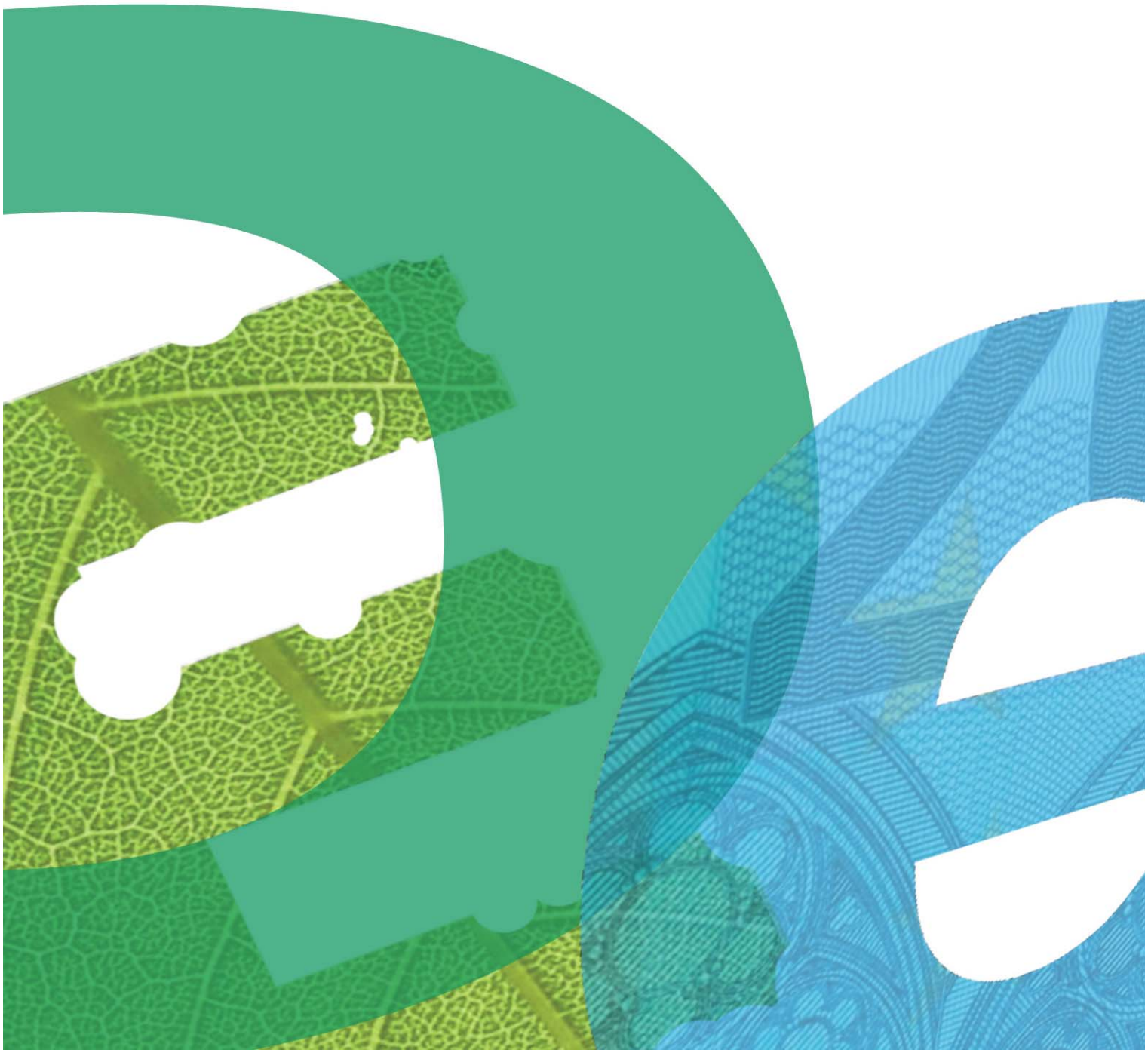
Ecoregional Economic Development

An integrated spatial planning approach



ECOREGIONAL ECONOMIC DEVELOPMENT
AN INTEGRATED SPATIAL PLANNING APPROACH

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1. INTRODUCTION AND SETTING THE STAGE

1.1 Ecoregional Economic Development: introduction

Nationally and internationally, the Dutch Cabinet aims at a sustainable regional development that integrates socio-economic development, sustainable management of natural resources and biodiversity conservation (Netherlands Biodiversity Policy Programme 2008 -2011). Climate change strongly supports this need for integration. Spatial planning, one of the pillars of the Biodiversity Policy Programme, is one of the instruments that proves to be key to sustainable regional development.

The Netherlands Biodiversity Policy Programme (2008 - 2011) describes sustainable eco-regional development as 'a spatial concept designed to integrate economic development and the preservation of biodiversity in areas that are part of the same ecosystem while also guaranteeing the sustainable supply of ecosystem services to other areas. The key challenge is to combine the protection of important and vulnerable global biodiversity with sustainable economic development.'

To emphasize that ecoregional development is not a nature conservation approach but an integrated approach combining economic, ecological and social interests, the term 'Ecoregional Economic Development' is used.

Ecoregional Economic Development (EED) is a spatial concept aimed at integrating economic development and biodiversity conservation within the boundaries of a defined geographical area. The conservation of biodiversity in this area encompasses the sustained delivery of ecosystem goods and services to people and to other areas. Spatial planning is an important component of EED

Spatial planning (e.g. by means of economic and ecological zoning) is an essential element of ecoregional economic development and sets EED apart from integrated land management. EED links to several internationally accepted spatial development approaches as is explained below.

Thematically, EED resides under the Netherlands Working Group Ecological Networks. Ecological networks, i.e. the connectivity between areas of special biodiversity interest, play an important role in the EED concept. Yet, ecological networks should not be conceived as isolated areas, but in contrast, as an essential part of an ecoregion that provides services to present and future generations.
The ultimate aim of EED is to facilitate the implementation of different policy

objectives in an integrated manner. Interministerial cooperation provides opportunities to integrate ecoregional economic development with policies in other areas - such as environment, water and economy. A well-chosen combination of economic development (and poverty reduction), delivery of social services, and conservation of the natural resource base within a geographically defined area, provides the best opportunities for sustained human well-being and development.

How does EED link to other internationally accepted approaches?

An ecoregional approach has its roots in international agricultural research by the Consultative Group on International Agricultural Research (CGIAR) and National Agriculture Research Centre institutes (NARC). In the nineties of the last century a call was made for eco-regional studies that emphasise the use of interdisciplinary approaches to characterize relations between different agro-ecological production systems and limited ecological and socio-economic resources of a region. The ecoregion level is attractive from a land use planning point of view, although farm level is considered the backbone for defining land use options, and higher provincial or state levels define regulatory frameworks.

WWF uses the concept of 'ecoregions' as a unit for conservation planning. In this respect an ecoregion is defined as 'a large area of land or water that contains a geographically distinct assemblage of natural communities that (a) share a large majority of their species and ecological dynamics; (b) share similar environmental conditions, and; (c) interact ecologically in ways that are critical for their long-term persistence.' Within a number of priority ecoregions, WWF pursues ecoregion conservation, a broad-scale approach to develop and implement a comprehensive strategy that conserves the species, habitats, and ecological processes of the ecoregion.

The interpretation of EED in the Biodiversity Policy goes beyond the boundaries of agricultural research and conservation planning. To better delineate the EED perspective, it is positioned against some well-known and internationally accepted spatial development approaches.

Ecosystem Approach: biodiversity and humankind are inseparable entities

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way (CBD, 2000 and 2004). It was endorsed by the Convention on Biological Diversity in 2000 (Decision V/6), with further practical guidance provided in 2004 (Decision VII/11). The ecosystem approach is a principles document, presenting 12 principles and limited additional guidance on implementation of the approach. It is based on profound scientific knowledge and defined in a number of international workshops.
The CBD ecosystem approach very explicitly states that humans, with their cultural diversity, are an integral component of ecosystems. The approach deals with the reliance of humankind on biodiversity. Conserving biodiversity is not primarily in the interest of biodiversity itself, but in the interest of the human race.

The ecosystem approach is participative and requires a long-term perspective based

on a biodiversity-based study area. It follows the logic of visible biophysical and social-economic processes, not artificially drawn administrative boundaries. It requires adaptive management to deal with the dynamic nature of ecosystems and the absence of complete understanding of their functioning. The approach incorporates three important considerations:

(a) Management of the living environment is considered alongside economic and social considerations at the ecosystem level of organisation.
(b) If management of land, water, and living resources in equitable ways is to be sustainable, it must be integrated and work within the natural limits and utilise the natural functioning of ecosystems.
(c) Ecosystem management is a social process. There are many interested communities, which must be involved through the development of efficient and effective structures and processes for decision-making and management.

The ecosystem approach has been recognized by the World Summit on Sustainable Development as an important instrument for enhancing sustainable development and poverty alleviation (CBD, 2004).

EED is closely related to the ecosystem approach in the way that EED is also based on a long term perspective, a biodiversity-based focus area (ecoregion) and an integrated focus on economic, social and ecological considerations at the ecosystem level. However, the spatial planning component sets EED apart from the ecosystem approach.

The U.N. Millennium Ecosystem Assessment

The Millennium Ecosystem Assessment (MA, 2003) provides an elaborate conceptual framework linking biodiversity to human development through the common denominator 'ecosystem services' for the goods and services provided by biodiversity. The MA defines ecosystem services as 'the benefits that people obtain from ecosystems'.

Four categories of ecosystem services are distinguished:

(i) provisioning services (harvestable goods such as water, fish, timber, etc.);
(ii) regulating services (maintaining natural processes such as flood control, water purification, soil fertility, coastal defence, etc.);
(iii) cultural services (source of artistic, aesthetic, spiritual, religious, recreational or scientific enrichment); and
(iv) supporting services necessary for the production of all other ecosystem services (evolutionary processes, soil formation, photosynthesis, nitrogen fixation, decomposing, etc.)

Ecosystem services influence human well-being, and thus represent a value for society. Values can be expressed, positively and negatively, in economic, social and ecological terms. Understanding the factors that cause changes in ecosystems and ecosystem services is essential to the design of interventions that enhance positive and minimize negative impacts. Such factors are called drivers of change and can be natural or human-induced.

The MA is the first world-wide known attempt to demonstrate the role of the living environment for human well-being. It presents convincing information on current state and trends of a number of essential ecosystem services such as supply of timber, food, fresh water, genetic resources, regulation of climate, diseases, pests and natural hazard, etc.

EED builds on the concept of ecosystem services and the fact that ecosystem services represent a value in economic, social and ecological terms. EED explicitly adds the spatial component, thus offering a way to look at ecosystem services from a spatial planning perspective.

The Economics of Ecosystems and Biodiversity (TEEB)

The Economics of Ecosystems and Biodiversity (TEEB) study is a major international initiative to draw attention to the global economic benefits of biodiversity, to highlight the growing costs of biodiversity loss and ecosystem degradation, and to draw together expertise from the fields of science, economics and policy to enable practical actions moving forward. TEEB explicitly addresses the economic value of biodiversity by providing guidance on available tools but also for policy makers at international, regional and local levels in order to foster sustainable development and better conservation of ecosystems and biodiversity. It builds further on the Ecosystem Approach and Millennium Assessment.

By explicitly looking at the economic side of ecoregional development, EED provides a vehicle to apply the tools and lessons from TEEB.

CBD Guidelines on biodiversity in Strategic Environmental Assessment

The Voluntary Guidelines on Biodiversity-inclusive Impact Assessment is the first internationally adopted set of guidelines that integrates the objectives of the Biodiversity Convention and its Ecosystem Approach with the Millennium Ecosystem Assessment into a framework for environmental assessment of regional and sectoral planning (CBD, 2006).

Strategic Environmental Assessment (SEA) is a tool to support decision making on complex plans. It aims at providing relevant information for decision makers on possible environmental, social and economic consequences of development plans; it includes public involvement and formal disclosure of documents to create transparency in decision making. Since 2004, SEA is a legal obligation for plans and programs in EU member countries, and in an increasing number of industrialised and developing countries.

The guidelines have a firm scientific conceptual basis (published as CBD technical paper), and provide procedural guidance on how to deal with biodiversity in SEA. Translating biodiversity into ecosystem services provides a means to link biodiversity to stakeholders. A service, by definition, has stakeholders. Valuation of these services and quantification of expected changes in ecosystem services as a result of new plans provides relevant and understandable language for decision makers. Identification of

ecosystem services furthermore provides a basis for an opportunities and constraints analysis for regional development.

EED aims to look at the environmental, social and economic consequences of development plans. In this respect SEA is an internationally acknowledged and legally embedded tool to implement the principles of an EED approach. The available CBD guidance on SEA is in agreement with EED.

The Layered Approach (Lagenbenadering)

The Layered Approach defines space as a composition of three layers. Each layer is linked to and influences other layers, and is subject to changes on a certain time scale. Good spatial planning has to take into account all layers.

- Layer 1: bio-physical system - the formation of soils and ecosystems take centuries or more. This layer provides opportunities and constraints for development (think of ecosystem services!).
- Layer 2: infrastructure networks (rail, road, navigation channels) - planning of new infrastructure is expensive and takes time. Changes in this layer consequently take 20 to 80 years.
- Layer 3: occupation (neighbourhoods, industrial parks) - changes occur within one generation (10 to 40 years).

The added value of this approach is the way in which time can be included in planning processes. By including time horizons of other layers, costly mistakes in regional planning can be avoided. The approach invites planners to take sustainability into account and to think in terms of alternative solutions to a problem by highlighting potential short and long term effects of new plans.

The approach is a product of the Netherlands' long tradition in spatial planning. It is a conceptual approach with a strong spatial and temporal focus. Even though it has been developed before the ecosystem services concept became internationally accepted, it does provide a strong approach to put ecosystem services in perspective of spatial and development planning. It does not provide any process-oriented guidance (compare the ecosystem approach).

EED in principle has long time horizons needed to address sustainable development. The focus on the opportunities and constraints of the bio-physical system is at the basis of EED. The layered approach may provide a good spatial tool to differentiate between different time horizons of spatial planning components.

Summarising

Ecoregional Economic Development is a regional development concept with a spatial planning component, having its roots in the rich and internationally renown spatial planning tradition of the Netherlands, but with a firm commitment to ecological, social and economic sustainability. In a sense it is an attempt to combine and further develop the Layered Approach with the principles of the ecosystem approach, the concepts of the Millennium Ecosystem Assessment, the lessons from TEEB and the planning procedures from the CBD SEA Guidelines.

EED is a loosely defined concept. It is not the intention of this document nor of the Netherlands Biodiversity Policy Programme to go into any conceptual debate on its exact meaning. Neither is the intention to provide blueprint-like guidance or procedures. Key is the fact that development planning in a concrete (eco)region provides a territorial / ecosystem basis for integrating sector policies (coherence), leading to a more effective sustainable economic development.

Case studies presented in this document will provide EED examples of real-life experiences from around the world. The rather abstract expose provided in this section will come to life with practical examples and lessons.

1.2 Why this project?

Ecoregional economic development is still a relatively unknown approach to most key decision makers in government, in social organizations and in businesses. Therefore, the potential of an EED approach to contribute to some of the key policy areas of the coming years and the opportunities for policy makers to bring an EED approach into practice have remained underexposed.

The Dutch Ministry of Economic affairs, Agriculture and Innovation and the Dutch Ministry of Foreign Affairs have initiated this project to show Dutch decision makers in the Netherlands, the EU and developing countries the benefits of an Ecoregional Economic Development approach.
By showing the benefits of an EED approach, national and international support for this approach will grow, creating a basis for a wider use of an EED approach in practice.

This reader shows:

- What the extra value is of an EED approach from a policy perspective and from an environmental and social economic perspective.
- How an EED approach is already being followed around the world (cases) and what we can learn from these experiences. Each of the cases has a link to one or more of the following policy objectives:
    - Sustainable agriculture and food security
    - Water, disaster reduction en climate adaptation
    - Sustainable international trade chains
    - Protection of biodiversity and ecosystem services

1.3 Resources and Reader

Resources

The information in this document is based on an analysis of five EED case studies (see section 2.2) and interviews with several experts in the area of EED (see annex 1).

Reader

The paper is structured as follows:

Section 2: The added value of an ecoregional economic development approach
In this section, the added value of an EED approach is illustrated by five practical case studies.

Section 3: Ecoregional economic development in practice
In this section lessons from the case studies with regard to practicing an EED approach are presented.

Section 4: The future perspective of EED: expert views
In this section expert views on the future of an ecoregional approach are presented.

Annex 1 provides an overview of experts that contributed to the study.

A comprehensive description of each case study is included in the document 'Ecoregional Economic Development - Cases'.

The Upper Breede River area, Western Cape, South Africa

2. THE ADDED-VALUE OF AN ECOREGIONAL ECONOMIC APPROACH

2.1 Addressing priority policy themes in an integrated way

Using spatial planning in an ecoregional context enables a multifunctional use of land and prevents the optimization of one or more specific functions while failing to consider other (potential) functions.

As space is limited to one earth, multifunctional use of space is vital. The total economic value of ecosystem services is often higher than maximisation of profits of one service. However, in practice not all functions of an area will be, nor can be combined. Neither does every region provide a similar set of services, nor does it represent similar combinations of stakeholders. Only an ecoregional perspective can provide the relevant information for sustainable development planning as it provides a means to find the right balance between different functions, based on the ecosystem services a region provides, the importance of these services for local and regional inhabitants and economy, and taking into account the role of the region in a wider context through ecological networks.

Sustainable agriculture depends, amongst others, on the availability of a wide variety of provisioning and regulating (ecosystem) services like the production of crops, pollination and the availability of sufficient, good quality water. The sustained provision of these services depends on the quality of the ecosystems providing these services. Competing claims on land by different economic sectors and nature (e.g. through legislation) may limit the availability of land for agriculture and may impact on the ecosystem and services provided (e.g. by optimizing one service at the expense of others). Food security is closely linked to a sustainable use of natural resources and a sustainable agriculture.

Dutch companies and research centers have a strong position internationally in the area of agriculture and food security. Being a first mover on EED might further strengthen this position.

Water scarcity, water abundance (floods) and the availability of good quality (drinking) water is a key sustainability and development issue for the coming years. Climate change strongly influences the availability of water, the risks of disasters (like floods and droughts), the growing circumstances for agricultural crops and the geographical distribution of species. The availability of water, natural disasters and climate change

are closely linked to the policy area of food security and the protection of biodiversity, as is highlighted in the recent study by PBL (Voedsel, Biodiversiteit en Klimaatverandering; Mondiale opgaven en nationaal beleid, 2010).

The availability of water depends, amongst others, on the water supply by rivers, water regulation services (like the water storage potential of an area) and water purification services. These services depend on factors like land cover which can be altered through economic activities (e.g. clearing of forests for agricultural purposes). The presence of coastal ecosystems such as mangroves and coral reefs can reduce the damage caused by hurricanes or large waves. Mangroves and coral reefs may suffer from economic activities (like fisheries and tourism impacting on coral reefs) and climate change. Climate change may result in shifts in climate zones, to rising sea levels and may lead to changes in species distribution. In many cases, adaptation to these changes will require land, e.g. to create room for temporary water storage or by creating ecological networks allowing species to migrate.

So far the climate adaptation and mitigation discussion is a separate discussion where adaptation is dominated by the water sector and mitigation by the energy sector. EED provides opportunities to address both aspects of climate change at the same time.

The interrelatedness of priority policy areas such as Food security, Water, Biodiversity and Climate change, requires a shift from a sectoral approach to an integrated policy strategy. Ecoregional economic development offers such an approach.

Important added value of an ecoregional economic approach lies in perspective of addressing priority policy themes in an integrated, regionally embedded manner. The global problems we are presently facing, represented by the priority policy themes climate change, poverty, food security, and the loss of biodiversity, are intricately related. An ecoregional approach is the only means to assess what the consequences of these problems actually mean for people and for development opportunities. Similarly, a solution can only be found on the basis of regional characteristics. Not taking into account the interrelatedness will lead to perverse solutions.

Urgent global problems such as poverty, securing food supply (how to provide food and jobs for a growing population?), biodiversity loss (how to sustain life support systems to keep the earth inhabitable and productive?) and climate change (how to guarantee human well-being in a changing world?) cannot be solved by addressing these issues in a separate manner. In real life these issues all play at the same time, but with varying degree in different regions. A good example is provided by the uncontrolled expansion of industrial palm oil production, serving the increasing demand for biofuel as a climate change mitigation measure, but threatening food security, biodiversity and related ecosystem services on which many rural poor depend. This provides the first argument for an ecoregional approach to development, where the issues are addressed in

conjunction at an appropriate regional scale.
The interrelatedness of priority policy areas such as Food security, Water, Biodiversity and Climate change, requires a shift from a sectoral approach to an integrated policy strategy (PBL, 2010: 'Food, Biodiversity and Climate Change'). A long term approach implies the strengthening of the quality and resilience of the natural system. Ecoregional economic development offers such an approach. However, according to PBL this requires more policy coherence and integration of different policy areas.

The same is true for the policy objective on sustainable trade chains, one of the key policy objectives of the Dutch Ministry of Economic Affairs, Agriculture and Innovation and the Dutch Ministry of Foreign Affairs. The policy on sustainable international trade chains has a strong sector focus which is linked to the role of the Netherlands in the specific trade chains (e.g. trade in soy, palm oil, biomass and commodities like coffee and cocoa). However, to enhance a sustainable production of these products and to actually contribute to the Millenium Development Goals, the focus on impacts should be an integrated one, looking at social, economic and environmental impacts, including competing claims on land and other natural resources in the producing countries and the sustained delivery of ecosystem services. EED provides such an integrated focus.

Sustainable economic development

Existing problems are of course a well know trigger for action. An ecoregional approach creates the opportunity to learn from past mistakes, often created by mono-sectoral interests and blueprint interventions. By not departing from the interests of the sector at stake, but by looking at the development opportunities and constraints of an ecoregion, including the options and motivations of all stakeholders linked to this region, the position of the sector at stake can be positioned within a development framework for the region. The result is a realistic and lasting development.

This way, ecoregional economic development is not just an approach to face global and regional challenges in areas like agriculture, food security, water and climate change, but it also offers new opportunities for a sustainable economic development. Economic development combining economic, ecological and social interests.

2.2 A spatial focus on combining economic, ecological and social interests

Examples of EED approaches can be found around the world. Five examples have been analysed in further detail to illustrate the added value of EED and to assess some of the characteristics of bringing an EED approach into practice. These case studies are:

1. Planning and Environmental Assessment in the Greater Mekong Subregion
2. The Central Kalimatan (Indonesia) Master Plan Process
3. Top-down, bottom-up, or both? Lessons from Western Cape, South Africa

4. Ecoregional economic development in the Lake Naivasha Region, Kenya
5. Trilateral Wadden Sea Cooperation (TWC), the Dutch Wadden Area

A comprehensive description of each case study is included in a separate document.

Upper Breede River area, South Africa

Triggered by an unsustainable future for viticulture and threats to biodiversity and tourism in the area, a bottom-up initiative involving local stakeholders resulted in the identification of spatial planning solution serving both social-economic interests and ecological interests.

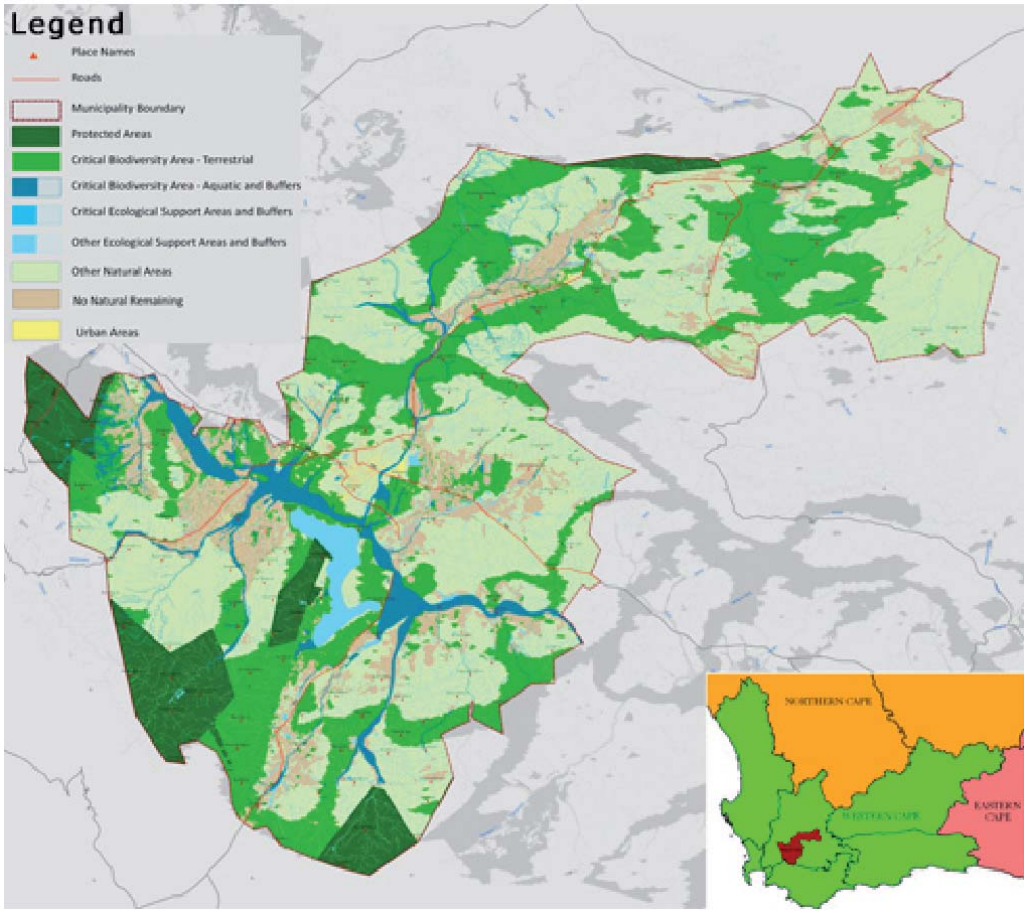
In 2003 the agriculture and biodiversity conservation authorities working with landowners in the Upper Breede area came together in the realization that better collaboration and co-ordination between them, and the preparation of a shared basis for evaluating development, would be beneficial and could provide a platform to influence planning (Spatial Development Frameworks and Integrated Development Planning) and State funding from 'the bottom up'. In 2006 the Upper Breede Collaborative Extension Group (UBCEG) was formed, focusing on areas of high biodiversity value and of high economic value, where there was community buy-in and where the potential existed to deliver social benefits through job creation and skills development. This bottom up initiative resulted in a planning approach enabling the identification of 'critical biodiversity areas' to meet biodiversity conservation targets, and 'critical ecological support areas' underpinning delivery of ecosystem services of societal value. Area-Wide plans were prepared highlighting the priority areas for agricultural production from a local perspective that incorporated biodiversity priorities. These plans are used as the basis for informing decision making on new development in the valley, to direct resources and efforts, and prioritise activities.

The Upper Breede River multistakeholder initiative resulted in an integrated spatial planning approach allowing for a multifunctional use of the land combining economic, social and ecological interests.

The socioeconomic 'engine' of the Upper Breede area is agriculture and, increasingly, nature-based tourism. The restoration of wetlands and river systems and the clearing of alien plants resulted in improved water quality and quantity as well as a decreased threat of uncontrolled wildfires and flooding. These factors all contributed to safeguarding the ecosystem services necessary for agricultural activities in the area. On the ground collaboration between key stakeholders from tourism and viticulture

strengthened synergies between these land uses and a regional identity to be captured and marketed. Downstream users outside the area and future generations will benefit from the improved water management and efforts to restore riparian areas, for example in the light of expected climate change effects. Water supply is a critical factor in the region and climate change is expected to influence water supply. Sustaining and enhancing these ecosystem services is a long term investment to be better able to adapt to climate change.

The identification of priority areas for biodiversity and ecosystem services and for economic development allowed stakeholders to make the right decisions. Fine-scale Biodiversity Plans enabled the identification of 'critical biodiversity areas' to meet biodiversity conservation targets, and 'critical ecological support areas' underpinning delivery of ecosystem services of societal value. Likewise, area-wide plans were prepared highlighting the priority areas for agricultural production from a local perspective that incorporated biodiversity priorities.
Safeguarding biodiversity was also realized by education and awareness-raising of its value and significance. The former attitude of landowners in the area to biodiversity and ecosystems was: 'Nature is a hobby'. Now, people are beginning to see the



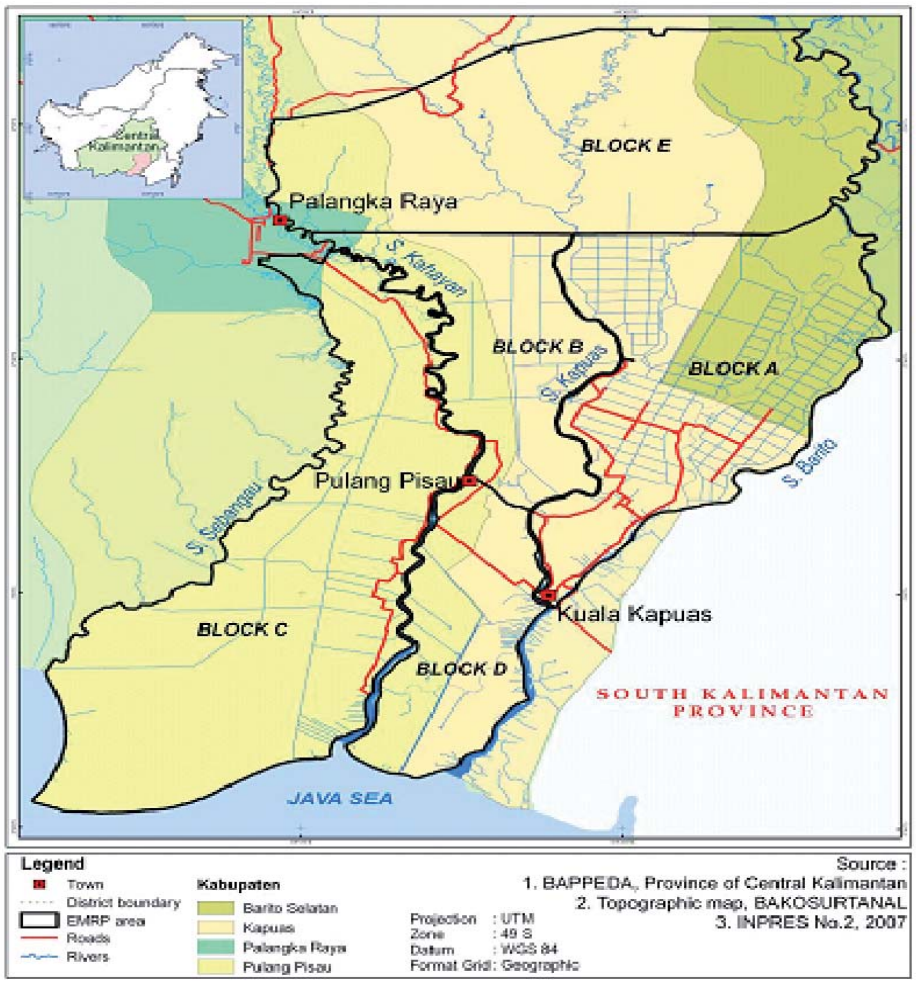
Critical Biodiversity Areas Map: Breede Valley Municipality

economic benefits of conserving nature. Without the initiative, biodiversity of global significance would be lost; degradation of both terrestrial and freshwater ecosystems would continue and there would be little awareness of the value of the natural assets of the region.

Kalimantan, Indonesia

Regional economic planning without an ecosystem services basis, may lead to unsustainable economic development en high economic cost, as shown by the Mega Rice Project in Kalimantan. An ecoregional approach based on characteristics of the ecosystem may lead to the rehabilitation of the degraded ecosystem, to a restoration of services and to guiding principles for sustainable economic development and conservation.

In 1995, the Government of Indonesia started the Central Kalimantan Peatland Development Project 'commonly known as the Mega Rice Project' to convert up to one million hectares of peat and lowland swamp for rice cultivation. In spite of many protests, an area of 1.4 million ha was converted by extensive construction of thousands of kilometers of canals. The drainage of peatlands resulted in serious degradation, deforestation and wildfires. The land proved largely unsuitable for rice cultivation and roughly half of the 15,594 transmigrant families that moved to the area have now left. Local residents have suffered through damage to the area's natural resources and the hydrological impacts of the project. The Master Plan for the Rehabilitation and Revitalisation of the Ex-Mega Rice Project (EMRP) in Central Kalimantan ('Master Plan project' or 'MP project'), carried out between 2007 and 2009, was established to support the implementation of a Presidential Instruction on rehabilitation and revitalisation of the area. The objective of the MP project is to assist the process of rehabilitation of degraded lowland swamps, by updating existing data and knowledge of the area, and using this as a basis to support the government of Indonesia, the working groups, local government and communities in developing a strategy for rehabilitation and revitalisation of the local economy.



Large scale peatland drainage in Kalimantan was destructive to local fisheries, forest productivity and in the end also to the soil productivity for which drainage was introduced. Moreover, drainage of peatland resulted in CO_2 emissions and wild fires and in some areas in flooding of subsided peatland.

The land use master planning process, designed to undo part of the earlier mistakes, is based on restoration and enhancement of ecosystems and their services, to restore productivity and local livelihoods. The macro-zoning first separated clear-cut conservation from development areas, with an intermediate zone in need of an adapted approach based on both conservation and development. The macro-zoning approach was discussed at length (over 1.5 years), at various stages (draft, mid-term and final) at levels varying from (sub-)district (and village) to provincial and national, leading to a high degree of acceptance of the Master Plan at various levels.

During the rehabilitation process several commercially interesting local tree species have been identified for which additional research is being carried out to turn the

produce into marketable products for the world markets. Similarly, the availability of large drainage canals, nowadays permanently waterlogged to restore peatland forests, represents a huge aquaculture potential. Since the Indonesian market for freshwater fish is very strong, aquaculture can partly replace the collapsed fisheries revenues and will contribute to local poverty reduction and improved food supply for the regional market.

The benefits of a rehabilitated peatland will be felt over a wider area, not only because of reduced threat of fires and haze/smoke (with a positive impact on human health and productivity), but also as a source of water in the dry months (available for irrigation, as potable water, and area for fishing). This will reduce the dependency on scarce water resources thereby reducing the vulnerability against climate variations. Carbon credits, accrued under REDD or REDD+, provide extra incentives, as CO_2 emissions can be significantly lowered by hydrological rehabilitation. Emission from drained peatlands is measured to be 45% and forestry 35% from the total of Indonesia's greenhouse gas emissions. However, carbon storage still has to be formally recognized.

Restoration concessions for hundreds of thousands of hectares have already been granted to consortia of large private investors and international environmental NGOs, including Wetlands International with Shell in Brunei and Wetlands International with German investors and Russian authorities (where peat fires threaten public health in Moscow and where peat land restoration is seen as a solution, simultaneously providing carbon credits).

Lake Naivasha, Kenya

A situation of unsustainable economic development can change when the sustained delivery of ecosystem services is taken as a basis for (bottom-up) multi stakeholder action; in this case supported by a Payments for ecosystem services initiative.

Lake Naivasha is a freshwater lake situated in the Great Rift Valley, less than 100 km NW of Nairobi, Kenya. The lake and its surroundings are rich in nature and wildlife. The lake was designated as a Ramsar site in 1995. Due to its richness in natural resources (including freshwater and fertile soils), as well as its proximity to Nairobi, the area is attractive for many economic activities. Consequently, the population has increased dramatically over the past decades. Agriculture, fisheries and tourism are the main sectors providing income and employment. Especially large scale irrigated horticulture has become an important activity in the lake's coastal zone. Small scale (subsistence) farming and animal husbandry are also important agricultural activities. The intensification in the use of land, water and other natural resources

has led to a number of environmental problems: reduced water quality, over abstraction of water, deforestation, soil erosion, overgrazing, overexploitation of fish and wildlife stocks, destruction of natural habitats, and increased competition for land use.

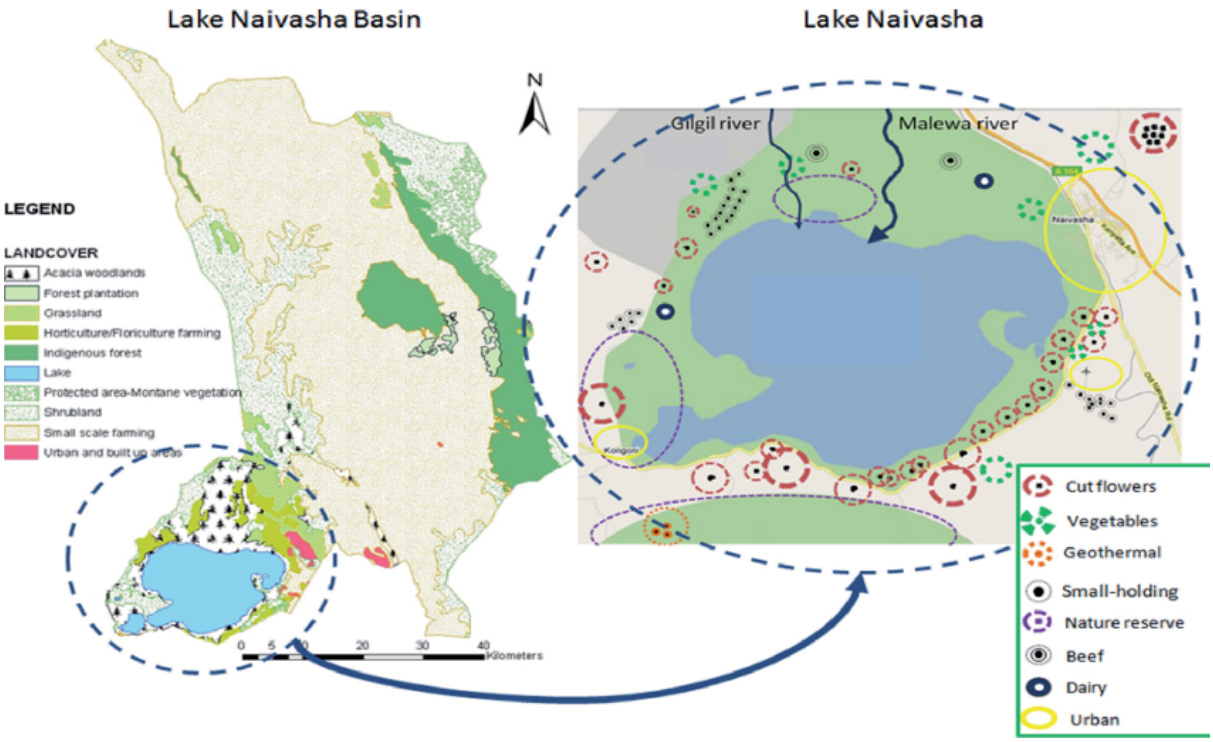
In the area, a number of bottom-up initiatives have been taken to address environmental challenges by adding price tags to valuable natural resources and combining economic development with ecosystem conservation and livelihood improvement for local communities. Examples include the promotion of efficient water use by the Lake Naivasha Riaparian Association (an organization of landowners and users around the lake), the implementation of PES agreements by horticultural companies to take conservation and restoration measures, the development of private wildlife corridors and sanctuaries around the lake and the support of community projects by Certified Emission Reduction Credits (CERs) obtained by Kenya's main electricity generation company. The initiatives show that in an area that is under great pressure from competing land and water users, effective mechanisms can be created to manage resource scarcity and promote biodiversity and economic development simultaneously, providing interesting examples of processes and instruments that can be used in ecoregional economic development. The case further illustrates the importance of bottom up processes and common awareness among stakeholders and the need and opportunities for economic diversification (like jobs in restoring ecosystem services or alternatives for small farmers)

The Lake Naivasha case shows that in an area that is under great pressure from competing land and water users, effective mechanisms can be created to manage esource scarcity and promote biodiversity and economic development simultaneously. The case provides interesting examples of processes and instruments that can be used in ecoregional economic development, including Payments for Ecosystem services.

Flower exports from the Lake Naivasha area nowadays are among Kenya's main sources of foreign earnings (together with tea and tourism). A substantial part of the horticultural produce is exported to the Netherlands, and several Dutch firms have invested in flower farms around the lake. A more sustainable flower production therefore directly contributes to more sustainable trade chains. Since horticulture is also one of the nine 'top sectors' identified by the Ministry of Economic Affairs, Agriculture & Innovation, EED may provide an opportunity to position The Netherlands as a frontrunner. In the Lake Naivasha case growers are thinking of 'branding' and certifying their products on an ecoregional basis. So instead of having a certification process at individual farm level, a regional certificate could provide good marketing opportunities ('Naivasha flowers').

Restoration measures, improved water management and the prevention of overfishing also contribute to the protection of biodiversity and ecosystem services. Private wildlife

sanctuaries and corridors around Lake Naivasha (some of them related to the large flower farms) play an important role in protecting biodiversity and maintaining ecological networks. The conservation of wildlife corridors and migratory routes is one of the flagship projects of the Government of Kenya.



GreaterMekong Subregion (GMS)

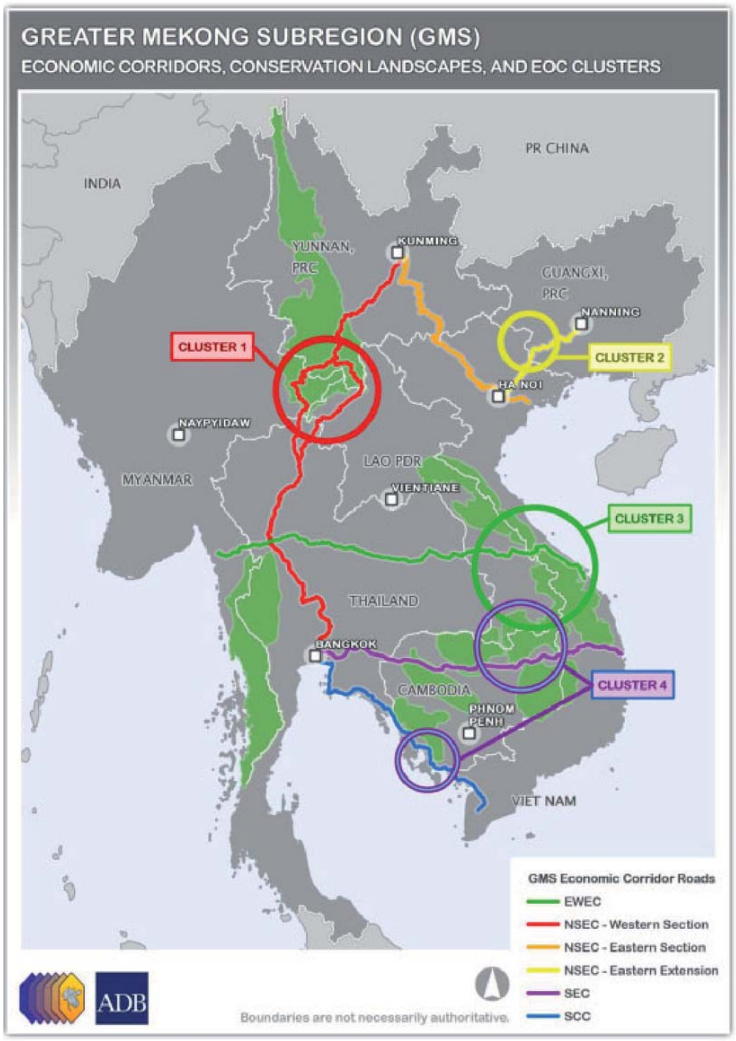
By means of an ecoregional development approach, biodiversity will not be overlooked by economic development. In the long run, both the environment and the economy benefit from such an approach.
In the GMS, Strategic Environmental Assessment and a Biodiversity corridor map proved to be valuable instruments to guide spatial planning on a regional level, benefitting economic development and conservation and sustainable use of biodiversity.
These initiatives constitute first steps to move from sectoral planning towards integrated spatial planning

The Greater Mekong Subregion (GMS) consists of Cambodia, the People's Republic of China (PRC), the Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Vietnam. The total population of the GMS is 420 million. In 1992, with the assistance of the Asian Development Bank (ADB), the GMS countries launched a program of subregional economic cooperation - the GMS Program. With assistance of ·and pressure by the donor community, the GMS Core Environment Program (CEP) combined with the Biodiversity Conservation Corridors Initiative (BCI), known as the CEP-BCI, was officially launched in 2006 by the ADB involving the active participation of the relevant government agencies. By means of this program, sectoral departments take the initiative for sustainability assessment of their policies. This case focuses on the two components of CEP-activities that have concrete linkages with spatial planning and ecoregional economic development:

- Environmental Assessment of Economic Corridors and Sector Strategies, which aims to ensure GMS development strategies and investment plans are environmentally sound, economically efficient and socially equitable.
- Biodiversity Conservation Corridors Initiative, which aims to establish sustainable management and use regimes in the GMS biodiversity conservation corridors.

The Environmental assessment component included Strategic Environmental Assessments (SEA) of key sector strategies such as transport, energy (hydropower), and tourism.

In the GMS region agriculture provides food for a growing population and is the largest employer in the region. The key GMS economic sectors of energy, agriculture, fisheries, tourism, and transport depend to a large extent on the ecosystem services provided by healthy natural systems. However, sub-regional development programs are threatening the resource base for these fundamental economic sectors, including expansion of agriculture itself. The challenge is how to make growth sustainable - by balancing



economic, social and environmental dimensions - and equitable, thus lifting the majority of people in the GMS out of poverty.

The Biodiversity Conservation Corridors Initiative (BCI) aims at preventing ecosystem fragmentation that will result from pressures inherent in the economic development along the GMS economic corridors. Unmitigated fragmentation will threaten local livelihoods and ecosystem services needed for sustainable development in the GMS. The BCI resulted in commonly agreed upon, formalized map with important biodiversity areas which was included in the spatial planning process. By simply superimposing a development plan over the biodiversity corridor map, areas of potential conflict are highlighted and the need to think about potential alternatives or mitigating measures immediately becomes obvious.

The expected results of the BCI are:
- direct poverty reduction;
- maintaining ecosystem integrity and sustenance of environmental services;
- sustainability in the macro-economic context.

The pilot Strategic Environmental Assessments (SEA) showed the potential strength of SEA as a planning support tool, to test new plans against sustainability criteria. Within the countries these pilots led to a strong sensitization of government officials on the value of SEA in a planning process. Examples of the program's impact are:
- Vietnam's Energy Department is carrying out an SEA for its next 5-year hydropower plan.
- Laos, Thailand, China and to a limited extent Myanmar are jointly implementing an SEA for a tourism development plan in the transboundary Golden Triangle region.
- In Cambodia two provinces are carrying out SEA for provincial social-economic development plans.

In the GMS case, the role of integrated planning is still limited to bringing a sustainability perspective into sectoral planning processes. By bringing stakeholder concerns into the planning process and the availability of a biodiversity areas map forces sectoral planners to look into the spatial consequences of their plans, i.e. where to plan certain activities, where not, and where to take corrective measures if necessary. This can be considered to be a first important step towards fully integrated planning.

Wadden Sea, The Netherlands

The coastal tidal flats of the Wadden Sea in the Netherlands have for a long time been a battle ground between developers and conservationists. It has taken the business, NGO and government communities several decades to find out that an ecoregional, collaborative approach in the end better serves both economy and nature conservation.

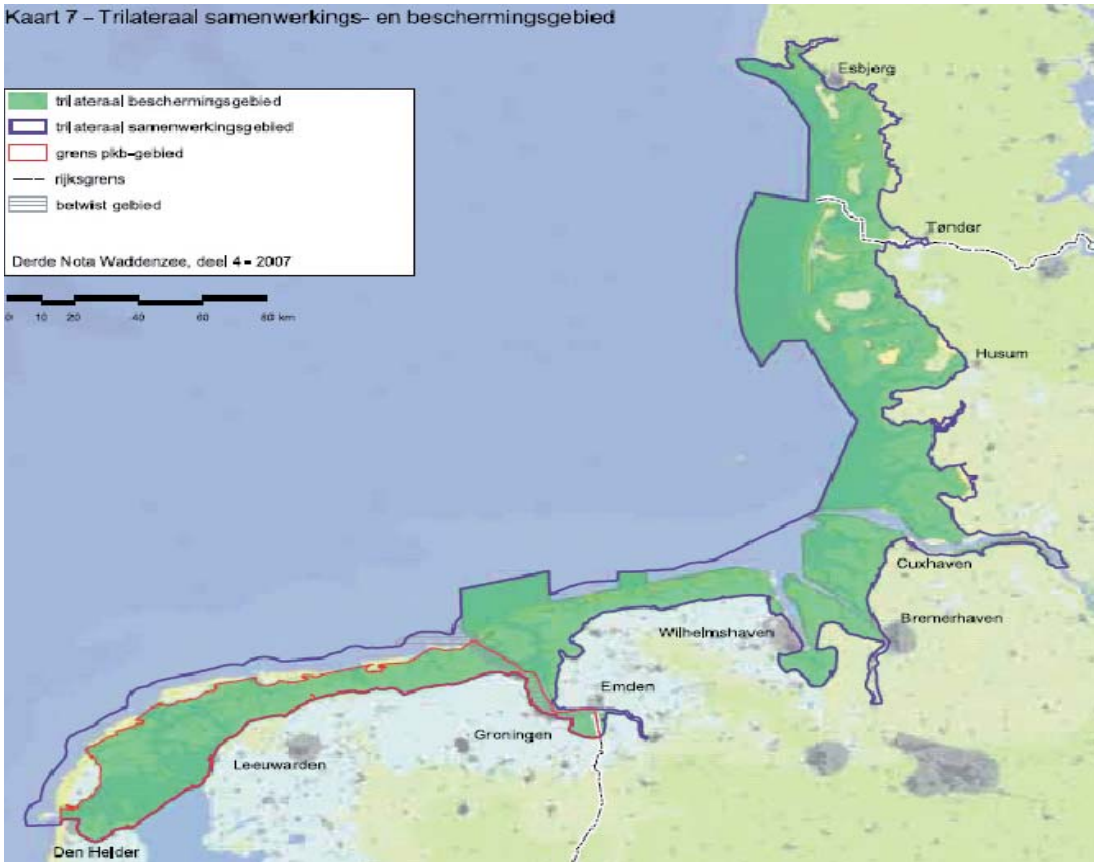
The Wadden Sea is the world's largest tidal barrier island system and Europe's largest wetland area. The Wadden Sea is not only a region of ecological importance, but provides many economic benefits as well. The unique natural values of the area are the basis for local livelihoods based on tourism, recreation and other (economic) activities. The Wadden Sea is also rich in cultural heritage, characterised by a variety of landscapes and sceneries (such as dwelling mounds, dikes, drainage ditches, farms and churches), differing traditions and regional cultures.
The spatial planning for the Wadden area was originally developed from an 'exploitation versus nature conservation' perspective but over time has shifted to an approach that is now aimed at the integration of nature conservation and

human use on the basis of common targets. In other words, a truly integrated approach. The vision of the Trilateral Wadden Sea Cooperation (TWC) between the governments of The Netherlands, Germany and Denmark is a Wadden Sea which is a unique, natural and dynamic ecosystem with characteristic biodiversity, vast open landscapes and rich cultural heritage, enjoyed by all, and delivering benefits in a sustainable way to present and future generations: nature protection may not lead to the long-term decline in socio-economic conditions for the inhabitants of the Wadden area, and the use of nature may not lead to the long-term decline of biological and ecological diversity.

The TWC has resulted in a number of initiatives in the Wadden area, aimed at combining different interests of different stakeholders and different ecosystem services in the area in a sustainable way. In this way, the TWC provides interesting examples of processes and instruments that can be used in ecoregional economic development, including stakeholder organization (like the Wadden Sea Regional College: RCW), stakeholder cooperation (like cooperation in the mussel sector and the Ems delta region), and financing mechanisms (the Wadden Sea Fund). Moreover, the case provides insight in the benefits of an integrated spatial planning approach combining economic, ecological and social interests: macro-economically the area is generally doing well, while at the same time the quality of nature in the Wadden area improved.

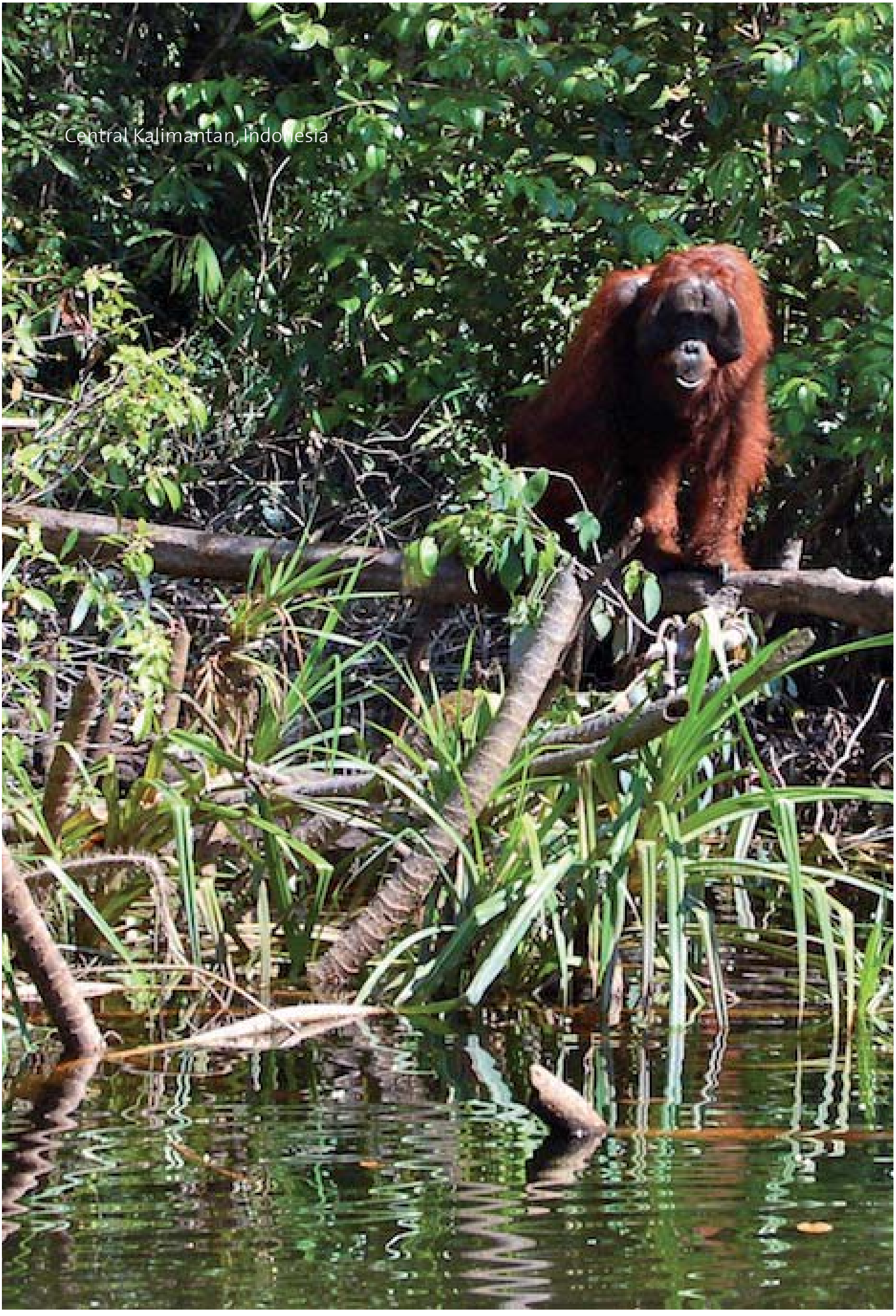
The Wadden Sea area is extremely rich in globally important biodiversity and extremely productive in terms of (shell)fish breeding and production, with an important natural gas reservoir beneath, and an ever increasing tourism and recreation sector. This wide variety of ecosystem services comes with many stakeholders and interests and potential conflicts. However, a collaborative ecoregional approach has paid off. Nowadays gas is exploited under strict conditions based on the precautionary principle, and both tourism and fisheries sectors flourish under commonly agreed upon rules.

Agriculture is an important economic sector in the Wadden area. Agriculture on the Wadden islands may provide for ecological recovery and an increase in the safety of the land against flooding (climate adaptation), as shown by the grazing that takes place in tidal marshes or saline agriculture development. Agricultural development again is dependent on the ecological quality of the landscape. Also through the combination with tourism, agriculture in the region has a strong relation with nature. The relation between ecology and agriculture supports the necessity to integrate ecology and economic development. As agriculture, landscape and tourism are also closely interrelated, an integrated approach may in addition offer opportunities for combining agricultural scale enlargement and the creation of an attractive landscape. Although



agriculture does not play a large role within the integrated approaches for the Wadden area yet, it could become important in the future, for example through implementation of 'Wadden greenhouses' or Common Glassworth.

The 'Deltaprogram Wadden area', part of the national Delta program (in which national and regional governments work together with NGO's), aims to develop an integrated, multifunctional approach to ensure long term water safety (flood protection and a sufficient fresh water supply), anticipating on climate change, from 2014 and beyond. The approach would have to make use of natural processes and would have a positive impact on nature, while creating space for sustainable economic activities. The current project regarding dike reinforcement for coastal security and additional drainage capacity of the 'Afsluitdijk'(the dike that connects two provinces on both sides of the IJsselmeer) is also an integrated process in which both national and regional governments work together and nature organizations are intensively involved. Four visions have been developed on how to realize the reinforcement that is necessary on the account of climate change.


Central Kalimantan, Indonesia

3. ECOREGIONAL ECONOMIC DEVELOPMENT IN PRACTICE

Several lessons can be drawn from the case studies on how an ecoregional economic development approach can be brought into practice. Some of the key lessons are:

All five case examples show the value of a spatial, ecoregional view on conservation and development, where the development constraints and opportunities of a region, based on characteristics of the biophysical environment, have to be taken as a point of departure. Active involvement of stakeholders enables the development of a jointly agreed upon plan.

Scale and scope of planning
Development planning has to be carried out at the scale of the opportunity or problem at stake. Scale is defined by biophysical environment ·and stakeholders interests, not by administrative boundaries. This is also at the basis of the concept of 'ecoregions'.

Where to start?
Start thinking in terms of regional development opportunities and constraints. Consider space (at any scale) as multifunctional; avoid sectoral 'silo' thinking. Use an integrated regional vision as a basis for plans and actions on a sectoral level.

A change towards sustainability can start in many situations; 'zero' starting points do not exist. Recognise the 'trigger' and use this as the starting point. A trigger is often a real or expected resource problem, or conflict of interests, perceived as such by stakeholders involved (in or outside the region). Sometimes it is an opportunity for development.

The case studies also show that there is no need for new approaches, instruments or toolkits. There is need for a broad view, commitment, stakeholder involvement and determination. Linking existing policies to bottom-up initiatives may prove to be a successful strategy.

Stakeholder involvement, opportunities of linking existing government policies to (regional) bottom-up initiatives and the need for (long-term) commitment are discussed in further detail below, based on the case studies.

Stakeholder involvement and cooperation

An ecoregional approach, addressing all issues at stake within a region, forces private and public sector actors to negotiate roles and responsibilities. In situations with weak government, the private sector can take the lead in the implementation of government polices, forcing government to act; in situations with a strong government,

government can force private sector actors to step into a planning and negotiation process. In the end it is in the interest of both sectors to come to concrete results. The prospect of sustainable benefits for all is the carrot, while endless legal procedures, non-implemented policies, or economic deadlock is the stick behind the process.

The Wadden Sea case shows the possibility to combine nature conservation objectives of government with the exploitation of the economic potential of the area by the private sector. Years of strong opposing pressures from the nature conservation community and the gas industry had resulted in a stalemate and numerous court cases. At certain moment in time the cabinet proclaimed a 10 year ban on gas exploration. This time was used to fill the gaps in knowledge on the consequences of gas exploitation and to come to some form of negotiated agreement. The application of the precautionary principle to gas exploitation (a halt on gas exploitation if sea bottom subsidence surpasses the natural sedimentation rate) and the creation of a payment for ecosystem services scheme, funded from natural gas exploitation and used for ecosystem restoration and restructuring of the fisheries sector, in the end provided the way out.

The decentralisation process introduced by the water sector reform plan in Kenya only took off when the flower growers, with the help of an international NGO started organising themselves in water users associations. In essence they carried out the task formally assigned to government, but because of their interest in better water management conditions in the Lake Naivasha watershed, they did not want to wait for a relatively weak government to take action. The master plan process for peatland restoration and development in Kalimantan similarly contributed to the decentralisation process. By taking an ecoregional approach, the local government authorities having jurisdiction over the ecoregion had to take a leading role in the process. This was exactly the intention of the master plan process, where central government provided support, but regional government agencies were in the drivers seat.

From the expert interviews it became apparent that leadership and strategic partners are important elements of a successful approach. Strategic partners are those actors that can make a difference and that are willing to go a step beyond the 'normally expected'. This is closely related to the necessary leadership. In the case of Kenya one actor (WWF) has taken the lead in the process to bring actors together; in the Wadden Sea case both private sector, NGO community and government have shown willingness to listen and to take necessary steps.

Successful combinations of sustainability policies and a bottom up approach

Many countries have trouble in implementing sustainability orientated policies and legislation, due to a lack of coherence between policies, lack of implementation capacity, lack of local ownership, or a combination of these. An eco-regional, bottom up approach taking into account the interests of and involving directly involved stakeholders can create an effective mechanism to make optimal use of principally good, but unimplemented polices and legislation.

In spite of clearly articulated socio-economic and biophysical objectives, the South African legislation on Integrated Development Plans to date have largely failed to recognize the interdependence between socio-economic and ecological systems. Spatial Development Frameworks (SDFs; the spatial component of Integrated Development Plans) are not seen as particularly powerful instruments. Capacity within authorities to ensure implementation, monitoring and/ or enforcement of decisions on land use, is extremely poor. However, in the Upper Breede area the Upper Breede Collaborative Extension Group, consisting of thirteen members from government, civil society and private sector, was effective in using the SDF to inform decision making at municipal level, through which priority projects are identified and funded. The case illustrates that local buy in and a bottom up approach may be key factors to a successful integrated spatial planning process.

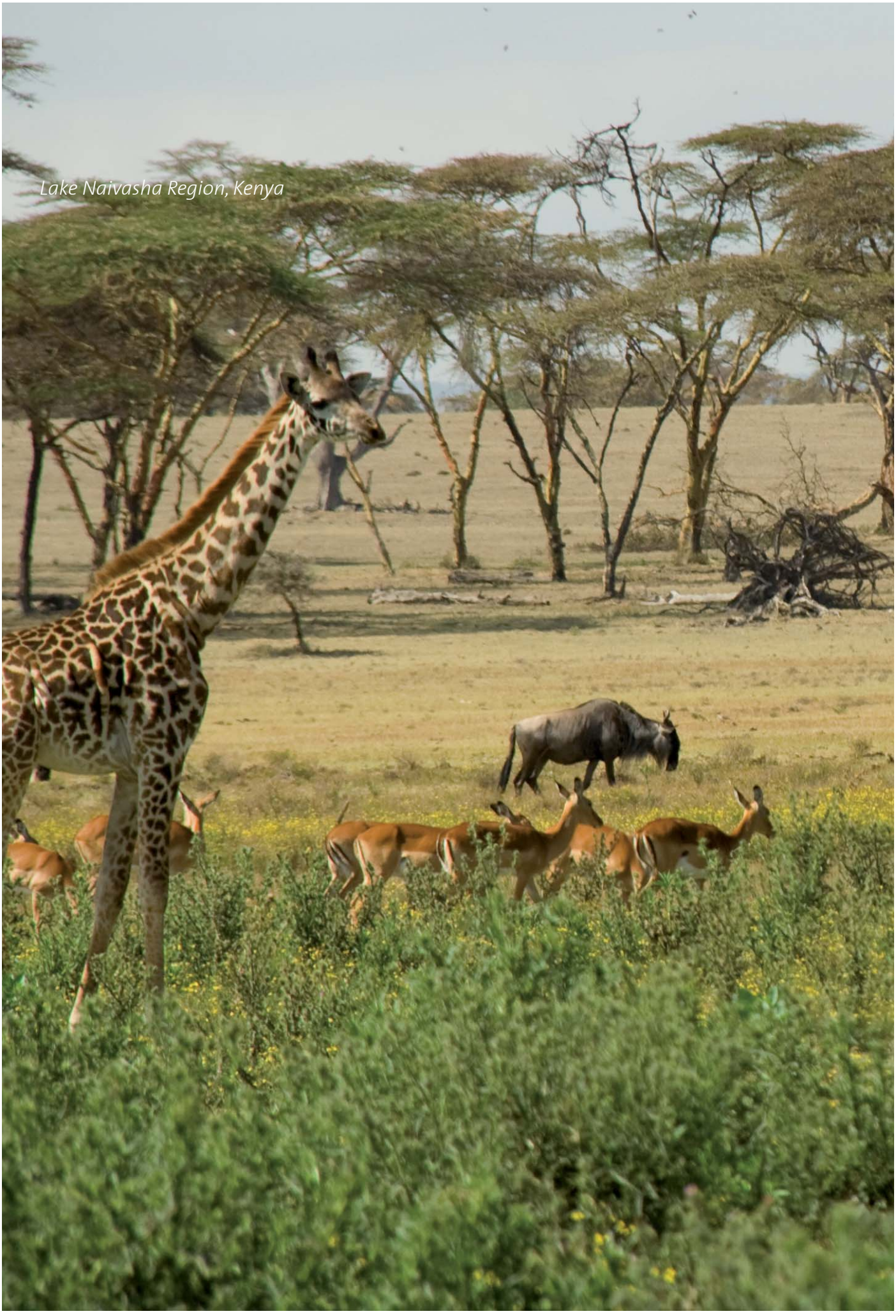
In Lake Naivasha region of Kenya the creation of local water users association provided the change mechanism to come to agreements on more sustainable water use and a payment for ecosystem services scheme to protect upstream water resources and biodiversity. This approach was based on a new Water Sector Reform Plan which so far lied idle on the shelve. Government simply did not have the capacity to implement the reform plan and its far-reaching consequences for the organisation of water management. The plan envisages decentralisation of responsibilities for water management to the directly involved stakeholders through the creation of user associations.

In the GMS case, the use of Strategic Environmental Assessment to asses the consequences of new plans was promoted with a number of pilots. It appeared difficult to implement the instrument in a supranational context. However, the results were such that at lower levels of government, provinces and states started to adopt the instrument as an effective means to address biodiversity, environment and poverty at the earliest possible stages of sectoral and spatial plan formulation. A major outcome of the use of SEA is the possibility to integrate elements of sustainable development into sectoral planning processes. It was acknowledged, not only within environment departments but also by officials from sectors and planning departments, that the early recognition of potential social or environmental impacts of a plan and thinking about more sustainable alternatives does help the planning process, and avoids later problems during implementation.

An important lesson from these three cases is that existing legislation or policies can be used as an effective mechanism for change. A prerequisite is the availability of interested parties to take the lead in implementation. An ecoregional approach, involving actors with a direct stake in the region provides an effective mechanism. Depending on the issues at stake these actors can be from the private sector (e.g. flower growers in Kenya), from government (regional authorities with planning and environmental licensing responsibilities in GMS), or both (wine growers and municipalities in South Africa).

Long term commitment by governments as a precondition

One of the main bottlenecks in the initiatives to create sustainable international trade chains (e.g. in the Kalimantan case and Lake Naivasha case) is the role of national governments. There is limited attention to the impact of their actions to other ecoregions (e.g.: the present perverse incentive of palm oil production for biofuel, while certification is not complete). Furthermore, the creation of sustainable trade chains, especially where it concerns new commodities, requires a prolonged and stable involvement; however, the Dutch environmental and development cooperation policies over the last decade are only to a limited extent consistent/reliable, and do not show long-term commitment.



Lake Naivasha Region, Kenya

4. THE FUTURE PERSPECTIVE OF EED: EXPERT VIEWS

From a series of interviews with key players in the field of ecoregional development (see annex 1), a rather consistent pattern emerged with respect to the future perspective of EED in the light of current spatial planning and development approaches in the Netherlands.

EED: what's in the name?

Ecoregional economic development as a term is unknown outside the Dutch policy arena. The principles that apparently underlie the approach (there is no definition nor any description of the approach), however, are well know around the world and are applied under various headings (e.g. integrated approach, regional development, spatial networks, etc.). Key is to look at things in a practical, integrated way. There is no use in introducing new concepts when you can build on existing concepts. It is recommended to define, in a simple manner, the minimal requirements for any initiative to be defined as EED. A first inventory reveals:

- ecoregion as point of departure - spatial focus;
- integrated view on development;
- bottom up approach involving key stakeholders - linkages to ecosystem services;
- private and public sectors and civil society have a shared responsibility.

The existing, often legally defined environmental assessment procedures (strategic for policies and plans, impact assessment for projects), provide strong tools to provide decision makers with scientifically valid, socially accepted, and politically relevant information for decision making. Environmental assessment can be used effectively to test sectoral plans against a vision of ecoregional development, as shown by the Greater Mekong region case. As most countries do not have an effective spatial planning system, the use of SEA to assess the consequences of sectoral plans provides a means to put such plans in a spatial context.

Last year the Adjara region of Georgia attracted 1 million tourists; it is the fastest growing region in Georgia. The construction boom is causing conflicts between private and public sector interests. Since 2010 the NCEA and DLG are supporting this region with the set up of a spatial planning system in which SEA is completely integrated. In January 2011 the chief architects of the regional and the district authorities visited the Netherlands to learn about SEA and spatial planning. This visit provided extremely useful input for further implementation of an effective planning approach. The SEA component of this spatial planning system secures the integration of biodiversity as an important foundation for the elaboration of alternative development directions that will be discussed with all relevant stakeholders

Further points stressed in this respect:
- don't make it too complex;
- one cannot ignore existing planning frameworks and influences from higher and lower scale levels, and the need to address these accordingly.

Role of the private sector: yes we can, but what about government?
Some sectors are considered to play a leading role. Nothing revolutionary is said when the water and agricultural sector are mentioned as front runners. Considered of equal importance is the role of large traders and retailers and the financial sector.

The respondents see that presently the private sector is expected to come up with innovative solutions to environmental problems associated with trade chains and resource exploitation. It is true that private sector investors are more flexible in finding solutions, and there is indeed growing interest in the financing of sustainable initiatives. Yet, government should take responsibility in the provision of reliable, consistent, and long term policies and the creation of a level playing field, for example by setting minimum standards that provide the innovators with at least a fair level of competition. Moreover, spatial planning by government may prevent indirect, negative land use effects which the private sector cannot really solve (e.g. the food/fuel debate).

Role of Government: constraints and opportunities

Policy coherence: new chances!

At present there is a lack of coherence in policies, created by interdepartmental barriers. For example, climate adaptation lies with the water sector while mitigation is considered an energy affair. The fact that ecosystems play a role in both fields is therefore largely ignored. Similarly, economic development and the Natura 2000 network are dealt with in isolation, while sustainable provision of ecosystem goods and services could be a way to create innovative financial mechanisms for nature conservation (TEEB!). An ecoregional approach provides the means to address these issues in coherence, but has to be supported by coherent policies. The recent merger of agriculture and nature conservation with economic affairs and innovation is generally considered to provide new opportunities for integration of policies and innovation. This requires leadership!

Ecoregional focus to create coherence in funding mechanisms

The presently available funds for support to governments, civil society and the private sector are completely disconnected and subject to continuous policy changes. All respondents had difficulty in envisaging what role government authorities at present could play in the promotion of ecoregional development. They consider Dutch government presently not well equipped for this task. New initiatives in which private, public and civil society partners cooperate run into serious trouble of even finding a counterpart capable of addressing their questions. A possible way out could be the selection of a number of ecoregions where government and private sector support can be harmonised, based on an ecoregional initiative representing the relevant 'agents of change'.

Poverty reduction: wrong choices, missed opportunities and the need for a broader perspective

Economic development is needed to reduce poverty and to avoid people from falling into the poverty - resource degradation trap. Conservation of biodiversity, continued provision of ecosystem services on which livelihoods are based, creation of economic development opportunities and reduction of poverty are multiple sides of the same coin. In an ecoregional approach these issues can be dealt with in an integrated manner, where present development opportunities can be managed in a way that doesn't jeopardise the interests of future generations or people elsewhere. The simple focus on direct poverty reduction and the emphasis on short term measurable outcomes is considered counterproductive, even from a poverty reduction point of view. Short-term decisions may create future resource degradation problems. Reversibly, opportunities are missed because, for example, wetlands restoration is not considered to be something related to poverty reduction. The Kalimantan, Naivasha, Upper Breede cases and even the Wadden Sea case provide examples of how economic stalemate is reversed and development opportunities are created by ecosystem restoration or conservation.

International lessons for the Netherlands?

The Netherlands have a very strong spatial planning tradition. One of the problems is the strong separation between jurisdictions / sectoral ministeries /etc., and consequently a segregation of functions of landscapes. An EED approach looking at multifunctionality of landscapes and its related stakeholders can provide an integrated view on a defined geographical area, combining functions where possible, separating where needed. A consequence of the strong segregation between sectoral interests is the perception of nature as only that what is defined and legally protected as such; with a dominant role of protected species, overlooking the broad spectrum of ecosystem services provided by 'nature' in the broad sense. Ecoregional economic development provides an answer to this, by taking the ecoregion and the services it provides as the basis for sustainable economic development.


Central Kalimantan, Indonesia

CITED LITERATURE

CBD (2000a). Convention on Biological Diversity: Decision V/6 Ecosystem Approach. http://www.cbd.int/convention/cop-5-dec.shtml?m=COP-05&id=7148&lg=0.

CBD (2004a). Decision VII/11 Ecosystem Approach. http://www.cbd.int/convention/cop-7-dec.shtml?m=COP-07&id=7748&lg=0.

CBD (2006). Decision VIII/28 Impact assessment: Voluntary guidelines on biodiversity-inclusive impact assessment. http://www.cbd.int/convention/cop-8-dec.shtml?m=COP-08&id=11042&lg=0.

PBL (Planbureau voor de Leefomgeving) (2010), report on 'Food, Biodiversity and Climate Change': 'Voedsel, Biodiversiteit en Klimaatverandering'; Mondiale opgaven en nationaal beleid'

Literature used in the case studies is included in the report 'Ecoregional Economic Development - Cases'

The Wadden Area„ The Netherlands

ANNEX 1 STEERING COMMITTEE, EXPERT INTERVIEWS AND CASE STUDY EXPERTS

Steering committee

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Expert interviews

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Case studies experts

Top-down, bottom-up, or both? Lessons from the Upper Breede River area, Western Cape, South Africa

By Susie Brownlie; with contributions from Garth Mortimer, Anthony Mietas, Sakkie du Toit, Nik Wullschleger, Rodney Cronwright, Charl de Villiers, Rudolph Rˆscher, and Jeffrey Manuel

Master Plan for the Rehabilitation and Revitalisation of the Ex-Mega Rice Project Area in Central Kalimantan, Indonesia

By Wim Giesen, Euroconsult Mott MacDonald

Ecoregional economic development in the Lake Naivasha Region, Kenya

By Frans Oosterhuis, Institute for Environmental Studies
With contributions from Bart Geenen and Robert Ndetei

Planning and Environmental Assessment in the Greater Mekong Subregion

By Roel Slootweg, Slootweg en van Schooten, with contributions from Annelies Donners (First Secretary, Netherlands Embassy, Vietnam), Peter de Koning (Netherlands

Ministry of Foreign Affairs), Arend Kolhoff (Netherlands Commission for Environmental Assessment; member of TAP), Lothar Lunde (Environmental Operations Center, Bangkok), Joan van Looyen (ITC; teamleader of North-South Corridor SEA)

Trilateral Wadden Sea Cooperation (TWC), the Dutch Wadden Area
By Martine van Zijl, CREM

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