environmental law and governance is through the carrying out of cost-benefit analyses where the values of ecosystem services are being monetized and compared with the values of competing interests. Ecosystem services valuation thus provides a practical tool to enable the appropriate balancing of the conservation of the structure and functioning of ecosystems with the need for sustainable use of ecosystem services for human purposes. Acts that require the carrying out of cost-benefit analyses facilitate the proper integration of ecosystem services' values in the decision-making processes. Though there are limitations inherent in these valuation techniques as

mentioned above, they also provide an important opportunity to reduce the apparent tensions between the architecture of environmental law and the requirements of the ecosystem approach.

Though the evaluation framework described above applies to the assessment of single pieces of environmental legislation, it needs to be mentioned that as environmental law and governance is highly fragmented, ecosystems are rarely regulated by one single legislative act. Often various types of laws and regulations apply to certain activities simultaneously and the ecosystem is affected by the application of a wide number of laws and regulations. For that reason, the relationships between these pieces of legislation are also very important and often decisive in light of the aim to maintain ecosystem integrity. A certain degree of consistency and coherence in these legal frameworks is necessary to ensure that the acts do promote and work towards the overall objective of the maintenance of ecosystem integrity (Platjouw, 2016). Before such a thorough assessment of consistency and coherence of legal frameworks can be carried out though, an important first step however is to evaluate the single laws and regulations in terms of incorporating an ecosystem approach. The following section assesses to what extent the future Dutch Environment and Planning Act supports an ecosystem approach.

3. Evaluating the future Dutch Environment and Planning Act

The EPA will fundamentally alter the system of environmental law in the Netherlands. This section describes the main characteristics of this piece of legislation and assesses to what extent the future EPA supports an ecosystem approach.

3.1. Introduction

The EPA replaces fifteen sectoral environmental pieces of legislation in the field of environmental law, such as the General Act on Environmental Permitting, Spatial Planning Act, the Water Act, the Environmental Management Act, the Crisis and Recovery Act and the Housing Act. Important to note is that parallel to the legislative project of the EPA a reform of the nature conservation legislation takes place. Most likely the new Nature Conservation Act will enter into force on 1 January 2017 (Parliamentary Papers II, 33348, No. 176). The idea is that the new nature conservation legislation will merge into the EPA at the moment the EPA will enter into force, possibly in 2019. Therefore, both legislative projects are coordinated in such a way that the Nature Conservation Act uses the same concepts, instruments and procedures as the EPA (Parliamentary Papers II, 33348, No. 5, p. 25).

The EPA is more than just a collection of sectoral legislation in one single act. The goal is to provide both industry and government with a new system that allows for an active approach in order to continuously strive towards good quality of the physical environment instead of focusing solely on preservation and protection. A new design of the internal structure of environmental legislation is necessary to achieve this paradigm shift (Parliamentary Papers II, 33962, No. 3, p. 18–19). The EPA provides administrative bodies with instruments to achieve good quality of the physical environment. The question of which instruments are needed has been answered by looking at the so-called policy cycle which can be derived from EU law, specifically in the field of environmental law and water law. This cycle is geared towards actively achieving goals by determining the baseline situation, determining the objectives, comparing the baseline situation with the objectives and in case of discrepancy take binding measures, make sure of proper implementation while monitoring progress and adjusting the cycle in light of the findings (Parliamentary Papers II, 33962, No. 3, p. 21–24). This idea of a policy cycle was borrowed in order to determine which instruments administrative bodies need to have at their disposal in the different stages of the cycle.

In the explanatory memorandum to the EPA the government

presents six instruments that are key to the act: Environmental Planning Strategies, Plans and Programmes, Integrated Environmental Permits, Project decisions and General Binding Rules at national level (*Parliamentary Papers II, 33962, No. 3*, p. 51–54). An important aspect of the EPA is that the content mainly deals with introducing general provisions regarding the legal instruments which can or shall be used by the competent authorities and includes procedures for implementing those instruments. Therefore, the EPA should be classified as a framework act. Many of the current substantive environmental standards that are included in legislative acts will be delegated to implementing legislation such as governmental decrees. To be more specific: standards will be clustered and streamlined in four governmental decrees instead of the current 120.

To what extent does the future EPA support, hinder or stimulate an ecosystem approach? The legislator did not explicitly incorporate an ecosystem approach in the EPA. For example, the text of the EPA does not mention the terms ‘ecosystem approach’ or ‘ecosystem services’. In the explanatory memorandum of the EPA the word ‘ecosystem service’ only pops up twice. The concepts have not been a topic of debate in parliament nor have they been discussed by legal scholars interested in the future system of environmental law.

Given the above, one might think at first glance that in the structure of the EPA the Dutch legislator did not embrace an ecosystem approach. To evaluate this single piece of legislation, we will however take a closer look by discussing the indicators described in [Section 2.3](#) in an explorative manner. As for the question whether the EPA prescribes a specific weighing and balancing method such as a cost-benefit analysis which would require the economic valuation of ecosystem services (indicator e), we will limit our analysis to the following finding. The EPA prescribes no specific method for weighing and balancing and does therefore neither stimulate nor hinder any such method. In [Section 3.2](#) we will focus on indicators a, b and c. In the [Section 3.3](#) (environmental plan), 3.4 (programmatic approach), 3.5 (integrated environmental permitting) and 3.6 (experimental provision to deviate) we will focus on the most relevant instruments of the EPA and analyze them predominantly in light of indicator d (the degree of administrative discretion).

3.2. Objectives, scope and principles of the EPA

In this section we analyze the objectives, scope and principles of the EPA, specifically in light of indicators a (jurisdictional scope), b (environmental objectives of the act) and c (the extent to which the act focuses on cumulative and long-term impacts in addition to a focus on a single species).

Before discussing the EPA, it needs to be mentioned that an explicit reference to the ecosystem approach in Dutch environmental law does not exist. The Dutch constitution does however formulate the right to environmental protection in Article 21 as a duty for the legislator to enact laws that provide for sufficient protection of the natural environment and enable citizens to take responsibility for the environment. Often this fundamental right is considered to have less legal meaning than other fundamental rights that are formulated as a right for citizens. Although Article 21 of the Dutch constitution provides the legislator with a large amount of discretion it is clear that the constitution does not refer to sustainable development or the need to protect ecosystems. Furthermore, Dutch environmental law has not codified environmental principles explicitly. The argument against codification of environmental principles is that it would have little added value since they are codified by the legislation of the European Union, are acknowledged in international environmental law and will therefore have legal effect in the Dutch legal order.

Interestingly, the enactment of the EPA has however changed this situation and environmental principles are now explicitly mentioned in the EPA in relation to one specific instrument. This specific instrument is the so-called environmental strategy and it allows for an integrative

approach in order to promote sustainability (art. 3.1 EPA). Central government, provinces and municipalities are all obliged to each adopt their own coherent strategic plan relating to the physical environment. This plan should be an integrated strategy consisting of long-term strategic policy choices. In this policy document, developments, trends and required developments in policy areas such as environmental protection, the management of land, water, nature, cultural heritage, traffic and transport are described in a comprehensive manner. The aim is to allow for flexibility and respond systematically to new developments since uncertainties are inherent. The environmental strategy should not focus on one sector or one aspect of the physical environment but is developed by weighing all interests that are relevant for the area-specific policy. In this way the document provides an outline for a sustainable environment.

As a response to the criticism that the EPA is a framework act that provides government with legal tools without properly supplying substantive guidelines for weighing all interests and values involved, the government introduced a new provision. Article 3.3 EPA stipulates that each tier of government is obliged to take into account the precautionary principle, the prevention principle, the principle of rectification at the source and the polluter pays principle when preparing and adopting a strategic vision in the form of an environmental strategy. The EPA however does not provide any other relevant guidance for the content of the environmental strategy. It does for instance neither exclude nor stimulate the possibility to either use cost-benefit analyses or ecosystem services valuation methods in order to weigh different interests in the process of adopting an environmental strategy. Although one could argue that the EPA allows for the ecosystem approach to become an important aspect while making strategic policy choices, such an approach is not stimulated by the legislator explicitly and there is no incentive to use the concept in environmental strategies.

The key objective of the EPA is formulated in Article 1.3. The provision stipulates that competences and instruments in the EPA are awarded with the purpose of sustainable development. Article 1.3 of the EPA runs as follows:

‘With a view to achieving sustainable development, the interrelated societal objectives of the Environment and Planning Act are: (a) to achieve and maintain a safe and healthy physical environment and good environmental quality and (b) to efficiently manage, use and develop the physical environment in fulfilling its societal functions.’

In the explanatory memorandum the concept of sustainable development is described by referring to the Brundtland report as the origin of this leading paradigm in the development of (environmental) law. Subsequently the memorandum states that it is the core of this paradigm that both the natural resilience of these ecosystems and the ability of ecosystems to recover should not be impaired, so that the vitality of the natural capital is preserved and the important economic services of these ecosystems are guaranteed. According to the government this calls for careful use, development and management of ecosystems (*Parliamentary Papers II, 33962, No. 3*, p. 279). ‘Together, these ecosystems provide the so-called “ecosystem services”. This is the case both in rural and in urban areas, though it can involve different types of services. Examples of these ecosystem services are the self-cleaning capacity of surface water, retention and purification of water through the soil, the security provided by coastal vegetation for the hinterland, and the influence of vegetation, forests and seas on climate change. [...] Sustainable management of this natural capital implies that its vitality is maintained. This is directly in the interest of all sorts of social and economic goals’ (*Parliamentary Papers II, 33962, No. 3*, p. 280–283). Therefore, Article 1.3 EPA emphasizes the importance of a coherent approach towards the physical environment instead of a sectoral one. Article 1.3 EPA aims to make clear the objectives of the entire legislative act. Although it refers to sustainable development as the main objective, the two (sub)objectives identified

by the legislator (both use and protection of the environment) could be inherently contradictory in practice and therefore will not be able to truly guide policy or project decision by governmental bodies.

Although the environmental objectives of the act seem insufficiently safeguarded from influences of other objectives (indicator b), the act recognizes sustainable development as a long-term goal and attempts to allow for an integrative and coherent evaluation of the impact of projects that could harm ecosystems and their services (indicator c). The scope of the EPA potentially allows for the required coherent approach as the act will aggregate practically all existing legislation concerned with the physical environment. Integrating existing environmental legislation is however no guarantee for the holistic, integrated assessment required by the ecosystem approach. The EPA introduces several instruments that allow for such an assessment and some that do not. However, even if an integrated assessment is not hindered by the EPA it remains difficult to weigh and value unequal environmental quantities. There is no common denominator for the assessment of chemical, physical, and biological impacts on air, water, land, flora, fauna, human health and cultural assets. Although ecosystem services valuation could be a solution it is scarcely used in practice because of a lack of legal certainty. As has been put forward by others, this is a serious methodological constraint for substantive integration of environmental law (Bohne and Dietze, 2004, p. 199). In light of the criteria set in paragraph 2.3 it is also worth mentioning that the territorial scope of the EPA is restricted only by the territorial limits of the competences of the Dutch administrative authorities and also includes the Exclusive Economic Zone. The jurisdictional scope of many of the instruments introduced by the EPA can be tailor made to correspond with the interests and the ecosystems involved. The jurisdictional scope of (the instruments provided by) the EPA therefore seems not to hinder implementation of the ecosystem approach in practice (indicator a).

3.3. Environmental plan

Municipalities are obliged to establish area-wide environmental planning regulation, containing decentralized general binding rules for the area and each location, region or district within that area relating to the physical environment, as well as the assessment criteria for decentralized permit systems (art. 2.4 EPA). The idea is that integration of all these rules in one area-wide municipal environmental plan enables an integrated approach of the physical environment. Therefore, the environmental plan is considered by the government to be a sufficient instrument to implement an integrated area-orientated environmental policy (Parliamentary Papers II, 33962, No. 3, p. 89).

The environmental plan has a remarkably wide scope. Not only because these plans have to be area-wide, but also because all local environmental rules related to the physical environment must be included, such as regulation in the field of spatial planning, logging concessions, advertisement and listed buildings care. Furthermore, the environmental plan has to contain a balanced allocation of functions to locations (art. 4.2 EPA). This 'balanced allocation of functions to locations' implies that the local public authority has to weigh and balance all relevant interests in order to justify the decision to allocate a function to a location and adopt a set of rules. In this decision-making process the goals set out in art. 1.3 EPA have to be taken into account (Parliamentary Papers II, 33962, No. 12, p. 196–170). An environmental impact assessment is required in certain situations, for instance if considerable environmental impacts are expected (art. 16.36 EPA). The local public authority has a large discretionary power to adopt rules in the environmental plan with regard to the allocation of functions to location. The motives for implementing rules are not limited to spatial planning but can be found in all aspects that fall within the scope of the broad term 'physical environment', for example protection of cultural heritage (Parliamentary Papers II, 33962, No. 3, p. 463–465). In addition, there are other types of rules that can be

included in the environmental plan, such as rules that provide flexibility and tailor made solutions. Although the environmental plan provides local authorities all kind of possibilities to implement an integrated area-orientated environmental policy, there are some basic limitations. Aspects that are exhaustively regulated at a higher governmental level (State or province) cannot be regulated in the environmental plan by a local government (art. 2.7 EPA).

In light of the ecosystem approach, these environmental plans may be useful in terms of balancing the different uses of the ecosystem while also ensuring the protection of its integrity through the implementation of rules related to environmental standards. A significant challenge is the fragmented institutional architecture consisting of numerous municipalities, regions and national authorities involved. The ecosystem approach would, for example with regard to the governance of the coastal zone, ideally require a single plan or at least close cooperation between the various municipalities (and other authorities) involved. Through the fragmentation of mandates and competences, such an institutional integration is not always successful however. A large number of local plans which each may provide for sustainable development of the area under its jurisdiction, might prove insufficient to maintain the overall integrity of the entire coastal ecosystem. In light of an ecosystem approach a comprehensive planning approach is required, covering the broadest possible area of the ecosystem. It is uncertain whether national or regional authorities will make sufficient use of their discretionary powers to enforce such planning. This aspect is particularly important with regard to indicator (a) and (c).

It also needs to be mentioned that the local public authorities appear to have a considerable degree of discretion to decide on the allocation of functions to locality (indicator d). The EPA does not demand a specific weighing and balancing method and also in the explanatory memorandum a method is not mentioned. Although the ecosystem approach is not expressly stimulated by the legislator, there also seems to be no compelling reason why the ecosystem approach or the concept of ecosystem services could not be used in adopting rules or allocating functions to locations in the environmental plan or in the assessment criteria to grant a permit to deviate from those functions or other rules.

3.4. Programmatic approach

The legal instrument 'environmental programme' under the EPA allows competent authorities to implement a programme that contains specific measures for the development, use, management, protection or maintenance of the physical environment. It may focus on a sector or an area of the environment in order to implement activities or it might set out the required measures to achieve sectoral objectives like environmental values or environmental quality requirements for air, soil or water. Drawing up a programme can be optional to serve specific local objectives relating to the physical environment but could also be mandatory, either because the EPA demands local public authorities to draw up a programme in the event that an environmental value has been or may soon be exceeded or EU law demands it as is the case with action plans on ambient noise, river basin management plans and flood risk management plans.

Environmental quality standards can be very strict in the sense that the standards *must* be attained at a certain point in time, especially when limit values are concerned. The EPA allows for a special programme with a *programmatic approach* which provides specific means of fulfilling environmental quality standards. Such a programme focuses on the so-called environmental utilization space (Opschoor and Weterings, 1994) within a certain geographical area and can serve as a framework for the assessment and permissibility of activities in that area. This concept reflects that at any given point in time, there are limits to the amount of environmental pressure that the Earth's ecosystems can handle without irreversible damage to these systems or to the life support processes that they enable. Lawyers on the other

hand are inclined to think that the environmental utilization space is the space that exists between the actual pressure that human activities apply on earth's ecosystems and the applicable environmental quality standards. The Dutch Government gained considerable experience with the programmatic approach applying such an approach to both air quality and nitrogen deposition (Boeve and Van den Broek, 2012). Even if that means the activity is assessed differently than the normal assessment framework for permit application. The EPA introduces this approach as a generic instrument. The essence is that the public authority will assess the permissibility of the activity in the manner designated in the relevant programme. The objective is to balance the consequences of all activities that are detrimental to attaining the environmental quality standard with all measures taken to ensure the environmental quality standard will be achieved in time. Although deviation from such a standard is not allowed, this shift from a simple project-level assessment of the permissibility of human activities towards a programmatic assessment could allow for more or new economic development when the programme is aimed at creating environmental utilization space in the sense that more activities can be permitted while still achieving the environmental quality objectives.

Relevant here seems that the programmatic approach can easily be used to implement the ecosystem approach in order to achieve environmental objectives in a certain sector or area, as it facilitates the spatial planning of different human activities in the area while at the same time attaining environmental quality standards necessary to maintain the ecosystem's integrity. Though the explanatory memorandum does not mention the ecosystem approach, the explicit reference to the concept of environmental (utilization) space is important. This concept and the legal instrument 'environmental programme' appear highly useful for the protection of the ecosystem. As an important tool to implement an ecosystem approach in practice, planning tools such as the 'environmental programme' play an important role to ensure a sustainable use of the ecosystem while also maintaining its ecological integrity. To what extent competent public authorities are successful in designing these programmes in such a way that they ensure a sustainable development in line with an ecosystem approach remains to be seen however. It appears that competent public authorities have a certain degree of discretion to design these 'environmental programmes'.

3.5. Integrated environmental permit

The EPA provides in Chapter 5 for a single environmental permit system that has been referred to as 'integration with partitions'. This means that the competent public authority evaluates the application for an environmental permit on the basis of an assessment framework that consists of the sum of the individual, separate assessment frameworks for all activities included, such as building, land use, demolition, nature, water etc. From a comparative perspective the scope of included activities is rather broad. The integrated environmental permit is not limited to installations listed in Annex I of the Industrial Emissions Directive, but also includes other aspects such as spatial planning approvals, logging concessions, construction permits and nature conservation permits. For example, if an outdoor café is to be built in a Natura2000 area, the applicant needs permissions for both the 'construction' activity and the 'nature' activity because the activity is likely to have a significant effect on the Natura2000 area. Although the applicant can apply for them with a single application and could receive one permit with permission to carry out both activities, the assessment criteria for both activities have to be considered separately and trade-offs between both environmental aspects is not allowed. Although the degree of discretion to balance interests differs per activity, a public interest that is protected by the introduction of a permitting system for a specific activity, cannot be overruled by another public interest that is protected by the assessment criteria of another activity or by a valuable ecosystem service. If the criteria for approval

cannot be met for one of the activities the permit was applied for, the application for the integrated environmental permit will be rejected. Although the EPA provides for a 'one-stop-shop', applicants are allowed to apply for separate permits for practically all activities. However, it is questionable whether the protection of the environment is guaranteed by allowing applications for separate permits for one project (Uylenburg, 2014, p. 623). One of the advantages of a comprehensive permit application and assessment is that the various impacts of the activities on the physical environment can be assessed simultaneously and in close connection to another. The EPA does recommend, but not require such an assessment.

This model of integrated environmental permitting was introduced in 2010 in the General Act on Environmental Permitting (GAEP) that will merge into the EPA. The characteristics of this model were described in the legislative process that led to adopting GAEP as 'procedural integration with substantive coordination'. In this context, procedural integration refers to the fact that different permit systems are replaced by a single permit system. Substantive coordination means that the separate aspects of a project can be evaluated consistently and as a whole.

Noteworthy is that at the time of the introduction of the integrated environmental permitting model in 2010 the government's intention was to enact a model of environmental permitting with one fully integrated assessment framework in the future (Parliamentary Papers II 2004/05, 29 383, No. 18). This would enable the competent public authority to consider the different public interests involved in a holistic or comprehensive way, not restricted by the constraints of the variety of different assessment frameworks. The assumption is that separate assessment frameworks lead to sub-optimal decisions considering that the environment should be seen and protected as a whole.

A number of legal problems relating to this comprehensive permitting model however, have been identified in literature (Tolsma, 2010). Firstly, it is assumed that an integrated assessment framework will have undesirable consequences in terms of judicial review. The integration of various aspects of environmental law will probably result in a fairly broad formulation of the framework (such as "the interest of protecting the physical living environment") used to assess whether a permit application should be granted. Such a vague, general formulation of the public interest protected by the permitting system will give rise to considerable constraints for the courts when reviewing decisions on permit applications. Secondly, these constraints for judicial review also entail the risk that granting permits will become more arbitrary. Public authorities acquire a larger amount of discretion and this could allow for certain specific interests that have been integrated in the broad assessment framework to receive less attention in the balancing of interests. Thirdly, integrated permitting might adversely affect legal certainty. If public authorities have more discretion when balancing interests, it becomes more difficult to determine in advance what weight will be awarded to which interests, and this is undesirable from a legal protection point of view. Finally, Dutch environmental law is significantly influenced by European environmental law, given that a large proportion of the new legislation in this field follows from implementation of European directives. Therefore, it will be hard to reconcile integrated environmental permitting at national level with a lack of integration at European level. The Habitats Directive, for example, prescribes for projects that are likely to have a significant effect on a Natura2000 area, an assessment framework that focuses primarily on conservation objectives. When the project has negative effects on the area the assessment framework offers little room to take into account considerations relating to private interests of the applicant (Kistenkas, 2016, p. 539). National legislators are bound by the European assessment framework and are not permitted to alter this framework by allowing these private interests to be weighed against the conservation objectives.

As mentioned above, the separate assessment criteria of the various activities that have been integrated procedurally in the GAEP will

remain in the EPA. With a view to legal certainty and efficiency an assessment framework tailored to each specific activity is considered appropriate (Parliamentary Papers II, 33962, No. 3, p. 172). The permitting system in the EPA therefore does not accommodate the holistic and integrated weighing of all involved interests required by the ecosystem approach. The system is therefore also at odds with the idea to use an ecosystem services valuation method in order to decide on permit applications. The government describes the type of integration introduced by the EPA as functional integration (Parliamentary Papers II, 33962, No. 4, p. 45). The separate assessment criteria for all activities incorporated in the single environmental permit are merged in a new coherent functional whole. Although this should provide more leeway for a coherent assessment of various activities, the assessment criteria do not refer to the ecosystem approach.

3.6. Experimental provision to deviate

The provision in the EPA to allow experiments to temporarily deviate from certain environmental standards provides an exception to the one-dimensional weighing and balancing of public interests when permission is needed to carry out a certain activity (see Section 3.5). Article 23.3 EPA allows competent authorities to deviate from listed environmental standards that create obstacles to realize an experimental project. The national government can designate in a governmental decree projects which – considering the interest of sustainable development – aim to achieve and maintain a safe and healthy physical environment and a good environmental quality (art. 23.3(2) EPA). This provision on experimental projects builds upon Article 2.4 of the Crisis and Recovery Act (which came into force in 2010) dealing with innovative projects (Verschuuren, 2010; De Graaf et al., 2013). The scope of the criterion used to designate experimental projects under the EPA is much wider (Tolsma and De Graaf, 2016).

Trade-offs of public interests encounter legal problems, as we mentioned above. Therefore, the application of this provision is surrounded by procedural and substantive safeguards. Article 23.3(3) EPA sums up the requirements that have to be incorporated in the governmental decree: the goal of the experiment, the competent authority responsible for the implementation, the duration of the experiment, and which deviations from environmental standards are allowed after the experiment. Furthermore, it stipulates for which specific area(s) or specific decision(s) deviation is allowed, and states the maximum permissible duration of the deviation – with a maximum of ten years when environmental quality requirements are concerned (*omgevingswaarden*). The governmental decree must also explain how the project will be monitored and evaluated. Additionally, it is worth mentioning that if a project results in an adjustment of a regulation, the minister has the power to delay the deviation while considering these adjustments. Finally, with regard to the governmental decree, the existence of a special procedure (*voorhangprocedure*) ensures the involvement of Parliament.

During the development of the EPA, a small group of scholars raised the idea of codifying a general provision to deviate from environmental standards: “demand[ing] a fair alignment between the desired project and all involved interests” (Borgers and Van der Heijden, 2012). In their opinion this would give a major incentive to the initiator of a project to work on an advantageous combination of interests that is good for both the project and a sustainable environment (Borgers and Van der Heijden, 2012).

The academic world responded with criticism to this generic approach for bending the rules. An important and fundamental remark was made that this kind of provision is not in line with the rule of law in a democratic constitutional state (Backes, 2012; Tolsma, 2012). Initially, the government intended to include this a general provision (Parliamentary Papers II, 33118, No. 3, p. 18). The Advisory Division of the Dutch Council of State emphasized however, that a “carte blanche provision,” which provides local authorities the power to

deviate from environmental standards whenever they want, is not desirable (Parliamentary Papers II, 33118, No. 3, annex 158168, p. 19). Arbitrariness in the balancing of interests by competent authorities will diminish legal certainty for individuals and businesses. Finally, the government reasoned that it was unnecessary to have a general provision that authorizes local authorities to set aside environmental standards and grant permission for projects. The government’s perspective is that flexibility in particular should be built into the legal framework itself. If the rules provide flexibility for deviation in specific situations, there is no need for a general provision in the EPA that would allow deviation from environmental standards (Parliamentary Papers II, 33962, No. 3, p. 267).

This discussion concerning the possible deviation from environmental standards is interesting in light of the ecosystem approach (indicator d). For the actual protection of ecosystems, it is highly important that environmental standards are actually attained. At the same time, there should be room for experimental projects which are beneficial for the environment. The approach chosen in the EPA by allowing for deviation through governmental decrees appears to be an avenue subject to transparency and predictability, and in accordance with the rule of law. The option considered, namely the inclusion of a general provision to deviate, is probably risky especially where such a provision provides for a ‘carte blanche’ for possible deviations. Unless it is clearly described under which conditions and circumstances such deviations are allowed there is a risk that such provisions are used in a manner which jeopardize attaining the overall environmental standards. At the same time, however, it could be argued that this option is to be preferred over the idea to build flexibility in the legal framework itself. For the sake of transparency, legal certainty, and the possibility for judicial review the existence of one general provision for deviation is certainly to be preferred over a larger degree of flexibility built into the legal framework. Often such flexibility may provide for an undesirable number of ‘opportunities’ to deviate from environmental standards, which may be difficult to detect and may therefore scarcely become subject to judicial review.

4. Conclusions

Environmental law plays an important role in maintaining ecosystem integrity and in ensuring that ecosystems continue to provide ecosystem services to mankind. The architecture and design of environmental legislation however, not always facilitates the implementation of an ecosystem approach and ecosystem services. There are two main challenges to overcome. Firstly, fragmentation of environmental law complicates a holistic ecosystem-based governance approach. Secondly, the degree of flexibility apparent in environmental law entails risks. Scientific uncertainty often complicates the process of weighing and balancing different interest and values resulting at times in an unsustainable balance between the human use of the ecosystem and the maintenance of ecosystem integrity. This paper has provided a number of indicators to analyze the extent to which legislation supports the ecosystem approach: the jurisdictional scope of the legislative act, the environmental objectives of the act, and the extent to which the act focuses on cumulative and long-term impacts on ecosystems rather than on single species, and requires the weighing and balancing of different interests and values. A last indicator is whether the act prescribes a specific method for weighing and balancing like a cost-benefit analysis which would require the economic valuation of ecosystem services.

The Netherlands is on the verge of restructuring practically all national environmental legislation by introducing the Environment and Planning Act (EPA). Dutch environmental law as it currently stands is scattered and spread over numerous legislative acts, governmental decrees, and (decentralized) regulations. It is considered fragmented, complex, and insufficiently equipped to effectively strive for sustainable development. With a view to achieving sustainable

development, the interrelated objectives of the EPA are to achieve and maintain a safe and healthy physical environment and good environmental quality and to efficiently manage, use and develop the physical environment in fulfilling its societal functions. Redesigning environmental law in this way begs the question whether the legislator has sufficiently taking into account the benefits of an ecosystem approach and the value of ecosystem services. In this paper we evaluated in an explorative manner the extent to which the EPA embraces or hinders such an approach for some of the most relevant legal instruments the EPA will introduce.

Sustainable development is the primary objective of the EPA and the explanatory memorandum to the EPA shows that the idea of protecting, managing and using ecosystems (services) and guaranteeing the integrity of ecosystems is an important aspect of sustainable development. The EPA also potentially provides for an integrated approach of the physical environment instead of a sectoral, fragmented approach. The EPA however is a framework act that provides instruments to achieve goals but seems to supply little substantive guidance for public authorities on how and when to use those instruments. Environmental principles which could offer public authorities some guidance in that sense can only be found in the provision on the instrument 'environmental strategy'. Public authorities adopting such a policy document shall take into account the precautionary principle, the prevention principle, the principle of rectification at the source and the polluter pays principle. Otherwise the EPA offers public authorities a large amount of discretion when exercising their powers.

Several of the generic instruments introduced by the EPA do not just allow for an integrated approach but also would not hinder the implementation of an ecosystem approach, even when such an approach would require economic valuation methods of ecosystem services. However, the legislative act provides no incentive to move ahead in the direction of an ecosystem approach. This is the case for instruments like the programmatic approach and the environmental plan. Under the right circumstances these instruments could even provide rules that would allow projects to deviate from existing environmental standards. The EPA is therefore a highly flexible act that provides public authorities with legal instruments that could potentially be used to implement an ecosystem approach but does not in any relevant way proscribe such an approach.

The Dutch legislator has opted in light of the requirements for legal certainty and efficiency that the permitting system of the EPA shall have assessment frameworks tailored to each specific activity that is subject to an environmental permit requirement. In our view this means that the permitting system, that will in practice have a relevant and substantial role in protecting ecosystems, is not well equipped for an integrated weighing of all interests involved as is required by the ecosystem approach. It is therefore also at odds with the idea of ecosystem services valuation. With regard to the development of environmental plans and programmes however, there are certainly also possibilities to design these in line with the ecosystem approach. These plans and programmes may ensure a healthy balance between the various human uses and pressures on the ecosystem while also maintaining the overall integrity of that ecosystem.

In sum, we conclude that the new Dutch Environment and Planning Act provides highly flexible instruments to achieve the objective of sustainable development. Many of the instruments could therefore be implemented and used to stimulate an ecosystem approach and that could include a weighing and balancing of different interests and values. Such an implementation could also require analyzing the economic value of ecosystem services. However, there is no incentive or guarantee that the instruments will be used in this manner. There is as much chance that the discretionary competences of the public authorities will be exercised in a way that the outcome is detrimental to the goal of maintaining ecosystem integrity. It seems to come down to the willingness and perhaps the necessity to implement the ecosystem approach. As a framework act the EPA simply provides

instruments to protect, manage, exploit and use the physical environment and remains rather neutral when an ecosystem approach is discussed. In that respect the act itself seems to a large extent neither fish nor fowl.

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