Jaarboek voor Ecologische Geschiedenis
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Jaarboek voor Ecologische Geschiedenis 2012/2013

Erwin H. Karel & Yves Segers (Themaredactie/Guest editors)

Landbouw en milieu

Inhoud:

for centuries. This article focuses on the use of urban waste material in agriculture during the nineteenth century. During this period, researchers (among them the 'hygienists') and officials developed various ideas about the reuse of solid and fluid waste. This article demonstrates how such waste was used as a raw material in the production of manure. The focus will be on the city of Groningen in the sixteenth century, where urban waste was used in the cultivation of former peatlands in the province.

Hanne De Winter en Yves Segers, ***Oorlog als motor van vernieuwing.Het bodemvruchtbaarheidsonderzoek en de bemestingsadvisering in België, jaren 1930-1945 (War as a stimulator of modernization: soil fertility research and manure advice in Belgium, 1930-1945).***

The use of chemical fertilizers grew rapidly from the end of the nineteenth century. Government, farmers' unions and industry all used representatives to promote the new fertilizers, but many farmers distrusted these new products. Hoping to find an answer to the economic crisis of the 1930s, the Belgian government began stimulating research into the more efficient use of land, in due course subsidizing soil research work undertaken at the Bodemkundig Station in Leuven, founded in 1941. After 1945, the need for advice on manure from this institute grew rapidly. The article demonstrates the importance of this development for the Belgian agricultural sector.

Jens van de Maele, ***De resonantie van een stille lente. Nederlandse en Vlaamse persstemmen over Rachel Carsons Silent Spring (1962-1963) (The resonance of Silent Spring: an inquiry into the reception of Rachel Carson's bestseller in the Netherlands and Flanders).***

This article analyses the reception of Rachel Carson's Silent Spring (1962) in Dutch and Flemish popular periodicals. To date it has been commonly assumed that the journalistic reception of Silent Spring in the Low Countries was largely favourable, thus similar to its reception in the United States. This assumption is examined here for the first time and it becomes clear that not all Dutch reviewers greeted Silent Spring with praise. Some were even highly critical of Carson's attack on the prevailing faith in technological progress. In Flanders, the topic of pesticide use was linked to a controversy concerning the practice of fowling, which – like DDT – had a negative impact on the wild bird population. It was also linked to side effects related to other chemicals such as medicines and additives.

Henny J. van der Windt. ***Natuurbescherming en landbouw in Nederland 1880-2010, tussen wetenschap en overheid (Nature conservation and agriculture in the Netherlands 1880-2010: between science and government policy).***

The Netherlands ranks among the countries in the world with the highest agricultural production. During the twentieth century, its landscape, the natural habitat and the environment all changed dramatically as a result of the intensification, scaling up and industrialization of agriculture. At the same time, nature conservation organizations also grew significantly, with about fifteen percent of the Dutch population becoming members of a conservation or environmental organization and about ten percent of the area of the Netherlands designated as nature reserve. This paper reveals how developments in science and government policy strongly influenced the position and strategy of nature conservationists. During the past century, a relatively stable complex of science, practice and policy was developed. As a side effect of the close and long-term cooperation between science, policy and practice, certain areas and themes came to be seen as more important than others, such as a strong focus on vegetation science, political and ecological organs such as the National Ecological Network, and the issue of human-made semi-nature. In times of crisis, however, this cooperation faced challenges.

Jaarboek voor Ecologische Geschiedenis 2011

Piet van Cruyningen (Themaredactie / Guest editor)

Bossen in de Lage Landen

Inhoud

K.A.H.W. Leenders, ***Middeleeuwse bossen in Brabant***

In this mostly sandy region in the middle of the Low Countries the well populated Roman period was followed by a nearly complete depopulation. The landscape could recover during two to six centuries. On the basis of place name studies it is shown that at the reoccupation of the region the new settlers found a quite woody landscape. The farmers used the woods for fodder, manure, wood and timber. In doing so, they exerted pressure on the woods that rose as their hamlets grew. Around 1300 most woodland transformed to heath lands and from 1400 drift sands appeared. This article explores the relation between these developments, changes in settlement pattern and the creations of hedges around fields.

Sara Adriaenssens en Kris Verheyen, ***Een unieke kijk op bosecologie en bosbeheer in de 18de eeuw. Het plantageboek van Zoerselbos***

This contribution highlights so-called plantation books (Dutch: plantageboeken) as a written source for historical ecology. As an example we use the plantation book of Zoerselbos, an ancient woodland (~ 380 ha) in the Campine region (northern Belgium), managed for 563 years by Cistercian monks of the St. Bernard Abbey (1233 A.D. – 1796 A.D.). The plantation book is a note book in which all management activities were recorded on a yearly basis. The Zoerselbos book covers a continuous period from 1725 A.D. until 1796 A.D. It includes information on management interventions, with further quantitative details about the timing, measures, areas and prices. This unique collection of data provides new insights for forest ecology and forest management in the 18th century Campine region.

Klaas Bouwer, ***Nieuwe wegen in het bos. Verbeteringen in de Gelderse bosbouw in de achttiende eeuw***

In the field of forestry and forest management some important innovations were introduced in the province of Gelderland in the 18th century. Until then traditions and experience had dominated the field. The main changes in management were a more effective administrative system, keeping a check on theft of fuel wood and trees and on illegal grazing in woods under 5 years old. In addition to this, the parcellation of the (mainly coppice) woods was adjusted and they were made more accessible by new roads. These modernizations were implemented in private rural estates from about 1730 and some decades later in the provincial forests.

To explain this development four important factors can be mentioned. First, the aspect of knowledge: as an outcome of the 17th century enlightenment in Germany the first studies in forestry were published in the beginning of

the next century. The educated class of administrators in Gelderland –who were also estate owners – studied these new insights. Secondly, societal relations played a role. Many German stewards and foresters worked on properties in Gelderland, and the privileged owners within their circle discussed forestry problems and exchanged seeds and seedlings. In the third place, the geographical factor: the old ducal provincial domain of the Nederrijkswald in particular is situated near the German border. Finally, the economic factor should not be underestimated. The markets for fuel wood and oak tannin in comparison with peat, and at the end of the 18th century the developing export of pine wood (Pinus Sylvestris) for the coal pits in Germany all played a role.

Jan H. de Rijk, *De geschiedenis van de Hoog Soerense malebossen en het probleem van gemeenschappelijk bosbezit*

For centuries, most forests in the Veluwe area were communal forests. In the eighteenth and nineteenth century the communal property of forests was seen as a problem. In 1766 and 1767 the communal forests Hoog Soerense bos and Hoog Soerense heege were bought by the prince of Orange. The history of these forests makes it possible to find out whether communal property was a problem or not. Regulations on the use of these forests date back to 1500. The organisation and the forest management were similar to other communal forests in the Veluwe area. After the purchase of these forests, the investments in new plantings were increased, especially in deep tillage before planting as well as in the maintenance of the forests. These huge costs made the forest less profitable than the communal forests. As a private property, there were new threats. In general, private property was not more efficient than communal property. To escape a law of 1886 on the partition of the commons, the rest of the communal forests transformed themselves in limited liability companies.

English Abstracts

Jaarboek voor ecologische geschiedenis 2010

Chloé Deligne & Tim Soens
(Themaredactie / Guest editors)

Steden en water

Inhoud

logic suggests that the latter project was older than the former, probably dating back from the end of the 12th century. As such this contribution illustrates the added value of combining hydrological models with historical and archaeological sources, in order to unravel the complex interrelationship of cities and rivers throughout the medieval period.

Adriaan de Kraker en Frank Gelaude, *Wateroverlast in Gent in 1571*

The study of an anonymous manuscript of 1571 provides us with a detailed overview of the flooding of the rivers Scheldt and Leie in Ghent, its impact and damage. All toponyms mentioned in the document can be situated on the sixteenth century city map by Jacob van Deventer. The two rivers, Leie and Scheldt, merging in the city, flooded due to the melting of a thick layer of ice and snow after a long period of severe frost. In spite of an advanced and sophisticated hydrographical engineering system controlling the water levels of both rivers within the city of Ghent, inundation of the lower parts of the city could not be prevented. This event caused huge damage and upheaval in the city. Only the houses on higher grounds such as the outlier 'Blandijnberg' and on coversand ridges transecting the city, were spared. Most likely things got out of control completely when the weir of the Vijfwindgaten, designed to get rid of excess water in the city could not be opened in time.

Bram Vannieuwenhuyze, *De beken van middeleeuws Brussel: complexiteit en maakbaarheid van het waterwegennet in een middeleeuwse stad*

Medieval Brussels was not only a town of the river Zenne. In the heart of the city, some small brooks were present. It is necessary to do multidisciplinary research in order 'discover' these brooks, since they hardly have left traces. Late medieval brook names, urban edicts, descriptions of the urban districts, archaeological data and more recent maps make it possible to reconstruct the water courses. Yet, it seems that two networks of brooks existed in the medieval town centre: a trio of natural brooks, who gradually disappeared from public space and were arched, and secondly a network of artificial open air aqueducts (which were also called 'brooks'). The town council enormously benefitted from this artificial water network, since it allowed to control public space and to manage the urban water supply.

François Jarrigue, *De strijd tegen het vlasroten: steden, conflicten en territoria in het stroombekken van de Leie in het midden van de negentiende eeuw*

De nombreux travaux ont montré à quel point les réseaux hydrographiques et les ressources en eau ont été travaillés et transformés depuis le Moyen Age.

Mais avec l'industrialisation et l'urbanisation du XIXe siècle, la question des ressources en eaux se pose avec une force inédite. Dans le bassin de la Lys, entre la France et la Belgique, les conflits pour le contrôle des eaux se multiplient au fur et à mesure qu'apparaissent de nouvelles utilisations. La multiplication des usages domestiques et industriels qui accompagne la croissance urbaine se heurte notamment au développement de l'activité du rouissage des lins dans la Lys. La pratique du rouissage consistait à plonger les plantes dans l'eau afin de décoller la fibre, or cette activité insalubre durant les mois d'été provoqué de plus en plus de plaintes au milieu du XIXe siècle. Les villes industrielles de Gand et de Roubaix s'efforcent de contrôler les eaux de la Lys pour leur besoin, elles engagent dès lors une véritable lutte contre l'activité du rouissage et ceux qui la pratiquent. Au milieu du siècle, entre Armentières et Gand, se cristallisent des conflits incessants pour le contrôle des eaux. Les autorités tentent de les atténuer en recourant soit aux régulations juridiques soit aux promesses de la technique.

Stéphane Frioux, *De zoektocht naar zuiver water in Noord-Franse en Belgische steden tijdens de Belle Époque (1890-1914)*

Alors que débute le XXe siècle, les problèmes d'approvisionnement en eau des villes d'Europe occidentale ne sont pas tous réglés : les modes existants révèlent leurs insuffisances, tantôt en qualité, tantôt en quantité. Hygiénistes, ingénieurs, élus et citadins débattent sur les meilleurs moyens d'éviter les épidémies hydriques ; divers inventeurs et entrepreneurs cherchent à les convaincre d'adopter les procédés d'épuration ou de 'stérilisation'. C'est ainsi que naissent et sont expérimentés, avant la Première guerre mondiale, les principaux dispositifs de purification de l'eau. Une comparaison France/Belgique laisse apercevoir la circulation internationale des techniques et des informations, mais également les spécificités nationales, tantôt liées aux conditions environnementales de l'adduction d'eau pour alimenter les villes, tantôt aux conditions politiques ou juridiques.

English or French summaries

JbvEG 2009

Jaarboek voor ecologische geschiedenis 2009

Marjolein 't Hart & Henk van Zon

(Themaredactie / Guest editors)

Natuur en milieu in Belgische en Nederlandse koloniën

Inhoud:

Summary This article engages with recent historiography on 'Dutch' visions on nature in the New World in the seventeenth century, which partly stems from the fields of environmental history and history of science (works by Richard Grove and Harold Cook) and partly proceeds from the perspective of 'cultural geography' (notably, studies by Benjamin Schmidt and Donna Merwick). Key questions of this contribution are: did Dutchmen in the process of constructing their vision on nature build primarily on knowledge and insights accumulated by other Europeans or did they add something of their own as well? And if so, can these novel approaches all be lumped together under a common, 'Dutch' denominator, as Donna Merwick has claimed? And did Dutch colonies on the American mainland eventually see the emergence of a kind of 'environmental awareness' or 'environmental policy', as Richard Grove has detected in European settlements in the regions of the Indian Ocean and the Caribbean?

To answer these questions, 'Dutch' visions on nature in different parts of the New World are compared and traced through time. The comparison concerns three regions: New Netherlands, northeast Brazil (Pernambuco) and the coastal strip between the Amazone and Orinoco rivers, known as the Wild Coast, where Dutchmen in the seventeenth century undertook several attempts at colonization, which eventually resulted in permanent settlements in Surinam, Essequebo, Demerara and Berbice. Although an 'environmental awareness' in the sense as Richard Grove observed for other European settlements overseas did not arise in any of these three regions,

visions on nature in these Dutch colonies in the Atlantic world nevertheless showed a remarkable evolution. The comparison demonstrates that visions on nature in these different regions were determined by more variables than current literature suggests. Reality proves to be more varied than, notably, historians following a 'cultural geographical' approach have assumed.

Alex van Stipriaan, Suriname, ***El Dorado van de korte termijn Milieueffecten van de exploitatie van de natuurlijke rijkdommen, 17e-20e eeuw [Suriname, Short term El Dorado. The exploitation of natural riches and their environmental effects, 17th-20th century]***

The image of Suriname has always been an El Dorado of natural riches. What were the effects of this image, from a environmental point of view? Did the transformation of the plantation colony towards an industrial mining economy result in another attitude towards the environment? Up to the twentieth century, Suriname was a typical plantation economy. Everything was geared towards large scale production of mainly coffee and sugar. The way the natural factors of production were handled resulted in exhaustion. Production only stopped when soil and crops were depleted. In the new sectors, like gold, gum and bauxite, exhaustion ruled too. Legislation to mitigate the worst effects was often inadequate. Reproduction of the natural environment seems never to have had any actual priority.

Peter boomgaard, ***Droefenis en duurzaamheid, Beheer en exploitatie van de bossen op Java onder Daendels (1808-1810) [Sadness and Sustainability: Management and Exploitation of the Forests of Java under Governor-General Daendels (1808-1810)]***

Governor-General Daendels established in 1808 a Forest Department for Java. It was the first centralized colonial forest service in Asia, and it came almost a century earlier than a comparable organization in the mother country, the Netherlands. In this article, the developments leading up to the creation of the Forest Department will be dealt with, focusing on the large demand of the Dutch East India Company for timber, locally leading to the depletion of the forests at an early stage. The main sections of the article describe and analyze the measures taken by Daendels to arrive at a better management of the forests, and the way these measures were carried out. The article deals with the European and indigenous employees of the Forest Department, their daily activities, and the technological innovations which Daendels attempted to introduce. Finally Daendels' measures will be assessed in the context of the sustainability of the production of timber under his command.

Patricia Van Schuylenbergh, *Congo Nature Factory, wetenschappelijke netwerken en voorbeelden van Belgisch-Nederlandse uitwisselingen (1885-1940) ['Congo Nature Factory': scientific networks and examples of Belgian-Dutch connexions (1885-1940)]*

Could we assert that Congo was a "Belgian Java"? Historical arguments confirm it since, right from the start, the Belgian colonial system borrowed practices from the Dutch colonial model, so as to acquire natural resources at little cost and use them as a tool for promoting metropolitan economy. Environmental knowledge regarding Congo, benefiting from the progress of scientists commissioned by the State or not, boosted its exploitation. This contributed to land structuring but revealed the danger of its excesses as well. Experimental and scientific transfers between colonial Belgium and The Netherlands, their questioning about biodiversity protection, within the international context, stimulated ecological consciousness.

Recensies

English Abstracts

Jaarboek voor ecologische geschiedenis 2008

Adriaan M.J. de Kraker & Henny van der Windt
(Themaredactie / Guest editors)

Klimaat en atmosfeer in beweging

Inhoud:

Summary This paper shows how storms prior to the period of instrumental weather observation can be reconstructed. From this reconstruction it is possible to distinguish storm patterns. Knowledge of historic storms and storm patterns is vital because storms may cause damage and often coincides with heavy rainfall and flooding. In the framework of present climate warming an analysis of storms from 1400 to 1625 has been made. Grading the storms into eight categories six periods of increasing storminess could be established. Enhanced storm frequency relates to a strong NAO-signal. In view of continuous warming and more rainfall, it may be expected that storm frequency will also increase along with increasing damage. Although this renders research of past storms as example for the future more important, too many research opportunities in the Low Countries remain unused.

Summary The Great Storm of 7/8 December 1703 (new style) can be viewed as one of the most severe storms in the Low Countries of the last five hundreds years. The effects of this storm in England are well known, because of the war situation of that moment. The remarkable thing about that storm is that it was nearly completely forgotten in the southernmost coastal areas of the Low Countries as it was not accompanied by a storm

surge (what did occur so in the coastal area from the Channel to Northern Germany and Jutland and also during the storm of 1717). The authors provide in this paper an analysis of the storm in which attention is given to the origin, the force of the storm and its further development. Next to it, contemporaneous descriptions on the passage of the storm in the Low Countries are given focusing on the damage occurred.

Joop Oude Lohuis, ***De rol van wetenschappelijke gegevens in het klimaatdebat, de discussie over de 'hockeystick' als grafische weergave van een historische reconstructie van het klimaat [The role of scientific data in the climate debate, the discussion on the 'hockeystick' as a graphical representation of a historical climate reconstruction]***

Summary Scientific data play a substantial role in the societal and political discussions on climate policy. An important example are the data with regard to the so-called 'hockeystick', a graphical representation of a reconstruction of the climate developments during the last millennium. Such reconstructions are far from easy and are always surrounded with uncertainties. However, these kinds of reconstructions are the basis for predictions of the global effects of climate change in the future. For that reason, science should be as transparent as possible in its efforts to calculate the risks and to formulate its societal recommendations. In this article the focus is on the history of the climate problem, the Intergovernmental Panel on Climate Change (IPCC) and Dutch climate policy. The actual societal discussions on the climate issues and the interactions with scientific developments will be illustrated by the 'hockeystick'.

Ed Buijsman, ***Het chemische neerslagonderzoek in Nederland, een kleine geschiedenis [Chemical deposition research in the Netherlands, a short history]***

Summary Precipitation: rain, snow, hail – ultimately, all of it is water. As early as in the 17th century, however, some researchers expected to discover more than just water. Throughout the centuries and for various reasons, scientists would be preoccupied with the chemical composition of precipitation. Research in the Netherlands was mostly based on previous experiences in other countries. Dutch researchers played a modest role in this field, apart from a period around 1985, when they worked on acid rain at an international level. At that time, they did contribute to the solution of the many methodological problems that surrounded this area of research. This article provides a brief summary of Dutch research work, starting at the time of Van Leeuwenhoek, in 1702, up to the 1990s.

Summary Dutch environmental and conservation groups have contributed significantly to politicising climate change. Analogous to the diversity of the movement – from mobilising organisations like Friends of the Earth, via conservation groups at the provincial level, to radical groups like the Greenwash Guerilla's – a plurality of problem definitions, solution strategies and action models has emerged. Apart from lobbying, the action repertoire varies from building a sandbags dike around the site of the 2000 Climate Summit in The Hague, via the planting of walnut trees in order to raise consciousness about the relationship between deforestation and climate change, to throwing a cake to the American delegation leader at the Climate Summit in The Hague. However, due to the specific Dutch political opportunity structure, problem definitions and solution strategies are not that radical: ecological modernisation and cooperation with government and business.

Summary The Dutch Society for Agriculture and the Agricultural Board have dealt with poblems of nature, landscape and the environment between 1948 and 1972 more than expected. Their position regarding the environment developed in a complex and dynamic way. There was a regular consultation with the Contact Committee for the Conservation of Nature and Landscape. The cooperation had a pragmatic character. Although there were options for further co-operation, co-operation remained limited. This was the result of the structurally different developments of agriculture and nature protection. The agricultural neocorporatism model was another factor, because it was closed for outsiders like conservationists.

Jaarboek voor ecologische geschiedenis 2007

Henny van der Windt (Themaredactie / Guest editor)
Tussen dierenliefde en milieubeleid, Tien jaar ecologische geschiedschrijving in België en Nederland. Jubileumnummer naar aanleiding van het tienjarige bestaan van het Jaarboek

Inhoud:

as well as on the longer term. With regard to the background of the authors, the JEG also includes philosophers, archaeologists and policymakers to a larger extent than the other journals, although historians constitute the largest group. Male authors clearly dominate the field of ecological history, but the number of female authors is growing. The JEG also publishes frequently on 'grey' topics (environmental problems) and less about 'green' (nature) items. Water management, environmental policy, pollution and agriculture are dominant features. Compared to the other two periodicals, Dutch and Belgian ecological historians more often study animals and flora, but they publish less on forestry, nature conservation and the 'green' movement. The yearbook serves as a clear platform within the academic world for ecological history in the Low Countries.

Dries Tys en Pieterjan Deckers, ***Waarom een kip nooit zomaar een kip is, Ecologische geschiedenis en archeologie: een inleiding.***

Geen samenvatting [no summary]

Wietske Prummel, ***Mens en dier in de pre- en protohistorie van Noord-Nederland [Humans and animals in the prehistory and protohistory of the northern part of the Netherlands]***

Summary This article describes the development of the relationship between humans and animals in the northern part of the Netherlands from 5600 BC until the early Middle Ages. Until approximately 4400 BC, humans were almost exclusively hunter-gatherers. Major changes occurred between 4800 and 4400 BC, when agriculture was introduced. The landscape became more open and cattle were used to plough the fields. The salt marshes of the northern coastal regions appear to have been appropriate grazing land for cattle, sheep and goats from 700 BC onwards. Animals also had symbolic value, as is shown by the appearance of animals as gifts in human graves. The dykes which were constructed in the eleventh and twelfth centuries gave the inhabitants better protection against the sea. However, another consequence was substantial habitat loss for certain wild animals.

Chloé Deligne, ***Stedelijke vervuiling in het verleden: een inleiding***

Geen samenvatting [no summary]

Dave De ruysscher, ***'Ter minste schade', Milieurecht en -rechtspraak tussen buren te Antwerpen en Mechelen tijdens de zestiende en zeventiende eeuw [Legislation and case law on neighbour nuisance in Antwerp and Mechelen (sixteenth and seventeenth centuries)]***

Summary In this contribution, the evolution of urban legal solutions regarding neighbour nuisance is examined for Antwerp and Mechelen. In both cities, the sixteenthcentury written customary law provided remedies for these situations.

Yet the efficiency of these rules was not merely the result of their formulation in legal texts, but also of their application in judicial practice. In both Antwerp and Mechelen, experts played an important role in trials on neighbour nuisance. As a result, the judges did not follow the written rules too strictly, but rather searched for adequate answers to often complex situations.

Henk van Zon, ***Duurzaamheid: een inleiding***

Geen samenvatting [no summary]

Tom Verbeke, ***De milieu-Kuznets-curve voor SO_2 en CO_2 in België en Nederland [The Environmental Kuznets Curve for SO_2 and CO_2 in Belgium and the Netherlands]***

Summary The Environmental Kuznets Curve (EKC) represents graphically the relationship between economic development and the environment. In this contribution, we focus on the impact of economic growth on the emissions of SO_2 and CO_2 in Belgium and the Netherlands. We also try to show which factors influence the EKCs for these pollutants. Our data reveal that economic development in the last decades has lead to environmental improvement in SO_2, both in Belgium and the Netherlands, but not in CO_2. With respect to the factors that have had an impact on the way in which emissions react to economic growth, the evidence we present suggests that new technology was important for SO_2. There are also important substitution effects. However, these differ between the two countries. Whereas the Netherlands has replaced more polluting fossil fuels by gas, Belgium has replaced fossil fuels by nuclear energy. However, our analysis suggests that these substitution effects are not sufficient to explain the EKC for SO_2.

Henny van der Windt, ***Ecologische geschiedenis en sociale bewegingen: een inleiding***

Geen samenvatting [no summary]

Henny van der Windt en Dirk Bogaert, ***Vlaamse en Nederlandse natuurbeschermers op zoek naar een betere natuur: discoursen en strategieën in de periode 1945-2005 [Flemish and Dutch nature conservationists looking for a better nature policy: discourses and strategies in the period 1945-2005]***

Summary In this article we compare Dutch and Flemish nature conservation during the period 1945-2005. We found that from the beginning in both countries the focus was on arcadian, harmonious landscapes. In the first decades, the Dutch conservation movements were better organized, worked together more closely with stakeholders and scientists, could purchase their own nature reserves and influenced policymakers. This, together with the

JbvEG 2005/2006

Jaarboek voor ecologische geschiedenis 2005/2006

Hilde Greefs & Marjolein 't Hart (Guest editors / Themaredactie)
Water Management, Communities, and Environment.
The Low Countries in Comparative Perspective, c. 1000 – c. 1800
[Waterbeheer, gemeenschappen en de natuurlijke omgeving.
De Lage Landen in comparatief perspectief, c. 1000 – c. 1800

Inhoud:

Samenvatting De Noordzee vormde een voortdurende dreiging voor de kustgebieden in de Lage Landen. Er heerste niet enkel overstromingsgevaar; de dreiging werd nog versterkt door de turfwinning en door de bodemdaling van de veenachtige gronden.

De vraagstelling van deze bundel richt zich op de verhoudingen tussen de lokale gemeenschappen, de milieuproblematiek en de economische omstandigheden en op de oplossingen die aangedragen werden voor de problemen die ontstonden op het gebied van het waterbeheer. Daarbij dragen de auteurs bij tot een herziening van het traditionele beeld van de historiografie, dat teveel aandacht besteedt aan de verstedelijkte samenleving. Immers, de ontwikkelingen op het platteland waren van cruciaal belang voor de Nederlandse samenleving. Het ingrijpen van de mens op zijn omgeving door de introductie van nieuwe technieken om het land terug te winnen en door verbeteringen aan te brengen aan het waterbeheer hadden belangrijke economische en – soms ook ongewenste - ecologische gevolgen. De auteurs in deze bundel vormen een genuanceerd beeld van de complexe relatie tussen mens en natuur tijdens de Middeleeuwen en de Nieuwe Tijden. Ze geven een beeld van een agrarische samenleving die sociaal en technologisch meer dynamisch is dan men vaak heeft vermoed. Daarbij hebben zij niet enkel oog voor de veranderingen in de omgeving tengevolge van het menselijke ingrijpen, maar ook voor de verschillende partijen – de landeigenaars, de lokale gemeenschap en verschillende organen van waterbeheer - die bij het besluitvormingsproces betrokken waren.

De rol van de turfwinning is daarbij een onderwerp waar buitenlandse specialisten nog weinig weet van hebben. Turf was onmisbaar voor de groei van de economie als bijzonder handige en goedkope energiebron voor huishoudens en industrie. Maar turfwinning had een onbedoeld gevolg voor het milieu: bodemdaling en –erosie waardoor het waterbeheer een problematisch karakter kreeg. De oplossingen voor deze milieu-problematiek verschilden sterk per gebied en per tijdvak. Dit was vooral een gevolg van dynamische besluitvormingsprocessen in een sterk gedecentraliseerde staat. De lokale sociale en politieke verhoudingen waren daarbij vaak doorslaggevend voor het eindresultaat.

De bijdragen in de bundel vertegenwoordigen zo recente trends in de historiografie. De auteurs stellen daarbij nieuwe vragen aan het bijzonder rijke archiefmateriaal.

Andrew Wareham, ***Water management and the economic environment in Eastern England, the Low Countries and China c. 960-1650: comparisons and consequences [Waterbeheer en het economische milieu in Oost-Engeland, de Lage Landen en China, circa 960-1650: vergelijkingen en gevolgen]***

Samenvatting Impliciet wordt vaak aangenomen dat waterbeheer het gevolg was van ecologische crises. De auteur laat zien dat gemeenschappen in China, de Lage Landen en in het oosten van Engeland zich zowel door milieuaspecten als door economische overwegingen lieten leiden. Zijn vergelijking brengt naar voren dat investeringen in waterbeheer de economische groei bevorderden. Hij onderbouwt zijn stelling door verslag te doen van zijn archiefonderzoek in de Oost-Engelse Fenlands in de Middeleeuwen en in Soham, Cambridgeshire, in de 17de eeuw.

Specifiek voor de Engelse casus is de sterke traditie van gemeenschapsrechten op de grond, wat droogleggingen regelmatig bemoeilijkte. In de natte Fenlands bestond de dorpsgemeenschap uit middelgrote boeren, in tegenstelling tot de hogere landbouwgronden waar grote landeigenaars domineerden met een relatief groot aantal loonafhankelijke boeren. Het systeem van waterbeheer werd bepaald door de milieuomstandigheden en door de lokale sociale en politieke verhoudingen. De nieuwe waterwegen en dijken vormden een onderdeel van een uitgebreid transportnetwerk dat de sociale en economische omstandigheden van lokale gemeenschappen sterk beïnvloedde. Gebieden met voorheen een onvruchtbaar aanzien veranderden in rijke landbouwgronden en de handel en migratie namen toe. De interactie tussen de staat, de investeerders en de lokale gemeenschappen

leidde tot oplossingen die uiteindelijk ook de economische ontwikkeling weer ten goede kwamen. Bij het uitbouwen van een effectief waterbeheer was het bovendien noodzakelijk de steun en de medewerking te krijgen van de lokale gemeenschap.

Aan het einde van het artikel laat de auteur zien dat zijn bevindingen ook voor de hedendaagse problematiek van waterbeheer in ontwikkelingslanden van belang kunnen zijn. Tegen de achtergrond van de klimatologische veranderingen en van de menselijke tragedies veroorzaakt door zowel overstromingen als droogte pleit de auteur voor een flexibel waterbeheer dat rekening houdt met milieueffecten en met de betrokken gemeenschappen.

Tim Soens, ***Explaining deficiencies of water management in the late medieval Flemish coastal plain, 13th-16th centuries [Falend waterbeheer in de laatmiddeleeuwse Vlaamse kustvlakte (13de-16de eeuw): aanzet tot een sociaal-economische verklaring]***

Samenvatting De ecologische geschiedenis van de laatmiddeleeuwse Vlaamse kustvlakte wordt gekenmerkt door een problematische relatie van de mens met zijn natuurlijke omgeving. Hoewel al voor het einde van de 13de eeuw een geperfectioneerd en vooruitstrevend waterbeheersingsysteem tot stand was gekomen, kon niet verhinderd worden dat in de loop van de late middeleeuwen duizenden hectaren landbouwgrond verloren gingen door overstromingen en duinverstuiving. In dit artikel tracht de auteur we aan te tonen dat dit schijnbare falen van het waterbeheer niet los kan worden gezien van de belangrijke transformatie die de landbouweconomie in de kustvlakte onderging vanaf de late 13de eeuw. Parallel aan de achteruitgang van het voorheen dominante eigengeërfde boerenbedrijf en de opkomst van grote commerciële pachtbedrijven in handen van grotendeels buiten het gebied woonachtige eigenaars, wijzigde ook het waterbeheer. Zowel de organisatie, de dagelijkse werking als het beleid van de 'wateringen', die vanaf het eind van de 13de eeuw verantwoordelijk waren voor de meeste waterstaatswerken, weerspiegelden de gewijzigde maatschappelijke verhoudingen. Terwijl inkomensstrategieën van grootgrondbezitters leidden tot een beperking van de investeringen, werd het dagelijkse bestuur van de wateringen in de eerste plaats een factor van machtsverwerving in de lokale dorpsgemeenschap. Wijzigende arbeidsverhoudingen in het waterbeheer benadeelden op hun beurt de kleine grondbezitters, voor wie de waterstaat meer en meer een bijkomende last werd. Door het waterbeheer op deze wijze te benaderen vanuit de regionale machts- en eigendomsverhoudingen, kan ons inzicht in de ecologische

dynamiek van de kustvlakte aanzienlijk toenemen.

Milja van Tielhof and Petra van Dam, *Losing land, gaining water. Ecological and financial aspects of regional water management in Rijnland, 1200-1800 [Landverlies en waterwinst. Ecologische en financiële aspecten van regionaal waterbeheer in Rijnland 1200-1800]*

Samenvatting In de landschapsgeschiedenis van Holland speelt turfwinning, of vervening, een zeer grote rol. Gronden werden door vervening dermate aangetast dat zij over het algemeen niet meer agrarisch konden worden gebruikt. Vanaf de 16de eeuw werd zelfs een methode toegepast (het slagturven) waarbij de hele metersdikke veenlaag werd afgegraven zodat land veranderde in een waterplas. In de historiografie bestaat vaak de neiging om landverlies als iets negatiefs te beschouwen. In die visie zou de uitbreiding van de veenplassen als een ecologische ramp zijn te beschouwen. In dit artikel benaderen de auteurs landverlies neutraal en stellen de vraag welke gevolgen de turfwinning voor het waterbeheer had. De bestudeerde regio is het hoogheemraadschap van Rijnland, gelegen in centraal Holland.

Hoofdthema's zijn de gevolgen van de turfwinning voor het fysieke waterbeheer enerzijds en voor de financiering van het waterbeheer anderzijds. Het fysieke waterbeheer blijkt geprofiteerd te hebben van de landvernietiging in die zin dat er meer ruimte ontstond voor waterberging. De grote bergingscapaciteit van het Grote Haarlemmermeer had als gevolg dat het waterpeil minder snel problemen opleverde en het hoogheemraadschap minder geld hoefde te investeren in uitbreiding van de uitwateringsmogelijkheden.

De gevolgen van de turfwinning voor de financiering van het waterbeheer bleken slechts beperkt te zijn. Dit konden de auteurs vaststellen dankzij onder meer een grondige analyse van de vermindering van het belastbare oppervlak waarover Rijnland zijn kosten omsloeg. De afname hiervan in de loop der eeuwen was gering. In het artikel worden verschillende verklaringen daarvoor aangedragen. Een belangrijke institutionele verklaring was het waarborgsysteem dat Rijnland in samenspraak met de gewestelijke overheid ontwikkelde. Ververs moesten een waarborg aanwijzen wanneer zij land wilden vergraven, eerst in de vorm van vruchtbaar land, en later in de vorm van een waarborgsom naar rato van de gewonnen turf. Opvallend genoeg waren de ecologische gevolgen van turfwinning dus groter dan de fiscale. Het artikel toont de grote institutionele kracht van het waterbeheer in deze periode aan.

Charles Cornelisse, *The economy of peat and its environmental consequences in Holland during the late Middle Ages [De economie van turf en de gevolgen voor het milieu in Holland in de late Middeleeuwen]*

Samenvatting Vanaf de 14de eeuw was turf de belangrijkste brandstof in Holland. Door de grote verstedelijking en de toenemende industrialisatie nam de behoefte aan brandstof snel toe. In de 16de eeuw werd 85 tot 90% van de energiebehoefte door turf gedekt, de rest betrof voornamelijk hout, wat steenkolen en een weinig houtskool. Het energieverbruik in Holland in de 15de en 16de eeuw werd geschat via twee verschillende methodes resulterend in een aanzienlijk verbruik van circa 14 gigajoules per capita. Er zijn geen vergelijkbare waarden voor die tijd uit andere landen beschikbaar. Het industriële verbruik wordt geschat op 50 tot 70% van de totale energieconsumptie en dat van huishoudens en instellingen samen op 30 tot 50%. In de zeventiger jaren van de 16de eeuw lijkt het energieverbruik wat af te nemen, mogelijk door een relatieve toename van de handelsactiviteiten, een relatieve afname van energie-intensieve industrieën, een grotere belangstelling voor energiebesparende uitvindingen en een wat teruglopende conjunctuur. Tegen het einde van de 15de eeuw waren de veenvoorraden boven de waterspiegel in het hart van Holland voor het grootste deel uitgedolven. Jaarlijks werd tussen de 220 en 440 hectaren aan veen afgegraven. In de loop van de 16de eeuw werd turf voornamelijk door slagturven gewonnen, door het baggeren van veen onder de waterspiegel, waardoor waterplassen ontstonden. Ondanks bezwaren van hoogheemraden en sommige stadsbesturen ging het baggeren op dezelfde voet voort. Per jaar werd circa 115 tot 230 hectaren land prijs gegeven aan het water. Ruwweg 20% van de geproduceerde turf in Holland werd rond 1570 geëxporteerd naar Brabant en Vlaanderen.
Tegelijkertijd werd turf ook geïmporteerd uit Overijssel en Utrecht. Ondanks grote druk om de uitvoer te verbieden en het veen te behouden voor eigen inlands gebruik kwam dat verbod er niet. De centrale overheid probeerde de export te verminderen door een exportbelasting, de impost, in te stellen. Ondanks diverse verhogingen van het imposttarief nam de export niet af. De lobby voor het turfbedrijf was blijkbaar krachtiger dan die van de tegenstanders van het ontgronden. De opkomst van de droogmakerijen in de tweede helft van de 16de eeuw heeft mogelijk de steun voor het slagturven versterkt. Zowel voor het platteland als voor diverse belanghebbende steden was het turfbedrijf uiterst lucratief en economisch interessanter dan het uitoefenen van landbouw op de verdolven veengronden. Voor de plattelandseconomie was deze bedrijfstak van aanzienlijk belang.

Piet van Cruyningen, *Profits and risks in drainage projects in Staats-Vlaanderen, c. 1590-1665 [Winst en risico bij inpolderingen in Staats-Vlaanderen, ca. 1590-1665]*

Samenvatting Tussen 1590 en 1665 werd in de Republiek meer dan 125.000 hectaren land aangewonnen. Dat betekende een enorme inspanning, die tot de 20ste eeuw ongeëvenaard zou blijven. Aan de financiële kant van deze golf van inpolderingen en droogmakerijen is lange tijd weinig aandacht besteed. In dit artikel wordt getracht hierin meer inzicht te verschaffen door de financiering van bedijkingen in Staats-Vlaanderen te onderzoeken. Het blijkt dat in Staats-Vlaanderen in de periode 1590-1665 in totaal 12-15 miljoen gulden werd geïnvesteerd in het bedijken en in cultuur brengen van ongeveer 39.000 hectaren land. Het ging hier om riskante ondernemingen die tot grote verliezen konden leiden door natuurrampen, militaire inundaties of confiscatie. Verliep de inpoldering echter volgens plan, dan konden aanzienlijke rendementen worden behaald door verkoop of verpachting van het gewonnen land.

Belangrijk voor het succes van vele inpolderingen was het optreden van de overheid. Voor elke bedijking was een octrooi van de Staten-Generaal vereist. Bij de octrooiverlening werd rekening gehouden met de belangen van aangrenzende polders en nederzettingen. Ook werden voorschriften gegeven voor het bestuur van de polder en werd deze voor een aantal jaren vrijgesteld van belastingen. Door het octrooi werd de inpoldering dus voorzien van een juridisch raamwerk dat veel problemen voor de investeerders hielp voorkomen, terwijl de belastingvrijstelling investeringen in landwinning stimuleerde. De nauwe banden tussen de politieke en de commerciële elite van de Republiek zullen bijgedragen hebben aan de positieve rol van de generaliteit bij de inpolderingen.

De bedijkingen werden gefinancierd door groepen investeerders die samenwerkten in compagnieën. Evenals bij de partenrederij kon men een aandeel in een bedijkingscompagnie nemen dat vererfbaar en vervreemdbaar was. De aansprakelijkheid was echter niet beperkt. De investeerder moest zijn aandeel in de kosten van de bedijking betalen, ook als die veel hoger uitvielen dan begroot. Toch boden de compagnieën de mogelijkheid om de risico's te verkleinen doordat de investeerder zijn kapitaal kon spreiden over verschillende projecten.

Een deel van de investeerders verkocht de grond al snel na de bedijking. Anderen deden een lange termijn investering en verpachtten hun grond. Uiteindelijk bleef het grootste deel van het land in de nieuwe polders eigendom van stedelijke investeerders, vooral uit de Zeeuwse hoofdstad Middelburg. Dat deze investeringen zouden duiden op aristocratisering van de Middelburgse elite, zoals wel beweerd is, is twijfelachtig. Eerder lijkt er sprake te zijn van aanpassing aan veranderingen in de regionale economie, waarbinnen het belang van handel en scheepvaart relatief afnam ten gunste van dat van de landbouw.

Alfons Fransen, *Sharing the responsibility of ecological change. The case of the Diemerdijk, 1670-1770 [Participeren in de kosten van milieuverandering. De casus van de Diemerdijk, 1670-1770]*

Samenvatting In de periode 1670-1770 was er een verhoogd risico van dijkdoorbraken. Deze situatie was volgens de historiografie vooral het gevolg van onvoldoende aanpassing in de formele beheers- en financieringsafspraken aan de ecologische ontwikkelingen in de periode daarvoor. De Diemerdijk is hiervan een goed voorbeeld. Door politieke tegenstellingen tussen de soevereine provincies Holland en Utrecht was aanpassing in de financiering onmogelijk. Het onderzoek naar de financiële praktijk met betrekking tot de Diemerdijk levert nieuwe inzichten in het werkelijke financiële risico en de informele regelingen.

In de periode van de 9de tot de 15de eeuw breidde de Zuiderzee zich voortdurend uit. De zuidgrens werd al enige tijd beschermd door een dijk, die werd onderhouden door dijkplichtige ingelanden. Voor de overige kosten werd een veel grotere groep belanghebbenden aangesproken. Waalplichtigen waren verantwoordelijk voor herstelwerkzaamheden na een doorbraak, de kosten van het algemeen beheer en de kosten gerelateerd aan de spadegestoken dijkvakken.

In de periode 1675-1735 stegen de kosten sterk, terwijl bekend is dat de pachtwaarde daalde. De Staten van Holland en de stad Amsterdam stelden veel belang in een goed onderhoud van de Diemerdijk. Herhaaldelijk werden structurele oplossingen voorgesteld, maar deze werden niet aanvaard door de provincie Utrecht. Het (waalplichtige) Utrecht bleef van mening dat gewoon onderhoud voor rekening moest blijven van het (dijkplichtige) Holland. Eenzijdig werd de Hinderdam afgebroken en een nieuwe sluis in de monding van de Vecht aangelegd. Hierdoor werd de zeedijk ruim 5400 roede korter. Holland en Amsterdam traden krachtdadig op bij grote schade. Financiering van de schade was geen probleem dankzij Amsterdamse voorfinanciering. De herstelkosten na een dijkdoorbraak kwamen uiteindelijk voor rekening van de Staten van Holland.

Na 1750 kwam hier verbetering in en bleek het mogelijk een deel van de verlaten landen te verkopen. Intussen was toen het paalwerk vervangen door een stenen glooiing als gevolg van de paalworm. Die was duur in aanleg, maar bleek goedkoper in onderhoud. Ook werd het onderhoud informeel toevertrouwd aan het Hoogheemraadschap. De kosten van gewoon onderhoud werd omgeslagen over elk van de zes parken. Dit leverde een minder hoog financieel risico op, ook al waren de verschillen tussen de parken aanzienlijk.

Siger Zeischka, ***Dealing with diversity: small-scale dikes in early modern Rijnland, 17th-early 19th century [Omgaan met diversiteit. Kleinschalige dijken in vroeg-modern Rijnland, 17de-vroege 19de eeuw]***

Samenvatting In dit artikel wordt onderzocht welke factoren ertoe hebben bijgedragen dat lokale waterschappen (polders) op éénzelfde landschappelijke uitdaging heel verschillend konden reageren. Meer bepaald concentreert deze bijdrage zich op enkele Rijnlandse polders in de 17de en 18de eeuw die alle in de invloedsfeer van het Haarlemmer- en het Brasemermeer lagen en daar nadelige gevolgen van ondervonden. Hoe langer hoe meer immers steeg het peil in deze twee meren die tot de kern van het Rijnlandse boezemstelsel behoorden. Door de stijging, waaraan zowel natuurlijke als menselijke en regionale als lokale factoren aan de basis lagen, kwamen de lokale waterkeringen onder druk te staan. Bovendien vergrootte de boezem omdat de veenachtige oeverlanden afspoelden terwijl turfwinning in de polders zelf ook nefaste gevolgen voor de waterkering had. Een drietal casussen worden belicht om de vraag naar de oorzaak van de verschillende reacties te beantwoorden. De betreffende polders zijn zo gekozen dat de selectie geografische, sociale, economische, institutionele waterstaatstechnische diversiteit bevat. Dat maakt een optimale vergelijking mogelijk.

Tegen de achtergrond van de steeds groter wordende uitdagingen wordt in de eerste plaats de ontwikkeling van de waterkering van de casussen bekeken. De klemtoon ligt enerzijds op technische aspecten van de waterkering zelf en anderzijds op onderhoudspraktijken. Een tweede insteek onderzoekt de rol van het regionale waterschap, het Hoogheemraadschap van Rijnland, dat zich in de 18de eeuw nadrukkelijker manifesteerde wanneer bepaalde zaken in de polder het centrale boezembeheer raakten.

De bevindingen tonen in de eerste plaats de karakteristieken van de techniek in elke polder aan: niet alleen trad nu eens wel, dan weer geen innovatie op, de wijze en het moment waarop technische verbeteringen ingang vonden verschilden al evenzeer. Voor de verklaring van die divergerende trends kunnen meerdere oorzaken aangewezen worden.

Samenvattend komt het erop neer dat de benodigde innovaties slechts gerealiseerd konden worden, wanneer aan drie noodzakelijke voorwaarden was voldaan. In de eerste plaats moest zich een gelegenheid voordoen die de introductie van innovatie mogelijk maakte. Ten tweede mochten zich geen institutionele belemmeringen voordoen. Tot slot kon technische vooruitgang slechts geboekt worden indien alle betrokken belangengroepen tot een consensus kwamen.

Abstracts in Dutch [Samenvatingen]

Jaarboek voor Ecologische Geschiedenis 2004

Henny van der Windt en Henk van Zon (themaredactie)
Mensen en dieren in het verleden

Inhoud:

end of the twentieth century, the cow, a veritable all-purpose maidservant on the farm, had become a super-specialist. The pig changed from being a supplier of fat to an efficient producer of lean meat. From the 1960s, consumer demand for cheap, lean meat ensured the success of the chicken.
Even at the beginning of the nineteenth century, scientists were looking for ways to control the productive capacities of animals. Government consultants, farmers' unions, agricultural science teachers and the cattle breeders themselves also steered these developments, in pursuit of higher profits for the farmer. Consumers with their changing demands for meat also played a role. Thanks to a sharp drop in prices, meat consumption in Belgium has risen fivefold since the mid-nineteenth century. The ratio between the different types has, however, changed drastically, such that in recent decades pork and chicken have become popular. Objections to the extensive industrialization of animal production emerged fully only from the 1970s. It became an important issue for most consumers and cattle owners during the wave of epidemics and scandals in the 1980s and 1990s. During this time as well far more legislative attention was paid to the well-being of farm animals

Cor B.A. Smit, ***Geen dierenbeulen. Omgang met slachtdieren in het Openbaar Slachthuis Leiden [No tormentors of animals. The treatment of slaughter-animals in the Leiden Council Slaughterhouse]***

Summary The role of council slaughterhouses regarding the treatment of (slaughter) animals is researched in this case-study of the Leiden Council Slaughterhouse (OSL). Reduction of cruelty to animals turns out to be an important goal. The local council unanimously supported the more humane approach proposed by involved protectors of animals. The OSL also stimulated a better treatment of animals outside the abattoir. At the same time it concealed this rude and bloody business from civilized society. Corporate culture was marked by a professional attitude regarding the killing of the animals, combined with an ethic that prohibited cruel behavior towards animals. The people concerned strongly oppose images depicting them as tormentors of animals. To them, the Islamic ritual slaughter practice crossed the line. After a while this practice too was humanized.

Henny J. van der Windt en Edo Knegtering, ***Inheemse wilde diersoorten in de Nederlandse wetgeving tussen 1860 en 1995, bestrijding, benutting of bescherming? [Indigenous species in Dutch legislation between 1860 and 1995, control, use or protection?]***

Summary We considered the development of species-specific legislation in the Netherlands on wild animals over the period 1860-1995. We focus on the importance of aesthetical perspectives, notably the appreciation of species characteristics as embodied in taxa (species groups), and ethical perspectives for this legislation. We also assessed the relative involvement of different animal groups in species specific legislation. Three objectives were defined namely 'control' , 'use', and 'protection' , based on purposes and potential levels of legally allowable taking.

Over time, the number of species under legislation increased, mainly caused by the increase of numbers subject to 'protection'. Important changes in legitimating took place around 1880, 1915, 1970, and 1995. The taxa included birds, mammals, amphibians, reptiles, fishes, bivalves, gastropods, cephalopods, insects, crustaceans, and echinoderms. Persistent differences were apparent in the relative involvement of taxa in the objectives as well as in the relative extent to which these animal groups were affected by long term trends in numbers of species subject to the objectives. Clearly, the legislator put most attention to birds, and vertebrates in general, and less to insects, absolutely and relatively. Many animal groups were not part of legislation at all.

During the period of study, arguments of use have gradually been replaced by arguments regarding 'intrinsic value' of individuals, species and ecosystems. It is concluded that the increase of the number of species under legislation can be seen as an expansion of the moral community: the change of ethical perspectives during the last two centuries caused a higher moral standard for wild animals. Besides, a species' legal status over time was most probably also influenced by the appreciation of species characteristics, such as taxon-specific characteristics and body size. Knowledge seems to play a significant but not a major role.

Eugénie C. de Bordes, ***Dierproeven, een maatschappelijke kwestie binnen de grenzen van de wet [Animal experiments: a social issue within legal bounds]***

Summary As soon as animal experimentation became a common feature of scientific research, social resistance was organised. The history of animal experiments, their legitimating and the views of the opponents are briefly touched upon. The use of lab animals has been legally regulated in the Netherlands since 1977. The number of experiments has been reduced and the welfare of the animals has improved. Current legislation is partly based on the concept of the 'intrinsic value' of animals. However, the legal obligation to keep the actual assessment of specific experiments confidential

Jaarboek voor Ecologische Geschiedenis 2003

Liesbet van Nieuwenhuyse en Dries Tys (themaredactie)
De geschiedenis van industriële technologie en vervuiling

Inhoud:

river Rhine near Arnhem. He was aware of the fact that these specimens were totally insufficient to get a good picture. Therefore data from a long period were needed.

In the last quarter of the nineteenth century more research was done, amongst others by water companies that used surface waters. The article ends with an account of the State Committee for the Preparation of Measures against the Pollution of Public Waters, set up in 1897. In its report many data are to be found, taken from all over the country. It can be seen as a good starting point for looking at the vicissitudes of the water quality in The Netherlands.

Liesbet van Nieuwenhuyse, ***Een nieuw spoor voor milieuhistorici. Historisch onderzoek naar potentiële historische bodemverontreiniging door voormalige industriële activiteiten [A fresh lead for environmental history, Historical research of latent historical soil pollution of past industrial activities: the example of the textile refinement company of De Backer-de Rudder et Cie]***

Summary Within the field of environmental history Flemish researchers did nor yet focus on the phenomenon of historical soil pollution. Nevertheless, this current problem fits very well within the discipline of environmental history. With its bleaching, printing, dyeing and mixed activities, 19th and 20th century textile finishing- activities made up a very large and heterogeneous industry. Textile finishing industry is considered a soil threatening industry because of the colours, mordants and solvents which were used. As centre of textile industry, Ghent counted many such companies. The company De Backer-De Rudder was one of those. This article wants to demonstrate how historical research combined with soil research can provide insight into industrial pollutions which started in the past.

Philippe Tomsin, ***De retrospectieve studie van buiten gebruikgestelde industriële terreinen in Wallonië [The retrospective analysis of abandoned former industrial sites in Wallony]***

This contribution contains the explanation of the method developed by the Centre d'Histoire des Sciences et des Techniques of Liege University to analyse polluted industrial sites in Wallony and to advise the reorganisation of these sites. This method includes the retrospective analysis of the pollution of such former industrial sites, in which historical, topographical and material data and approaches are combined.

Recensies

English abstracts

Jaarboek voor Ecologische Geschiedenis 2002

Inhoud:

Summary Historical narratives from the medieval period regularly refer to natural phenomena that have shocked or amazed contemporary society. Although modern scholars have repeatedly tested the accuracy of these reports, it remains unclear why historiographers felt the need to describe this type of events.

The consensus among scholars would be that their presence in historiography was closely connected to the idea that disruptions of natural order were signals of a non-human nature and that they possessed predictive power. In this article, I argue that the interest for natural events depended on factors that, until now, have rarely been the subject of research, most important of which is the genre in which the historiographers chose to tell their story. This, however, leads to the conclusion that, in most cases, writing about the natural past was little more than a marginal aspect of medieval historical writing.

Summary During royal feasts in the towns in the Bourgondian Netherlands, the landscape and spatial order of these towns was subject to different acts of 'cleaning'. The literary tradition of writers of chronicals tells us about a tradition of glamour and splendour. If this image is compared to other types of information, coming out of other types of historical sources with regard to measures concerning the actual clearing and cleaning of the streets and town squares, street repairs, security measurements and the renovation of lordly buildings, the image is nor that glamorous anymore.

By such temporary measures on the 'hygienic' level, the town council created a temporary illusion of the town, with more importance for the lordly propaganda, than for the actual concern for order and hygiene in these towns.

Pieter-Jan Lachaert, ***De Makegemse bossen. Een voorbeeld van het nut van de historische geografie voor de hedendaagse ruimtelijk ordening van Vlaanderen [The Makegem woodlands. An example of me use of historical geography in designing present-day spatial planning in Flanders]***

Summary This study analyses to which extend a historian can contribute to the present-day spatial planning in regions with a high natural value. As a case-study we consider the historical woodland-area of Makegem (south of the Flemish city of Ghent). For this area recent spatial development plans have been made that pretend to strengthen not only nature but also the cultural history in the area. The viewpoint in this study is that the history of a landscape is far more complex than the things that can be seen on historical maps of the 19th and 20th century. In order to understand the history of this region one has to recognise that earlier developments took place in the landscape and consider the constantly changing socio-economic structures in the area through the centuries.

Stefaan Blancke, ***Mens en mensaap in de Verlichting: Edward Tyson en Lord Monboddo [Man and ape during the Enlightenment: Edward Tyson and Lord Monboddo]***

Summary To a large extent the Enlightenment debate about anthropoid apes is a debate about man. The appearance of the anthropoid ape and the cosmology of the 'chain of life' inspired some thinkers to determine whether the anthropoid is human or not. In order to answer this question they needed a definition of (hu)man. This article investigates two visions which resulted in two different definitions of the anthropoid ape. According to E. Tyson he belonged to the kingdom of animals, Lord Monboddo welcomed him as a fellow- man.

Thomas Bostoen, ***De angst voor het onbekende: de coloradokever zaait paniek in Europa (1870-1914) [Fear for the unknown: the Colorado potato beetle creates panic in Europe (1870-1914)]***

Summary Although the Colorado potato beetle became a plague only after the First World War, it had already upset the European population for a few decades. As from 1870 fear grew that once again agriculture, and potato culture in particular, was threatened. This fear was born out of the disconcerting experiences in the United States. The spectacular stories that

Jaarboek voor Ecologische Geschiedenis 2001

Tim Soens en Erik Thoen (themaredactie)
Tussen politiek, economie en ecologie: waterbeheer in het verleden

Inhoud:

Summary This article argues that changes in the historical landscape cannot be studied without a thorough knowledge of the economic and social structures of the area in question. Geographically, it deals with the Flemish coastal plain, and more specifically with Zeeland Flanders adjacent to the river Scheldt, which is studied from the medieval to the early modern period. From the thirteenth century on, this area was particularly troubled by disastrous inundations followed by the loss of land. These inundations cannot be explained by natural phenomenons only. A deficient water management needs to be taken into account as well. From the twelfth century on, water management was the task of specific institutions, the 'waterschappen'. Although often praised for the quality of their work, evidence seems to suggest that the water boards' officials were mainly driven by self-interest and not by the overall welfare of the area's inhabitants. This article however, is only a prolegomenon. More research has to be done to explain the evolution of the historical landscape. This is only possible when taking into account the social structuring of the area. In this way the history of the landscape turns into ecological history, concentrating on the multiple relations between man and nature.

Summary Although some forms of water management in the Netherlands

date back as far as the Roman period, it was not until the eleventh century that a new form of reclamation activities gave rise to the development of a special technical skill in connection with a balanced set of juridical rules originating in the late Early Middle Ages on the one hand, and of a new institutionalised approach to water management on the other. In order to reclaim vast areas of mires and peat bogs for agricultural use in large parts of the Netherlands the reclaimers had to manage the water. Peat reclamation without water management is quite unthinkable. Partly because of these reclamation activities the whole water system started to change rather rapidly. From the thirteenth century onwards the so-called water boards (in Dutch: hoogheemraadschappen) were founded and water management became institutionalised. These new institutions took all kind of measures in order to reach an optimum in water management for the very dynamic water landscape of the Netherlands. Looking back, many of these time-bound measures appeared to be only short-term solutions. Furthermore, they brought about many of the present day problems in Dutch water management. In this paper the historical intermingling between cause and result concerning water management in the Low Countries is discussed on the basis of a short history of water management in the Hoogheemraadschap of Delfland near The Hague.

Tim Soens, ***Het waterschap en de mythe van democratie in het Ancien Régime. Het voorbeeld van de Vlaamse Kustvlakte in de Late Middeleeuwen [The Flemish 'water-boards' and the myth of democracy in the Late Medieval and Early Modern period]***

Summary Like any other form of organisation in history, the organisation of water management reflects the physical and social constraints of a well-defined society. Furthermore, the organisation itself influences policies pursued. From the late medieval period on, water management in the Flemish and Dutch coastal plains has been entrusted to institutions, 'waterschappen', often praised for their 'democratic' way of working, allowing all people involved to control and adjust their policy at least indirectly. But on closer examination, this assumption does certainly not apply to all of these institutions. Historical research of some late medieval and early modern 'waterschappen' round Bruges and adjacent to the river Scheldt in the former country of Flanders, shows that the organisation of these institutions reflected the property structures in the coastal plain. In this period, landed property tended to become concentrated and one has to consider whether this concentration of property and wealth influ-

enced the water management policy. In view of the huge loss of land in the Scheldt area between 1300 and 1600, this evolution may have had important ecological consequences.

Piet van Cruyningen, ***Waterbeheer, landbouw en samenleving in West-Zeeuws-Vlaanderen in de 17e en 18e eeuw [Water management and agriculture in West-Zeeuws-Vlaanderen, 17th-l8th centuries]***

Summary Between 1650 and 1750 the costs of dike maintenance in West-Zeeuws-Vlaanderen rose steeply, due to dangerous currents in the Zeeland streams, which could gradually erode the dikes and dunes. These costs were largely paid by me urban land-owners who reclaimed the land in the early seventeenth century. These landlords were not able to, make farmers pay a part of the increased costs, as this might have meant a final blow to those of their tenants who already were in trouble because of the depressed state of agriculture. The largest farmers on the other hand did not suffer much from the increasing taxes. By selling straw to the watering and by receiving a salary as member of the board of the watering they probably received more than they paid. The local power of these wealthy farmers was too strong for the landowners, who did not live in situ. As a consequence, many urban landlords sold their land to the farmers, which resulted in the creation of a wealthy landowning farmers elite.

Stephan Vanfraechem, ***'Zalm à l'hollandaise of Waalse karpers?' Goede nabuurschap tussen België en Nederland: de Waterverdragen als case-study [The 'water treaties' and the political, economic and ecological relations between Belgium and The Netherlands]***

Summary During the last quarter of the 20th century, the so-called 'water treaties' continually interfered in Belgian-Dutch bilateral relations. In Flanders, public opinion blamed the continuous postponing of a solution to mere Dutch unwillingness. This assumption however needs to be re examined. In addition to Belgian-Dutch opposition, other elements need to be taken into account, among which the Belgian inter-community relations (tensions between the Flemish and Walloon regions); the clash of economic and ecological interests (the expansion and international positions of the Antwerp and Rotterdam ports versus nature conservation); and finally the tension between national, European and global rules concerning water quality and water management. Only a combination of all these difficulties can explain the complexity of the negotiations.

H. C. Toussaint, ***Enkele slotbeschouwingen. Besturen in de polder:***

Jaarboek voor Ecologische Geschiedenis 2000

Vreemdelingen in de natuur

Inhoud:

Summary Paleobotanical research (on pollen, seeds, fruits and wood) indicates that the timescale determines whether the designation 'alien' is applicable to Dutch plants. Factors influencing the flora are climatic changes, the landscape, the flora itself, the fauna and man. The results of archaeological research on seeds arid fruits are collected and stored in the national archaeobotanical database RADAR. When the records are classified by age, it is notable that especially plants of wet meadows spread from the Iron Age (800 BC) onwards. After this period deforestation became stronger, and the resulting open landscape presumably improved migration opportunities for herbaceous plants, including meadow plants. Apparently, man promoted the natural migration of meadow plants. Many pioneers, particularly arable weeds, were introduced by man, be it inadvertently. The introduction of arable weeds started more than seven thousand years ago, when the first peasants settled in the Netherlands. They brought grain with them for cultivation, carrying with it the seeds of arable weeds. These examples from paleobotany demonstrate that concepts such as 'alien' or 'indigenous' are difficult to define, since the flora changed over time due to a number of factors, one of them being man.

This contribution gives a survey of the research on indigenous trees and shrubs in the Netherlands and Flanders. Maes has developed a method to recognise and describe authochthonous trees and shrubs in the field. Besides useful criteria pertaining to the individual tree or shrub and its habitat, historical and archaeobotanical information turn out to be very significant.

Brinkkemper is a specialist on both these latter subjects. The article focuses on the history and importance of indigenous gene material and its protection and preservation. The authors urge that the existing sources of indigenous genes be preserved and that indigenous plant material be used in the afforestation of nature protection areas and their surroundings.

Barbara C. van Dam, ***Vreemde eiken in het bos [Non-native oaks in the forest]***

Summary Oaks survived the last Ice Age in Southern Europe. In the Netherlands the first oaks established themselves about nine thousand years ago. Their history can be traced from the current geographical distribution of descendency lines of Pedunculate and Sessile Oaks. Native oaks in the Netherlands originate from oaks that grew in Spain and Italy during the last Ice Age. Descendants of the Balkan line also occur in the Netherlands, but they were imported by man, so in principle they are aliens in the Dutch forests. DNA-research (on genetic patterns) shows that the diversity within forests is very wide and that no distinction can be made between natural, indigenous forests and planted forests. Remarkably, trees that belong to various descendency lines, do not differ in a number of morphological characteristics derived from forestry. The conclusion is that descendency lines exchange genetic material, as a result of which the correlation between descendency lines (determining the genotype) and morphological characteristics (the phenotype) disappears. Individual oaks can grow very old and survive under a variety of circumstances, because the oak adapts rapidly to changes in habitat and frequently reproduces a great number of very diverse descendants. The spectre of diversity of genetic material of oaks could be preserved by maintaining a number of small forests, which can exchange genetic material and rejuvenate themselves regularly.

Piet Bakker, ***Stinzenplanten en inburgering van vreemdelingen ['Stinsen plants': native plants and established aliens]***

Summary 'Stinsen plants' are alien plants that were introduced after 1780 and never spread beyond special environments created by man, such as landscape parks and gardens near castles (some in Friesland are called 'stins', hence their name), country estates, old farmyards and parish gardens. This article describes the origin, distribution and naturalisation of this particular group of plants. Taking the plants as a starring point, the author provides a general introductory survey of the terminology regarding alien species as used by scientists and policy makers.

Petra J.E.M van Dam, ***De rol van de warande, Geschiedenis van de inburgering van het konijn [The role of the warren. History of the naturalisation of the common rabbit]***

Summary The rabbit was introduced in the Netherlands at the end of the Middle Ages. Initially it enjoyed a high status and both its fur and meat were reserved for the nobility only. Later it became a consumer article for the middle classes. The rabbit spread through warrens, from whence it became feral and developed into a plague for agriculture. The success of the rabbit may be explained in terms of biological characteristics as well as human influence. The foundation of warrens played an important role. Here the rabbit was protected against predators and fed, which was essential for its survival during harsh winters. In the warrens rabbits were selected for size for the purpose of commercial hunting, which probably changed the genetic pattern of the rabbit. This may explain why rabbits in Northern Europe are bigger than in Southern Europe, where they can survive without human interference due to the mild climate. Essential for the success of the feral rabbit was the fact that man changed the landscape over time through the expansion of agriculture, which created a habitat better suited to the rabbit.

Rob Lensink, ***Vreemde vogels gedragen zich voorspelbaar [Predictable behaviour of exotic birds]***

Summary Many bird species occur outside their natural area of distribution through intentional or unintentional human interference. Successful exotic birds increase in numbers and their dispersal becomes wider. Among native species, too, increase in numbers may go hand in hand with wider dispersal. For both groups of species, the colonisation of unoccupied territories evolves at a certain rate that is connected with characteristics of the species, such as reproduction, survival and dispersal. Since a few years mathematical models are available with which the rate of dispersal can be predicted. This contribution compares the rate of dispersal as observed in the field with the rate as predicted by one of the models. When the three mentioned parameters are measured at the front of colonisation, there is a striking similarity between the observed and the predicted rates: exotic birds behave predictably.

Jaarboek voor Ecologische Geschiedenis 1999

Karel Leenders, ***Ecologische aspecten van de middeleeuwse zoutwinning in de Delta [Ecological aspects of the medieval salt extraction in the Delta]***

Summary In the Middle Ages salt was extracted from the drowned bog in the Delta (Zeeland and surroundings). We describe how this was done and look into the ecological aspects of salt winning: the extraction of raw materials and the deposit of waste matter. All relevant literature has been maintaining for centuries that this was detrimental to the preservation of the low countries near the sea. This opinion is examined, as well as the idea that the transition in the 15th century to refining imported salt was due to the exhaustion of the silty bog layer in the delta. A model is elaborated that encompasses both aspects and describes how the agrarian use of peat bog, salt extraction and the formation of clay polders interrelated.

Jan-Willem Oosthoek en Marco Roepers, ***Beeldvorming van de vos door de eeuwen heen [The representation of the fox through the centuries]***

Summary In November 1997 a new law concerning plant and animal life was voted in me Dutch parliament. This law, which was to reduce the number of freely huntable species, was heartily welcomed by nature and animal enthusiasts. At last the fox would be protected from systematic hunting, a barbaric relict from the past according to the animal lovers. However, hunters protested vehemently and especially resented the fact that they could no longer hunt foxes, while these animals, they insisted, killed cattle and spread tapeworms and diseases like rabies. The bad reputation of the fox has a long past: This article chronologically reconstructs the sources of the negative image of the fox, using several influential texts. We also offer an explanation for the emotional reactions fox hunting causes.

Wim Ravesteijn, ***Irrigatie en koloniale staat op Java: de gevolgen van de hongersnoden in Demak [Irrigation and the colonial state on Java: the consequences of the Demak famine]***

Summary In 1848-1850, 1872 and 1902 Demak, an area in Middle Java (Indonesia), suffered severe famines caused by crop failure. The first disaster struck at a moment when the Dutch and Javanese administrations put the local population to the limit. On top of that the fertility of the region, once known for its rich rice harvest, had dwindled because of a deterioration of the water situation. Subsequently, Dutch engineers built a modern dam for irrigation. However, the situation remained precarious, possibly owing to ecological deterioration from deforestation elsewhere. After the second famine, colonial engineers built the first complete irrigational system on Java after thorough investigations. Following the third famine these waterworks

JbvEG 1998

Jaarboek 1998 van het Tijdschrift voor Ecologische Geschiedenis

Geert Castryck, Michiel Decaluwe (themaredactie)
De relatie tussen economie en ecologie gisteren, vandaag en morgen
Handelingen van de interdisciplinaire studiedagen
'Ecologische en economische geschiedenis' (Gent, 21 november 1997)
'De spanning tussen economie en ecologie' (Gent, 3 en 4 maart 1998)

Inhoud:

Isabelle Parmentier, ***Stedelijke vervuiling in de 18de eeuw - Een studie op basis van de stadsrekeningen van Ath, Charleroi en Nijvel [Urban pollution during the 18th century, A study based upon the communal accounts of Ath, Charleroi and Nivelles]***

Summary This article investigates pollution during the Ancien Régime based upon an analysis of the communal accounts of three Walloon towns : Ath, Charleroi and Nivelles. The author shows the importance of communal accounts as a source for the study of environmental history, especially when this information is confronted with that derived from other (legal, ...) sources. It is demonstrated that 18th century local authorities showed real interest in problems related to pollution. It is, however, less evident that this concern was enough to tackle these problems if one examines legal actions against those who broke the law. The conclusion is that a large variety of measures were taken to tackle pollution, depending on the time and the place.

Pierre-Alain Tallier, ***Een nieuwe geschiedenis van het bos in België van het einde van de 18de eeuw tot 1914 - Pleidooi voor een globale benadering [A new history of the Belgian woods from the late 18th century to 1914 - A plea for an integral approach]***

Summary In this article the author summarizes the major findings of his Ph.D. dissertation on the evolution of Belgian woods between the late 18th and the early 20th century, in which he refutes some earlier arguments on this subject. He stresses that the wooded area stabilized during this period and that it did not shrink under the influence of modern society. On the contrary, the Walloon industry could develop mainly because of the presence of these woods, which were privatized during the French and the Dutch period and which were, opposed to the general belief, well managed. Economy and ecology were well integrated in those days, and it can serve as an example for contemporary forestry.

Jelier A.J. Vervloet, ***Economie en ecologie in een historisch-landschappelijke optiek [The close relationship between economy and ecology, read through the history of the landscape]***

Summary Inside and outside the geographical discipline, some researchers increasingly tend towards the idea that our natural substrate is totally transformable and that our environment can be totally 'made to order'. Especially 19th century geographers followed a completely different thesis: man was totally determined by his surroundings. It is clear that these changing theoretical basic assumptions must relate to the various ways of thinking about our environment: the perception of nature through our history.

The above cannot be separated from the thought that man was and is exploiting nature. In using available natural resources, man always tried to satisfy his economical needs. This creates a link between nature and economy. One can assume that the character of this involvement is a determining factor in the way man thinks about his relation with his environment.

This contribution deals with landscape as the crystallization of this relationship between economy and ecology. Central questions are how man, during history, experienced his environment, how he dealt with it, which effect he had on this natural environment, to which landscapes this led and which landscapes will result from this relationship in the next century.

Eric Vanhaute, ***Van Malthus tot Rio - Retoriek rond economie en ecologie [From Malthus to Rio Rhetoric on economy and ecology]***

Summary A changing world creates new images of this world. Some of them are of a distinct emancipatory character whilst others legitimize existing relations. The thesis held in this article is that 'totalitarian' ecological-biological models of society a) confirm social inequality and b) gain popularity in periods of increased insecurity.

First there was Malthus, probably the most important spokesman in the period of first industrial revolution. His work is an example of how far-going social analyses are based upon apparently neutral observations such as 'under unlimited conditions population growth exceeds the growth rate of foods'. A general ecological-biological translation of social processes legitimates a status quo in the name of general interest. Nearly a century later, during the second industrial revolution, ecological-biological concepts emerge within social Darwinism. The description of social processes is based upon biological concepts. Again, an ecological-biological discourse is used to legitimize existing power structures, also in the name of general interest. The late 20th century is in many ways comparable to these two moments of acceleration. It is clear that a similar alarming-legitimizing discourse is present.

Johan Braeckman, ***Omgaan met begrensdheid - Beschouwingen over ecologie, economie en demografie [Dealing with limits Considering ecology, economy and demography]***

Summary This article looks for rational motives 'which led man to the irrational exploitation of nature. In this quest, the author comes to the conclusion that seeming ration, on a micro-scale could be completely irrational on a macro-scale and vice versa. Our growth-obsessed economy is drastically opposed to the restricted nature of our planet. This consideration is the central issue of environmental problems and is crucial in the environmental debate. The ecological capacity of our planer

allows no continued exponential growth, and the cultural capacity or the capacity at a given standard of living reaches its breaking point even sooner.

Some fundamental values which could bring man more well-being and happiness, and which will demand serious reflection by present and future policy makers, are being discussed. Are we prepared to take decisions which are against our interests, in view of the well-being of those yet to come?

Guy Quintelier, ***Mens en natuur - Een noodzakelijke conflictspanning en haar mogelijke oplossingen [Man and nature, Possible solutions for a necessary but conflictuous tension]***

Summary This contribution does not want to be a forum for yet another discussion on values but aims to present both concrete and radical solutions for the conflicting tensions between man and nature.

According to the author, every significant solution must take into consideration that the relation between man and nature is not harmonic and will always be subject to change and conflict. The reality-content, pros and cons of some known alternatives for the present capitalist waste economy are dealt with. Environmental technology, zero-growth and an ecological dictates show to be unsatisfactory. Finally this leaves us one idealistic alternative: an ecologically balanced economy, respecting the human dependence of nature. Concretely, this means aiming towards sustainability and using human labour in the production process. Here too, the question remains: are we prepared to take decisions which are against our interests, or against our supposed interests?

Isabelle Larmuseau, ***Het (milieu) recht als oplossing voor de spanning tussen economie en ecologie [Environmental law as a solution for the tension between economy and ecology***

Summary In her presentation, Isabelle Larmuseau situated and analyzed environmental legislation in function of the tension between economy and ecology. A clear classification of those legal rules relevant with respect to environmental pollution is followed by a brief presentation of some concrete legal rules and principles of justice. Regulations in which economy takes ecology into consideration are distinguished from regulations in which ecology considers economy.

The often heard criticism that the legislator no longer considers the economic impact of environmental legislation is nuanced by the author. We must not be blind for the drastic measures which must be taken. Entrepreneurial circles are, however, capable of making the authorities consider the economic impact of environmental policy. It is up to the economic actors to decide whether they

go for an economically well-considered environmental policy or whether they want to defend their economic interests. The author concludes with examples showing a real involvement of economic actors in environmental legislation.

Jan Luiten van Zanden, De markt voor natuur en milieu en de groene Kuznets-Curve [A market for nature and the environment and the green Kuznzets curve

Summary This article examines the question of whether there is a certain connection between economic growth and pollution. The first impression is that growth nearly always harms the environment and nature. Recent international comparative research however indicates that in the richer countries this unequivocal correlation disappears in favour of the reverse situation: a higher income would be accompanied by less pollution. Explaining this relationship is the topic addressed in this contribution. Central are the changing appreciation of nature and the environment. The higher income levels and urbanization degrees, the higher a clean environment and an abundant nature are valued: they become luxury consumption products. This leads consumers and the electorate in countries with booming economies to develop actions to protect nature and to clean up pollution. The next question tackled is how the political system deals with this growing demand for environmental protection. A well functioning political system will allow a policy shift effectively leading to improved environmental protection. Once started, this can lead to the prevention of further harm to the environment. Whether it will be possible to combine growth and a cleaner environment will depend on a) the power of the environmentalist movement through which the growing appreciation for the environment is made visible and b) the efficiency of the political system in realizing a combined pattern of (economic) growth and (environmental) protection.

Eckhart Kuijken, ***Van roofbouw tot duurzame ontwikkeling? - Een ecologische benadering van de relatie tussen economie en ecologie [From exhaustion to sustainable development? An ecological approach to the relation between economy and ecology***

Summary This contribution discusses the relation economy-ecology from a biological point of view, with an undertone of concern for nature conservation. The essential contributions of living species and ecosystem processes, such as photosynthesis and energy flows, are taken for granted. That is why they are so poorly appreciated in economical terms and processes, although they undergo a continued and increased pressure threatening their existence. The ever actual problems of the difficult integration of nature and environmental policy are put in a historical perspective. In contemporary society,

a western consumption economy following free market principles focusing on individual welfare, any appeal to collective care and responsibility will be in vain. Nonchalance and a failing environmental education are some of the causes. On top of that, the often difficult communication between representatives of various disciplines (economists, sociologists, engineers and biologists) hinders an ecologically integrated policy.

Aviel Verbruggen, De druk van de industriële samenleving op het milieu [The pressure of an industrial society on the environment

Summary A growing industrial system set within a limited nature necessarily leads to the conclusion that the use of nature must both improve and decrease. Changing the way in which we use nature is however a difficult social process as it requires a substantial change in mentality. So far, nature was considered as being freely accessible and usable.

It is the duty of environmental policy to manage this change. The complexity of this mission becomes clear if one considers the omnipresence of the use of nature in the daily life of citizens. On top of that, an adequate environmental policy requires instant sacrifices which will only show to be effective at a later stage. This is contradictory to the well accepted 'quid pro quo' principle, again requiring a changing mentality. In order to be both efficient and effective environmental policy needs to be based upon scientific evidence and must consider all topic related to environmental harm. This presentation focuses on those factors of social pressure which are incorporated in the MlRA - 2 report, the second Flemish report on nature and the environment.

Herman Deroo, Renaat Tijskens, Frank Van Sevencoten en Guy Quintelier, *Bijdragen van het discussiepanel aan de debatten*

Pieter Saey*, Rationaliteit, kapitalisme en wetenschap in vraaggesteld - Slotbeschouwingen bij het colloquium, 'De spanning tussen economie en ecologie' [Rationality, capitalism and science questioned - Concluding remarks on the colloquium 'tensions between economy and ecology'*

Summary The colloquium aimed to bring together scientists from different disciplines in order to reduce the mental distance between them and to obtain a more accurate insight in the tensions between economy and ecology. One can expect scientists to draw an objective picture of reality and to collaborate in finding solutions for social and technical problems. Are these objectives met? The distinct merit of this interdisciplinary colloquium lies in its undermining the credibility of Robinson Crusoe-style stories not placed in their historical context and in not underestimating the awkwardness of the current environmental problems.

Samenvattingen ***(Engels, Frans, Duits)***

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