ENVIRONMENTALLY HARMFUL SUBSIDIES

How perverse financial incentives threaten biodiversity ...

A study commissioned by the DNR • September 2009

»BIOLOGISCHE VIELFALT SCHÜTZEN« – mit Fairness und Verantwortung

»CONSERVE BIOLOGICAL DIVERSITY« – with Fairness and Responsibility

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GREEN BUDGET GERMANY (GBG) is a non-partisan non-profit organization working toward green financial policy. Our focus is on environmental tax reform, alongside other market-based environmental policy instruments such as emissions trading or dismantling environmentally harmful subsidies.

Visit our homepage at www.foes.de.

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The authors are responsible for the content of this publication.

Note: The GBG study "Environmentally Harmful Subsidies," commissioned by the DNR, is an analysis of the comprehensive literature available on environmentally harmful subsidies and financial incentives. It presents case studies from around the world and makes proposals on dismantling subsidies. No original research was however done; the literature was evaluated and sources have been cited without scientific corroboration of the data. We therefore make no guarantee of correctness or completeness.
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[1] Front page photo credits: Benjamin Simmes; Pixelio/Claudia Hautumm; Nani Gois; Anja Eichen

> *"A typical American taxpayer forks out at least $2000 a year to fund perverse subsidies and then pass another $2000 through increased prices for consumer goods and services or through environmental degradation."*
>
> Dr. Norman Myers, former White House advisor, Blue Planet Prizewinner 2001 und author of Perverse Subsidies: Taxes Undercutting Our Economies and Environments Alike[2]

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[2] Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike, International Institute for Sustainable Development, p. 4

A. ABSTRACT

The global problem of biodiversity loss is exacerbated by many direct and indirect environmentally harmful subsidies (EHS), which cause a great deal of damage to rainforests, fisheries and agricultural land. Similarly, the nature of the transfer of wealth from the wealthy North to the poorer South often has a significant negative environmental impact. According to the Convention on Biological Diversity (CBD), so-called "perverse subsidies" are a policy or practice that encourages, either directly or indirectly, resource uses leading to the degradation of biological diversity. The OECD defines as perverse subsidies "all kinds of financial supports and regulations that are put into place to enhance the competitiveness of certain products, processes or regions, and that, together with the prevailing taxation regime, (unintentionally) discriminate against sound environmental practices." UNEP estimates that EHS are worth between USD 0.5 to 1.5 trillion per year[3] - in OECD countries, farming subsidies alone are worth more than USD 381 billion - and has called for their rapid dismantling.[4]

The meeting of U.N. Contracting States to the COP9 "Convention on Biological Diversity" (CBD)[5] in Bonn in May 2008 under the German Presidency must finally grasp the opportunity to take concrete steps to reduce perverse subsidies. Article 10 a) of the CBD incorporates a clause calling on the convention parties to "integrate consideration of the conservation and sustainable use of biological resources into national decision-making."

Time is of the essence. Global extinction rates are a thousand times higher than the natural rate. In Germany alone, around 100 hectares of land are lost daily to the construction of residential areas and infrastructure.[6] If today's trends are not reversed, the destruction of habitats and the effects of climate change could result in the extinction of 1.5 million species of flora and fauna in the next 25 years. The European Union and the German government value biodiversity loss - extremely difficult to price or quantify - at between 16 and 64 billion Euros per year - considerably more than the Gross World Product!

Kjellingbro and Skotte estimate that EHS amount to more than half of all subsidies worldwide, and that the greater proportion of these are used to subsidise agriculture[7]:

Billion US $	Total conventional subsidies	EHS out of total conventional subsidies
Agriculture	376	207
Energy	85 - 244	64 - 216
Road Transportation	225 - 300	110 - 150
Water	69	50
Forestry	35	35
Fisheries	20	19
Total	810 - 1044	485 - 677

The agricultural sector is an important recipient of EHS, particularly in the EU and the USA. OECD research suggests that subsidies account for one third of income in the agricultural sector - yet only 4 per cent of these subsidies can be regarded as environmentally advantageous, and more than two thirds pose a threat to biodiversity. The export subsidies of OECD countries not only distort international competition and compromise the development of poorer states in the South, but also encourage intensive agricultural methods. For example, the subsidisation of meat production in the EU has resulted in the massive expansion of soya bean production in Brazil and Argentina used as cattle feed for the production of beef consumed in Europe. In much the same way, subsidisation of biofuels in the EU has indirectly caused significant environmental damage in rainforest areas of Southeast Asia and South America, due to the effective subsidisation of palm oil plantations. Even today, approximately 40 per cent of the entire EU budget (about 44 billion Euros) is used to subsidise agriculture. Germany's share in this total amounts to 9.3 billion Euros, with agriculture receiving a further 1.7 billion Euros in national subsidies as well.

Similarly, the USA is planning to subsidise agriculture to the tune of 197 billion Euros in 2008, even though the WTO denounced its cotton subsidies as anti-competitive in December 2007.

Perverse subsidies are also a significant issue in the fisheries sector, indeed it is the most strongly protected and economically encouraged branch of trade. According to UNEP,

3 UNEP, 2004: Economic Instruments in Biodiversity-related Multilateral Environmental Agreements, p. 79

4 Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

5 The Convention on Biological Diversity http://www.cbd. int/convention/convention. shtml

6 BMU, 2007: Mach mal Platz! – Flächenverbrauch und Landschaftszerschneidung, URL: http://www.bmu.de/publikationen/bildungsservice/flaechenverbrauch/arbeits blaetter/doc/39322.php

7 Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy, p. 2

subsidies currently account for almost the half of total turnover in the fisheries industry, with hugely detrimental results. It is estimated that around 74 percent of fish stocks are completely exploited or over-fished and that national fishing fleets are 2.5 times larger than they should be to achieve sustainable development. What is more, environmentally damaging deep-sea fishing is subsidized to the tune of 152 billion Euros per annum. In this sector, it is imperative that subsidies are reduced - especially for high performance fishing fleets - and controls to prevent illegal fishing are improved, as well as to downsize the fleet capacity and to promote alternative incomes in other economic fields.

A number of direct and indirect fiscal measures encourage the deforestation of woodland habitats vital for safeguarding biodiversity. This can amount to the subsidisation of timber companies and saw mills, or the building of roads to enable access to rainforest areas for slash and burn cultivation. Dam construction can also result in serious reductions in biodiversity and is subsidized by national governments and by international emissions trading. In such cases it is necessary to strike a balance between environment and economy, taking CO_2 free electricity generation, the costs of flood defences, and methane build-up in the reservoir into account. A positive example of biodiversity protection is Brazil's system of municipal fiscal transfer, which takes ecological indicators (ICMS-E) into account. In the federal state of Parana, for instance, the proportion of local protected areas has increased by 192 percent within 10 years. This is a meaningful example of how crucial financial incentives can be used in the conservation of biodiversity, as well as in its loss. Environmental policy is increasingly coming to be regarded as a benefit and not a burden.

Energy and transport subsidies, including subsidisation of infrastructure, are very high in Germany. According to a survey of environmental and conservation organisations, perverse subsidies in the 2006 federal governmental budget were estimated to be worth 34 billion Euros. Commuter tax allowances and higher property taxes in cities are incentivising urban sprawl and the segmentation of living space. In addition, Germany pays out more than one-third of all competition-distorting subsidies for business in the European Union, worth 20.2 billion Euros.

Projects leading to significant biodiversity loss continue to receive funding. The demolition of the last large freshwater mudflat in Hamburg (the last Süßwasserwatt) - the Mühlenberger Loch - is just one example of this. The area was the last large stretch of mudflat between Hamburg and the Elbe estuary and it was valued as both a resting ground for migratory birds and as a foraging ground for brooding birds. It cost the federal government and the German states more than 2.3 billion Euros to destroy it and make way for an extension to the Airbus factory.

It is important that a discussion of subsidy policy concentrates on ways of dismantling EHS, on their restricted validity in terms of time, and on their continuous re-examination. Total ecological costs must be calculated as an integral part of this process, and lobby interests must be overcome. When tackling global subsidies, national interest must be put aside and the sustainable, long-term value of biodiversity prioritised.

The COP9 offers us all the chance to achieve real and binding progress on the way to reducing and eventually turning the tide of biodiversity loss. A great number of EHS must be dismantled if we hope to reach the global environmental targets set for 2010.

B. INTRODUCTION

In 2002 at the World Summit on Sustainable Development in Johannesburg, a commitment was made to drastically reduce global species extinction by 2010. The German federal government, in its national biodiversity strategy of November 2007, also agreed to stop biodiversity loss by 2010 and afterwards even reverse the negative trend.

In reality, the rate of plant and animal extinction is 1000 times higher today than it was in pre-historic times, before humans roamed the Earth. If we do not take action, current biodi-versity loss will again increase tenfold by 2050. There is no sign of trend reversal any-where on Earth. Every two seconds, primal forest the size of a football field is lost. In Germany from 2000 to 2004, an area of around 114 hectares was lost daily to housing or infrastructure construction.[8]

For land-based ecosystems, changes in the landscape, such as the transformation of forest to fields, is the main cause of biodiversity loss. For ocean ecosystems on the other hand, fishing - particularly over-fishing - is the main force behind loss of biodiversity.

Often, subsidies and perverse financial incentives contribute to the breakneck pace of biodiversity loss. The United Nations Environment Programme (UNEP) estimates a global expenditure of 500 billion to 1.5 trillion US dollars[9] annually for environmentally harmful subsidies and demands their speedy dismantling. Myers also arrives at an estimate of 1.45 trillion dollars[10] (see table 1).

Most of these "perverse subsidies," as financial incentives for environmental destruction are called, go toward agriculture, transportation/ energy, fishing, forestry and waters. In the OECD member states, agricultural subsidies alone add up to over 240 billion dollars annually - one third of the total worth of agricultural products worldwide.[11]

Global agricultural subsidies are estimated at 575 billion dollars; 460 billion have negative environmental impacts. Road traffic is also subsidized to the tune of over 600 billion dollars; more than two-thirds of which have been classified as perverse subsidies[12]:

If the current trend is not stopped, globally 1.5 million animal and plant species will be threat-ened by extinction within the next 25 years - because their habitats were destroyed and as a consequence of climate change[13].

Environmental organizations have long demanded massive reductions of annual subsidies in the energy, transportation, wood and agricultural sectors. Instead, a global network of nature reserves should be set up. This task would require far fewer funds than are currently spent on subsidies.

The ninth meeting of the UN Conference of the Parties (COP9) on the Convention on Biological Diversity (CBD), chaired by Germany in May 2008 in Bonn, again missed the opportunity to dismantle environmentally harmful subsidies.[14] The previous conference, COP8, was also unable to reach consensus on an instrument to fund the protection of biodiversity and the reduction of harmful incentives, in particular on the issues of primal forests and deep-sea fishing. The USA even announced that they would cut their financial aid for the Global Environment Facility by 50 percent. The Federal Republic of Germany spends 95 million euros annually on direct measures to implement the CBD in partner countries.[15] With its "Business and Biodiversity Initiative", the German federal government is also trying to encourage the private sector to take responsibility for biodiversity in their activities.[16]

The mandatory reduction of environmentally harmful subsidies offers an opportunity not only to dismantle perverse financial incentives that damage nature, but also to make more funds available for the global protection of biodiversity. This can only be successful if, in a win-win situation, the economic and social advantages of the general good are put above national lobby interests and North/South justice prevails.

8 BMU, 2007: Nationale Strategie zur biologischen Vielfalt, p. 17

9 UNEP, 2004: Economic Instruments in Biodiversity-related Multilateral Environmental Agreements, p. 79

10 Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike, p. 8

11 Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

12 Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike, International Institute for Sustainable Development, p. 8; http://www.brocku.ca/envi/db/envi1p90/readings/Perverse%20Subsidies% 20Executive% 20Summary.pdf

13 DNR, press release from 31.8. 2007

14 Cf EU-DNR-Kooperation, 2007, URL: http://www.eu-koordination.de/index.php?page=28

15 BMU, 2007: Nationale Strategie zur biologischen Vielfalt, p. 106

16 BMU, 2007: VN Übereinkommen über die „Biologische Vielfalt", 9. Vertragsstaatenkonferenz im Mai 2008 – Deutschlands „Business and Biodiversity Initiative", URL: http://www.bmu.de/naturschutz_biologische_vielfalt/downloads/doc/40622.php

Table 1: SUBSIDIES: OVERALL TOTALS *(billion $ per year)*

Sector	Conventiona Subsidies*	Environmental Externalities documented/ quantified	Total Subsidies (range)**	Perverse Subsidies (range)**
Agriculture	325	250	575	460 (390-520)
Fossil Fuels/Nuclear Energy	145	***	145	110
Road Transportation	558	359	917 (798-1041)	639
Water	60	175	235	220
Fisheries	22		22	22
Totals (rounded)	**1,110**	**785**	**1,895**	**1,450**

** Subsidies of established and readily recognized sorts, including both direct financial transfers and indirect supports such as tax credits.*

*** Ranges: some of these estimates are supported by ranges: for details, see text. In some instances, estimates are not inserted because there is simply too little agreement even about ranges.*

**** Regrettably it has not been possible to come up with even a reasonably agreed estimate for this value: the data are too patchy and disparate.*

The debate on environmentally harmful subsidies is not new. The international community already agreed in 1992 at the Earth Summit in Rio de Janiero to[17]:

> *"Remove or reduce those subsidies that do not conform with sustainable development objectives;*
> *Reform or recast existing structures of economic and fiscal incentives to meet environment and development objectives;*
> *Establish a policy framework that encourages the creation of new markets in pollution control and environmentally sounder resource management;*
> *Move towards pricing consistent with sustainable development objectives."*

Many international agreements on the protection of biodiversity demand the dismantling of perverse subsidies. In Germany, even applying the narrow definition of subsidies used in the federal subsidy report, year after year hundreds of billions of subsidy funds are transferred to businesses and private households. In its 2001 Environmental Performance Review, the OECD came to the conclusion that around 35 percent of German subsidies could be considered harmful to the environment[18].

One goal on the political level should be to shape international subsidy policy so that it is sustainable and also serves the environment rather than the reverse; shortsighted policy catering in the main to economic interests.

This GBG study commissioned by the DNR is an analysis of the comprehensive literature available on environmentally harmful subsidies and financial incentives. We present case studies from around the world and make proposals on dismantling subsidies. No original research was however done. The literature was evaluated and sources have been citied without scientific corroboration of the data.

PERVERSE SUBSIDIES

As a consequence of the debate on environmentally harmful subsidies, the term **"Perverse subsidies / "Subsidios perversos"** emerged in English and Spanish language.
The UN introduced a definition by which perverse subsidies are a specific form of economic incentives. These incentives support - directly or indirectly - non-sustainable behavior and the reduction of biodiversity. The definition includes not only subsidies, but also all governmental actions, that don't sufficiently take the existence of external environmental costs into account.
Abolishing perverse subsidies can therefore have positive effects on the protection, and the sustainable use of biodiversity for our planet.
UNEP estimates that the perverse subsidies amount to 500 billion to 1.5 trillion US-Dollars worldwide - which is more than the GNP of many states.

[17] UNDESA, 2007: Agenda21, Charter 8: Integrating Environment and Development in Decision-Making, URL: http://www.un.org/esa/sustdev/documents/agenda21/english/agenda21chapter8.htm

[18] BMU, 2002: Ökologische Finanzreform - Bilanz und Perspektiven

C. ENVIRONMENTALLY HARMFUL SUBSIDIES - A DEFINITION

1. SUBSIDY TERMINOLOGY - DEFINITIONS AND EXAMPLES

Since "neither in scientific literature nor in practice is there a clear and universal definition of subsidies"[19] it is necessary to first give an indepth explanation of the terminology we use. First we shall set three distinguishing criterion by which we can differentiate different subsidy terms.[20] We shall then introduce the definition of subsidy most pertinent to this study. It is important to remember that different subsidization terminology "mirrors ...different political and academic beliefs about the function of the state in economic affairs"[21].

According to Fritzsche et al., the three following criterion are crucial to differentiating sub-sidy terminology:[22] 1. The set of subsidy recipients and donors allowed by the definition, 2. the characteristics of the subsidy payments and 3. the form of the subsidy.

Economists usually use a rather broad definition of subsidy which can be summarized as follows: A subsidy is support characterized by specific features.[23] The subsidy donor can be any national, international or supranational organization. Other possible donors are organizations that distribute monies as intermediaries of public bodies and authorities such as for example the publically owned bank Kreditanstalt für Wiederaufbau (KfW). In the end, what is decisive is that subsidies are granted at the expense of the general public[24]. In economic theory, subsidy recipients are commercially-oriented public and private businesses.[25] There are three main characteristics of subsidy payments: First, they are payments that are intentionally available only to a certain subset of society; they are by nature discriminating. Second, there is no direct return; or the conditions for the transfer of the support diverge from usual market conditions.[26] Third, in order to receive subsidies, the recipient must act in a certain way. It is irrelevant whether recipients would have acted in the same manner if they had not received the subsidy.

There are a variety of subsidy forms that appear relevant from an environmental point of view[27]: First; financial government support for businesses without direct market returns. Such support falls under the narrow definition of subsidies and is provided in order to fulfill a particular public interest. These subsidies can take the form of financial aid or of tax concessions. When they take the form of tax breaks, the question arises of "model" taxation - or how to differentiate between appropriate taxes inherent to taxation laws and selective tax concessions.[28] A broader definition of subsidies also includes indirect subsidies. In scientific litera-ture, these are also known as "implicit subsidies"[29]. A further form of subsidization that plays a large role in academic environmental discourse is so-called "hidden subsidies"[30]. These refer to the failure of internalizing the external costs of certain actions.

The following table, created by Meyer, illustrates subsidy terminiology using energy subsidies as an example:[31] (see table 2).

The institutional international definitions of subsidies in the energy sector apply yet another definition of subsidies and have only marginal differences. In the following table, the most important defining features in this area are illustrated abstractly[32] (see table 3).

19 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.14

20 Fritzsche, B. et al., 1988: Subventionen – Probleme der Abgrenzung und Erfassung

21 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.28

22 Fritzsche, B. et al., 1988: Subventionen – Probleme der Abgrenzung und Erfassung

23 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.15

24 Nieder-Eichholz, M., 1995: Die Subventionsordnung – Ein Beitrag zur finanzwissenschaftlichen Ordnungspolitik, p.24

25 The involvement of private investors is controversial. It is dependent on the assessment of the criteria used by the authors. Cf.: Hansmeyer, K. H., 1977: Transferzahlungen an Unternehmen (Subventionen), in: Neumark, F. (Hrsg.): Handbuch der Finanzwissenschaft, 3. Auflage, Band 1, Tübingen, pp. 959-996; und Nieder-Eichholz, M., 1995: Die Subventionsordnung – Ein Beitrag zur finanzwissenschaftlichen Ordnungspolitik, p.26

26 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.16

27 Simonis, Udo, E., 2003: Öko-Lexikon, p. 186/ 187

28 See e.g. Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.31 and Meyer, Bettina, 2006: Subventionen und Regelungen mit Subventionsähnlichen Wirkungen im Energiebereich

29 Cf.: OECD, 1996: Subsidies and Environment – Exploring the Linkages, p.44; OECD, 1997: Reforming Energy and Transport Subsidies; OECD, 1998: Improving the Environment through Reducing Subsidies, Vol. 1 u. 2, p. 9; Meyer, Bettina, 2001: Ökologisch kontraproduktive Subventionen im Energiebereich. Diskussionspapier/ Dokumentation und Hintergrundmaterial zu Vorträgen, Aktualisierte und erweiterte Fassung, Februar 2001; oder Lechtenböhmer, S. et al., 2004: Braunkohle – ein subventionsfreier Energieträger?, Kurzstudie im Auftrag des Umweltbundesamtes

30 Simonis, Udo, E., 2003: Öko-Lexikon, p. 186

31 Meyer, Bettina, 2006: Subventionen und Regelungen mit subventionsähnlichen Wirkungen im Energiebereich, p.8

32 Meyer, Bettina, 2006: Subventionen und Regelungen mit subventionsähnlichen Wirkungen im Energiebereich, p.7

Table 2:

Subsidies with budgetary effect			**Subsidies without budgetary effect**
(A) Expenditure: Financial support Real transactions (cash, procurement subsidies and price reduction subsidies) Reduced interest Guarantees, warrantees, shareholdings	**(B) Income: Tax concessions**	**(D) Non-internalized external costs of energy consumption**	**(C) Regulations that act as subsidies** Competition distorting government regulations provide advantages to some
Examples in the energy sector			
- Hard coal subsidies - Support programs for renewable energy sources and energy efficiency - R & D (esp. nuclear and renewable energy) - Preparation for and renaturation of opencast mining - Partial financing and risk sharing of the disposal and transport of atomic waste - Guarantees / loans for power plants - Subsidies / loans to finance energy infrastructure	- Energy tax breaks - Income tax breaks (commuters' allowance, home buyers' grants) - Tax breaks – provisions for the nuclear power industry	- Greenhouse gas, pollutant and non-material emissions - Area, ecosystems - Process chain (processes before and after production) - Liability limitation of the nuclear power industry	- The *Jahrhundert-vertrag* contract in favor of hard coal - Imperfect competition in the electricity sector - Renewable Energies Act - Emissions trading advantages for certain energy carriers - Trade restrictions
Subsidies in the narrow sense of the term		**Broader definition of subsidies**	

2. DEFINITION OF BIODIVERSITY

According to Simonis, biodiversity is "the diversity of life forms in the biosphere including all variants and their interrelations."[35] This includes the following three categories: 1. ecological diversity, that is the diversity of ecosystems; 2. the diversity of organisms, that is species and genera; and 3. genetic diversity. There is wide variation in the distribution of biodiversity. Half of all species are found on around two percent of the Earth's surface, so-called hotspots - usually in tropical developing countries.[36]

On the international level, biodiversity is protected under the United Nations Convention on Biological Diversity (CBD). The CBD came into force in 1993 and has to date been ratified by 190 states[37].

3.ENVIRONMENTALLY HARMFUL SUBSIDIES

Extrapolating from the broad definition of biodiversity given above and a definition of subsidies that makes sense from an environmental point of view, we can assume that subsidies that are harmful to the environment in general also have a negative impact on biodiversity. The OECD defines environmentally harmful subsidies as "all kinds of financial supports and regulations that are put into place to enhance the competitiveness of certain products, processes or regions, and that, together with the prevailing taxation re-

Table 3:

UNEP/ OECD/ IEA[33]	**EU**[34]
Any government action that concerns primarily the energy sector that	All measures that offer direct or indirect advantages to energy sources, in particular:
• lowers the cost of energy production	• reduce costs for consumers and producers
• raises the price received by energy producers	• maintain producer prices higher than market prices
• lowers the price paid by energy consumers	• maintain consumer prices below market prices

[33] UNEP/ OECD/ IEA, 2002: Reforming Energy Subsidies. An explanatory summary of the issues and challenges in removing or modifying subsidies on energy that undermine the pursuit of sustainable development, p. 9

[34] EU 2002: Commission Staff Working Paper. Inventory of public aid granted to different energy sources, p. 4

[35] Simonis, Udo, E., 2003: Öko-Lexikon, Verlag C. H. Beck, München, p. 35; see also: Convention on Biological Diversity, 1992, Anhang I, URL: http://www.cbd.int/convention/articles. shtml?a=cbd-a1

[36] Simonis, Udo, E., 2003: Öko-Lexikon, Verlag C. H. Beck, München, p. 36

[37] Convention on Biological Diversity, 2006: Year in Review 2006, p. 9, URL: http://www.cbd.int/doc/reports/cbd-report-2006-en.pdf

gime, (unintentionally) discriminate against sound environmental practices."[38] This includes subsidies of all forms that cause a reduction of biodiversity[39].

D. THE ECONOMIC "VALUE" OF BIODIVERSITY

Human beings are dependent upon biological diversity. It provides us with food, medicine and raw materials as well as other indispensible goods and services. The forests for example provide us with wood, enrich the air with oxygen, purify water, prevent erosion and flooding, keep our climate moderate and transform waste into food or raw materials such as oil and gas.

In contrast to goods that can be bought and sold for money, many ecosystem services have no obvious price value since they are not traded on the market. Financial markets therefore ignore the importance of biodiversity and natural processes to human well-being. New methods are being used to assign a monetary value to certain services such as rest or clean water. The deterioration of ecosystem services could be slowed down considerably or even reversed if the true economic value of these services were taken into account in decision making processes.

Measures to better conserve biodiversity also support more human well-being in general by preserving of the numerous uses of ecosystems.

Changes in ecosystems also have a social component because the poorest people in the world, who are least able to adapt to these changes, are hit hardest.

Of course it is difficult to assign a monetary value to biological diversity. The EU Commission estimates the value of goods and services provided annually by ecosystems across the globe at 26 trillion euros.[40] That is double the value of what humans produce each year!

In its national strategy, the German federal government quotes studies that estimate the value of the annual use of all ecosystems at between 16 and 64 trillion dollars.[41] More than half of medicaments in use in Germany today are based on medicinal plants or their substances. Global sales of medicaments based on plants total around 20 billion US dollars annually.[42] Globally, 10,000 to 20,000 different species of plants are used for these medicaments.

Before the Earth Summit in Johannesburg, an international team of scientists calculated the cost-benefit ratio of environmental protection and economic use. They came up with a ration of 1:100. A global land and water conservation program would cost around 45 billion US dollars annually. In contrast, the research team estimated the benefit to be up to 5,200 billion dollars each year.[43] Economically and environmentally perverse subsidies thus amount to 950 to 1,950 billion US dollars each year. The research team also examined 300 case studies, only 5 of which integrated not only the most important market goods, but also "natural services" not on the market such as protection against erosion or the greenhouse effect.

From the tropical forests of Cameroon to the Canadian wetlands or coral reefs in the Philippines, all studies came to similar conclusions. In short, land conversion and intensive private use can be very profitable. However if you also factor social and global aspects into the bill, the bottom line is: conservation always pays.

For example, converting mangrove forests into prawn farms can be profitable for a private business; however, intact mangrove forests also provide wood, are the nursery for deep-sea fish with commercial value and offer protection from storms. A long-term analysis for the global economy reveals that a much higher "profit" is gained by environmentally-friendly use.

These scientists estimate the "running costs" to humankind for the transformation of natural ecosystems shall rise annually by approximately 250 billion dollars. Depending

38 OECD, 1998: Improving the Environment through Reducing Subsidies, Vol. 3, Part 1, p. 7

39 OECD, 2002: OECD Workshop on Environmentally Harmful Subsidies - What makes a subsidy environmentally harmful: Developing a checklist based on the conditionality of subsidies, p. 6

40 EU, 2004: Verlust an biologischer Vielfalt: Zahlen und Fakten, press release of the European Commission from 9.2.2004, URL: http://europa.eu/rapid/pressReleases Action. do?reference=MEMO/04/27&format=HTML&aged=1&language=DE&guiLanguage=fr

41 BMU, 2007: Nationale Strategie zur biologischen Vielfalt, p. 16

42 BMU, 2007: Nationale Strategie zur biologischen Vielfalt, p. 17

43 Vista Verde News, 2002: Survey: Naturschutz zahlt sich aus, URL: http://www.vistaverde.de/news/Natur/0208/08_naturschutz.htm

on the use of biodiversity, these ecosystems could produce goods and services valued at 4,400 to 5,200 billion dollars per year - a cost-benefit ratio of 1:20.

WHY DOES BIODIVERSITY LOSS NEVERTHELESS CONTINUE?

In each country, a small minority of citizens and international companies profit from clear-cutting, overfishing, or transforming forests into farmland. They can make extraordinarily high profits and then, like locusts, move on. The majority of the population however makes their livelihood from the sustainable use of biological resources and are the losers of this destruction of the natural basis of our existence spurred on by perverse subsidies.

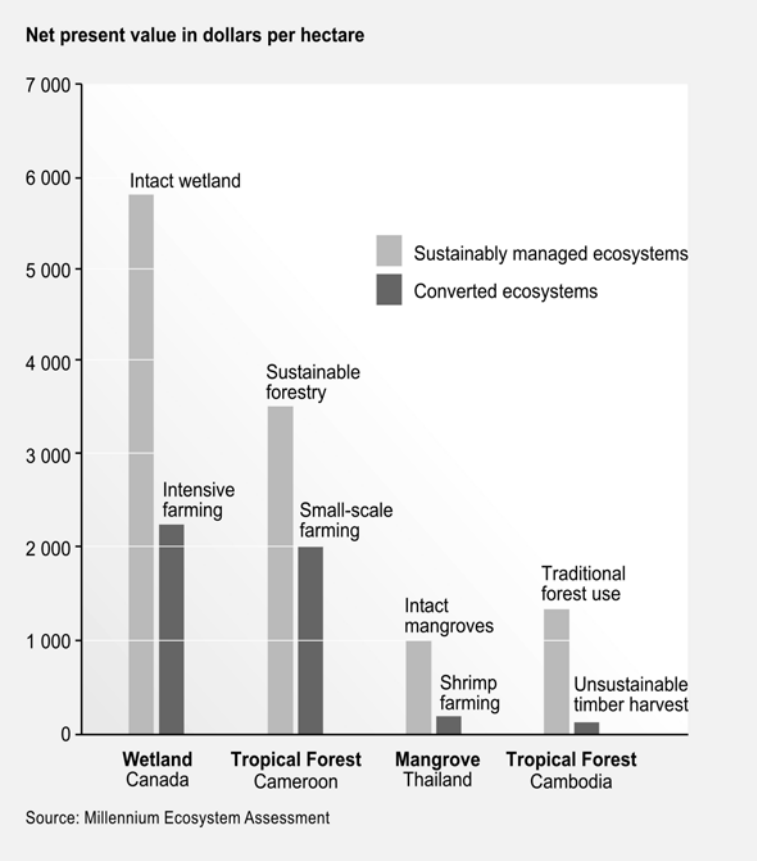
In the Millennium Assessment Report as well, the worth of different uses of land was assigned a monetary value. The report comes to the conclusion that the sustainable use of ecosystems has a much higher value than aggressive management, clear-cutting or overfishing.

According to the Stern report, the conservation of tropical rainforests is the most economical climate protection measure.[44] Nevertheless, biodiversity is still rarely examined or researched comprehensively from an economic point of view.

The meeting of environment ministers during the 2007 G8 summit therefore agreed to commission a comprehensive global study on the "economic significance of the global loss of biological diversity" to compare the costs of the conservation of biological diversity with the consequential costs of biodiversity loss and economic use[45].

EXAMPLES OF THE ECONOMIC VALUE OF BIODIVERSITY[46]:

- Cameroon: The conservation of tropical rainforest and the sustainable use of trees has social, economic and global advantages amounting to 3,400 dollars per hectare - in particular due to erosion protection and carbon sequestration. Conversion for food production brings in 2,000 dollars per hectare. In an overall economic analysis, least profitable is conversion for oil plantations at only 1,000 dollars per hectare. Furthermore, private profits from the latter are the result of high subsidies from the buyer countries.
- Thailand: The conversion of mangrove forests into prawn farms creates profits of up to 200 dollars per hectare. The economic use of wood, fish nurseries, flood protection and climate protection is valued at between 1,000 and 35,000 dollars per hectare.
- Canada: The drainage of wetlands to create pastures creates a profit of 2,400 dollars per hectare. The economic use of the wetlands for hunting, fishing and carbon sequestration is valued at more than 5,800 dollars per hectare.



[44] Der Standard, 2007: Straßenbau im Amazonas-Gebiet bedroht das Weltklima, URL: http://derstandard.at/?url=/?id=3119891; see also: Stern, N.; 2006: The Economics of Climate Change – The Stern Review, URL: http://www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm

[45] BMU, 2007: Potsdam Initiative zur biologischen Vielfalt 2010, 15.-17. März 2007, URL: http://www.bmu.de/files/pdfs/allgemein/application/pdf/potsdam_initiative_de.pdf

[46] Greenfacts, 2007: Box 2.2. Economic Costs and Benefits of Ecosystem Conversion, URL: http://www.greenfacts.org/en/biodiversity/figtableboxes/2022-npv.htm

E. CLIMATE-UNFRIENDLY SUBSIDIES IN THE ENERGY SECTOR

The climate catastrophe has an immense impact on biodiversity and on global ecosystems. According to a study published in January 2004 in the journal Nature[47], by 2050, climate change may have caused the extinction of one third of all species world-wide. Already climate change has had numerous and noticeable effects on biodiversity and on ecosystems. This is true not only of the receding ice in the polar regions and alpine areas, but also of breeding behavior in domestic birds. Should climate change become more extreme in the future, in the majority of the world's regions the damage to our ecosystems shall most likely outweigh possible benefits such as a longer growing season. Anthropogenic climate change will intensify the risk of the extinction of species, floods, drought, the decline of animal populations and the spread of illnesses. For these reasons, all subsidies and incentives that harm the climate are of key importance to biodiversity.

Table 4: Climate-unfriendly and environmentally harmful subsidies in Germany 2006[48]:

Subsidy (Tax concessions and financial aid)	Value (€)	Proposal for phase-out	Short-term dismantlement possible (€)
Transportation			
Lower tax on diesel (47 ct/l) compared to lead-free gasoline (65 ct/l)	5,85bill.	Partial alignment with tax on regular gasoline (raise diesel tax by 8 ct/l)	2,62bill.
Tax exemption for kerosene	8,7 bill.	Kerosene tax in domestic air traffic	400 mill.
Value added tax exemption for domestic air traffic	500 mill.	Dismantle at least for domestic flights	500 mill.
Entfernungspauschale	1,5 bill.	Commuter tax allowance lower the flat rate from 30 to 10 ct/km	1 bill.
Tax concession from flat tax on privately used company cars	500 mill.	Dismantle	500 mill.
Cole and nuclear energy			
Hard coal subsidies	2,7 bill.	Reduction after 2008	1 bill.
Lower or no tax on hard coal	2,2 bill.	Step by step raise in tax on coal not used to produced electricity, introduced Aug. 1, 2006	200 mill.
Lower or no tax on lignite coal	1,5 bill.		
Tax exemption for nuclear fuels	1,63 bill.	Dismantle if so-called nuclear consensus is recidivated	0
Support for lignite coal mining	200 mill.	Dismantle	200 mill.
Tax concessions for nuclear power liabilities	800 mill.	Limitation	400 mill.
Tax concessions for energy-intensive businesses			
General tax concessions (reduction for manufacturing industry and agriculture and forestry sectors to 60% of the eco-tax)	1,59 bill.	Dismantle	1 bill.
- for energy taxes on oil and gas			
- for electricity tax	1,85 bill.		
Tax caps (concessions for businesses with considerable burdens)	240 mill.	More targeted tax laws including basing taxation on the criteria of the EU directive on energy taxation for energy-intensive sectors	
- for energy taxes on oil and gas			
- for electricity tax	1,7 bill.		
Tax exemptions for energy-intensive processes	69 mill.	Dismantle	69 mill.
Tax concessions for seaports	25 mill.	Dismantle	25 mill.
Tax concessions on mineral oil tax agriculture and forestry sector (biodiesel)	135 mill.	Dismantle	135 mill.
Tax exemptions for use of mineral oil for purposes other than energy (e.g. plastics and cosmetics)	1,9 bill.	Phase out throughout EU	0
Tax exemptions for mineral oils consumed in the production of mineral oil	400 mill.	Phase out throughout EU	0
Gesamt	**34 bill.**		**8,05 bill.**

[47] Nature, 2004: Biodiversity Conservation: Climate Change and Extiction Risk, URL: http://www.nature.com/nature/journal/v430/n6995/full/nature02718.html

[48] Prange, Florian/ Ahlswede, Jochen, 2006: Schwarzbuch Klimaschädliche Subventionen, p. 7

In Germany, Green Budget Germany, BUND, NABU, the German NGO Forum on Environment & Development and the Hamburg Climate Protection Foundation among others published an up-to-date far-reaching analysis, the Schwarzbuch klima- und umweltschädliche Subventionen und Steuervergünstigungen (Black Book of subsidies and tax breaks harmful to the climate and the environment).[49] It claims that each year, negative incentives worth more than 34 billion euros are created. The strongest incentives are the exemption from the eco-tax (8 billion euros), the low taxation of diesel as compared to gasoline (6 billion euros), the subsidization of hard coal (2.7 billion euros), as well as write-offs for commuters (1.5 billion euros) and privileges for company cars (see table 4).

In a study by Meyer (2006) on energy subsidies in Germany, a broad definition of subsidies is used that includes not only financial aid and tax breaks but also government regulations that act as subsidies as well as the failure to internalize external costs. The sum of all energy subsidies thus defined adds up to 133.6 billion euros for the year 2003 - subsidies for nuclear power and fossil fuels are way above average.

Because of its quantitative importance and the reform currently being implemented, we would like to take another look at the development of German subsidies for coal. Since the mid 1960s, coal mining has been supported by 130 billion euros.

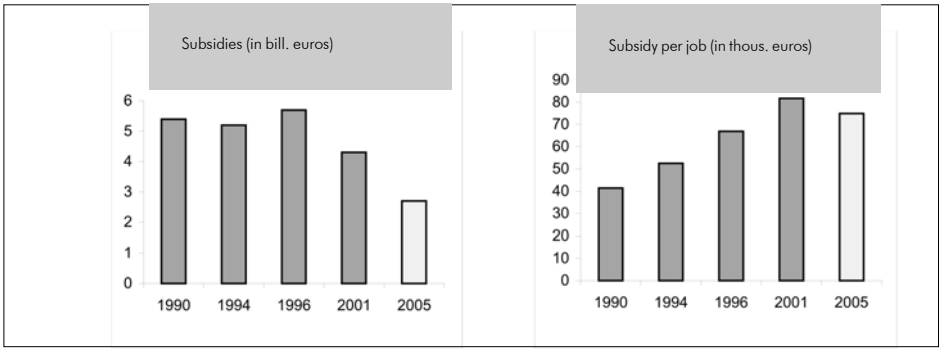
In its 2001 Environmental Performance Review, the OECD came to the conclusion that around 35 percent of subsidies in Germany could be considered harmful to the environment[50].

If the entirety of subsidies for hard coal were spent on the improvement of energy efficiency in buildings, not only could - according to calculations by the German Federal Environment Agency - 6 million tons of CO_2 be saved, but a net total of 30,000 jobs could also be created.[51] At the end of 2006, 37,000 people still worked in the hard coal mining industry in Germany.

The law on financing the end of subsidized coal mining by 2018, the Steinkohlefinanzierungsgesetz (German Hard Coal Financing Act), which went into force at the end of 2007, is the implementation of the "Framework for a common coal policy of the Federal Government, the states North Rhine-Westphalia (NRW) and Saarland, RAG AG [coal mining company] and IG BCE [trade union]" approved on February 7, 2007. In this framework, all parties agreed to end the subsidization of hard coal mining in Germany by the end of 2018 in a socially responsible manner. The German Bundestag is also considering a decision to end subsidized hard coal mining by 2012.

Ending subsidization is financed by the federal government (regulated by the Financing Act), funds from the federal states North Rhine-Westphalia and Saarland and from the RAG AG (commitment made in the Framework agreement) and funds from the RAG Foundation to finance liabilities with unlimited duration (so-called Ewigkeitslasten) (regulated by the negative legacy contract between the foundation and the two federal states).

Hard coal subsidies in Germany:



Values planned for 2005

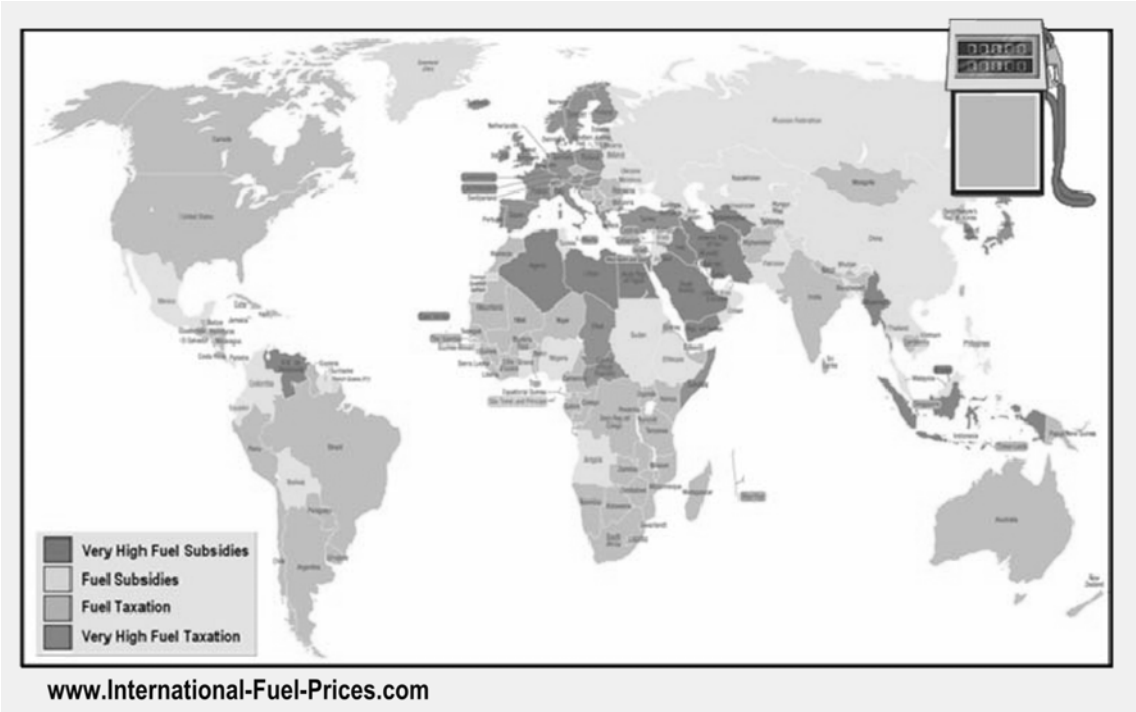
Sources: Gesamtverband des deutschen Steinkohlebergbaus, Federal Ministry of Finance, Germany (Subsidy Reports)

[49] Prange, Florian/ Ahlswede, Jochen, 2006: Schwarzbuch Klimaschädliche Subventionen

[50] BMU, 2002: Ökologische Finanzreform - Bilanz und Perspektiven

[51] UBA, 2003: Subventionen für die deutsche Steinkohle ökonomisch und ökologisch nachteilig, Pressemeldung 14/2003, URL: http://www.umweltbundesamt.de/uba-info-presse/2003/pd06003.htm

Figure 1: International Fuel Prices 2005



The total sum of the funds needed for the phase-out process between 2009 and 2018 add up to a total of around 29.5 billion euros. Counting the support earmarked for the hard coal mining industry in 2004 for the period 2006-2008, the sum total for the phase-out already amounts to around 38 billion euros.

Contrary to claims by the industry, Lignite mining, despite the particularly drastic impact of opencast mining in Horno or Garzweiler, direct and indirect subsidies amounting to 1 billion euros annually.[52] This includes tax shelters that other fuels - such as gas or oil - don't enjoy as well as the exemption from payments for water withdrawal and from mining royalties. Each year, 150 million euros are spent on the modernization of lignite mining in eastern Germany. The Federal Environment Agency estimates the external costs of the lignite mining industry at 3.5 billion euros annually; thus the financial incentives for this extremely climate-unfriendly fossil fuel amount to 4.5 billion euros in Germany alone. To a certain extent some of the subsidies, at least formally and in terms of figures, were reduced on August 1, 2006 by the Energy Taxation Act which abolished the mineral oil tax on oil and natural gas used to produce electricity.

There are also many studies on global energy subsidies, however they usually only look at financial support and tax concessions. For example, in many countries fossil fuels are not taxed, but are subsidized at below global market prices[53] (cf. fig.1).

The World Bank estimates direct subsidies for gasoline and diesel in developing countries at around 18 billion dollars. Low taxes under the regional average subsidize fossil fuels - and thus climate killers and increased traffic - by further 71 billion dollars.[54] The goal of these programs is to provide access to crude oil products for socially underprivileged groups. In reality however, gasoline subsidies, particularly in developing countries, benefit a minority of wealthy, mobile people who use the most oil and are supported by the general public. Therefore, whether looking at efficiency, climate protection or distributive justice, these subsidies have a negative impact.[55] In the fight against poverty, state funds are better spent on microcredits and education policy than on subsidizing the price of gasoline.

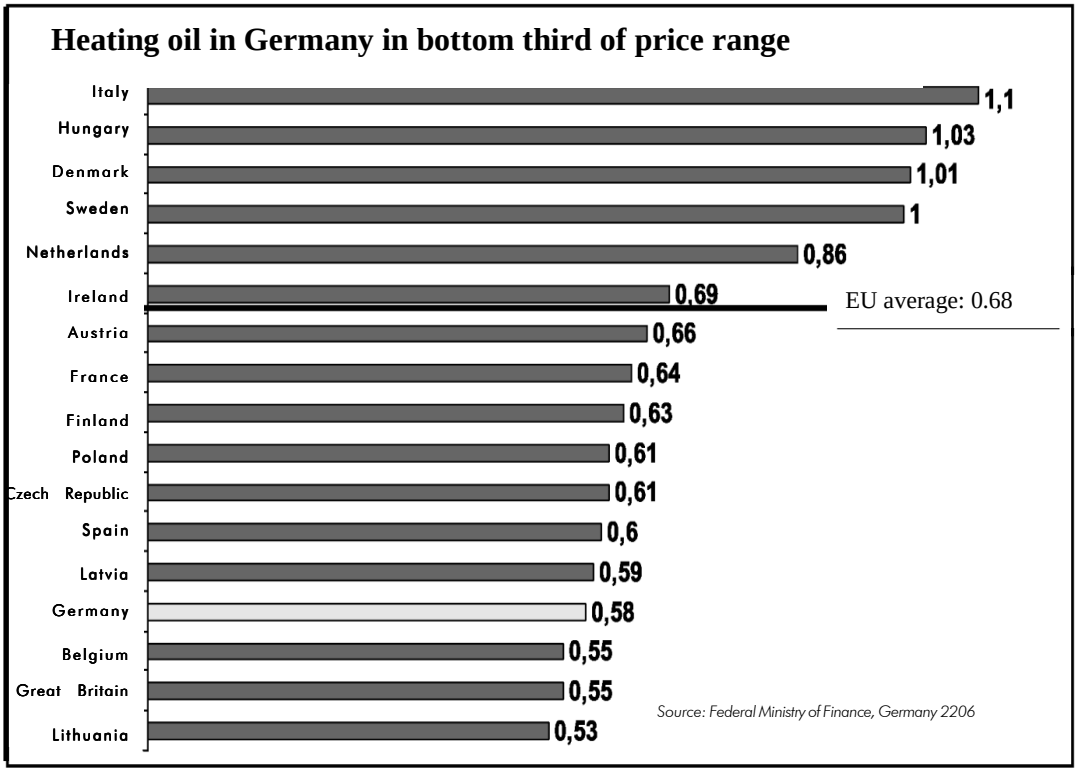
52 UBA, 2004: Nun belegt: Auch Braunkohle bekommt Subventionen, press release 95/2004, URL: http://www.umweltbundesamt.de/uba-info-presse/2004/pd04-095.htm

53 GTZ, 2005: International Fuel Prices 2005

54 Weltbank/ UNEP/ IWF, 2002: Financing for Sustainable Development, p. 21

55 OECD, 2005: Environmental Fiscal Reform for Poverty Reduction

Fuel oil prices in Eruope in comparison (per liter in euros, February 2006)



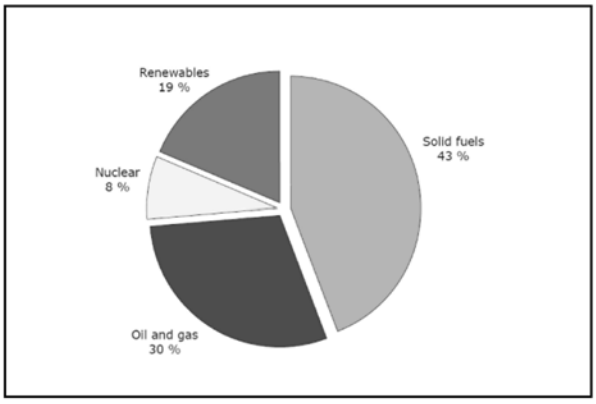
But - particularly in oil exporting countries such as Iran, Nigeria, Venezuela and Indonesia - gasoline prices are much lower than on the global market. Indonesia for example has the lowest gasoline prices in all of Asia. Between 2000 and 2005, Indonesian subsidies for oil products have been estimated at 36 billion US dollars.[56] In Venezuela, one liter of gasoline only costs approximately 3 US cents.

In Iran, direct and indirect subsidies for oil products have been estimated to be as high as 18 percent of the gross national product[57]. These subsidies are not only harmful to the climate, but are also responsible for the inefficient and wasteful use of energy.

In India, and especially in China, these perverse subsidies have thankfully been reduced in the past few years. For example on November 1, 2007, fuel taxes were raised by 4 euro cents/liter, a sharp rise considering the local income.

In Europe, direct energy subsidies are estimated at 29 billion euros in the EU-15 countries. Of these, 80 percent go toward nuclear energy and fossil fuels and only 19 percent go toward renewables.

Distribution of energy subsidies in EU-15 countries[58]:



Nationally, inadequate taxation supports in particularly heating with fuel oil. In Germany, fuel oil prices are far below the European average, decreasing the profitability of energy saving measures and renewable energies.

[56] OECD, 2005: Environmental Fiscal Reform for Poverty Reduction

[57] UNEP, 2004: Energy subsidies – lessons learned in assessing their impacts and designing policy reforms, pp. 100ff. / see also: World Development Report 2003, URL: http://hdr.undp.org/en/reports/global/hdr2003/

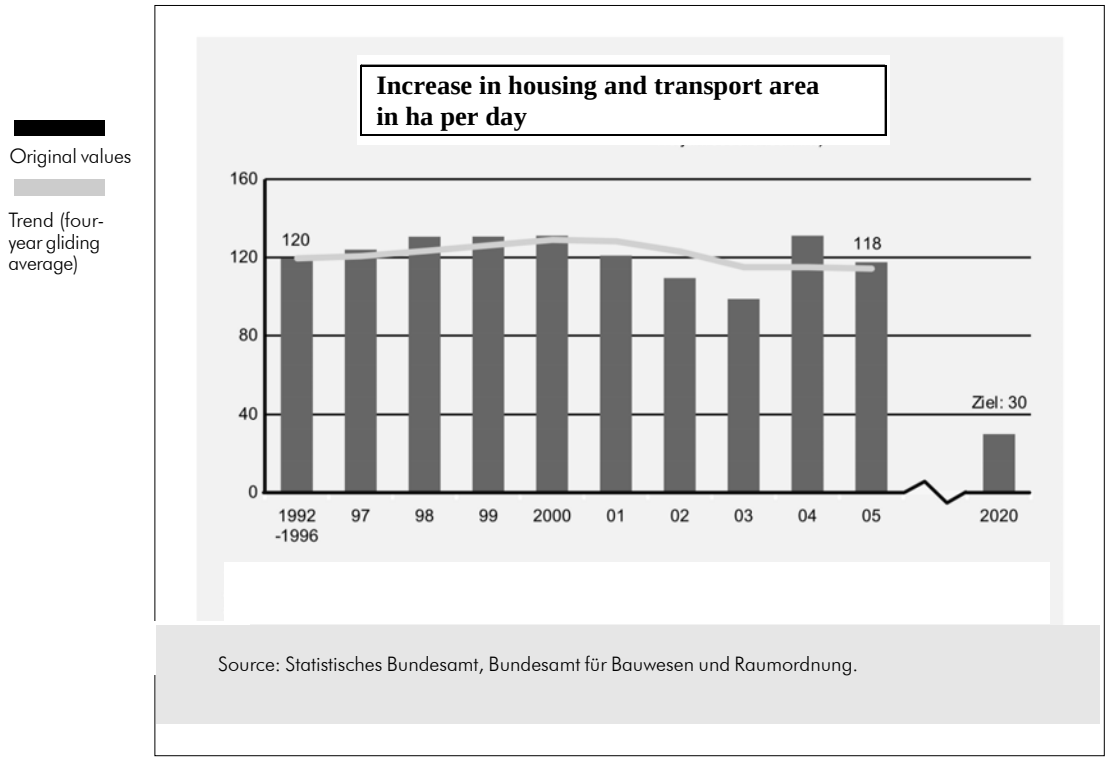
[58] EEA, 2004: Energy Subsidies in the European Union: A brief Overview

F. THE CONSUMPTION OF AREA

Today, more than 30 percent of formerly natural habitats on Earth's surface are cultivated. By 2050, if this trend continues, we can expect that further 20 percent will be transformed into agricultural area, infrastructure or housing[59].

There are different forms of subsidies that directly or indirectly increase the consumption of area and have a negative impact on biodiversity. Subsidization of traffic and infrastructure are the primary harmful incentives to environmental degradation. Because considerable subsidy payments are made to the transportation sector, the transportation of wares and goods across long distances has become less and less expensive (see chapter G). As a result, more is transported and the distances also increase. This increase results not only in higher emissions, but also in a rising need for area and in urban sprawl, destroying the natural habitats of flora and fauna. Concessions in the transportation sector and subsidization of construction influence private individuals and businesses in their decisions on where to locate. Urban sprawl causes people to leave city centers, creating longer distances between work, home and shopping facilities[60].

In Germany, every day 100-120 hectares of area are lost. The goal of the National Sustainability Strategy is to reduce this number by three-quarters to 30 hectares per day by 2020.



Source: Statistisches Bundesamt, Bundesamt für Bauwesen und Raumordnung.

G. THE TRANSPORTATION SECTOR

The transportation sector receives much higher financial incentives. According to a study by the European Environment Agency, subsidies for road, air and maritime traffic lie between 269 and 293 billion euros.[61] More than half of these funds go to the creation of infrastructure, which is not only harmful to the climate but is particularly fatal to biodiversity because of its consumption of area and other impacts (cf. table 5).

If we add the external costs of 650 billion euros for environmental and climate destruction due to traffic, the sum total is 919 to 949 billion euros in perverse financial incentives. Tax revenue from the transportation sector is

[59] Millennium Ecosystem Assessment, 2005: Millennium Assessment Report

[60] EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

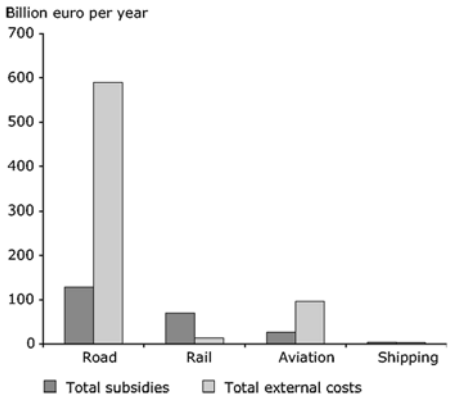
[61] EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

Table 5: Overview over the subsidies in the year 2005; Quantity and quality (in billion euro)

	Infrastructure subsidies (only EU - 15)	Other transfer-payments	Exceptions of fuel taxation	Exceptions of added value tax	Total
Road traffic	110	7	0	9	125
Rail traffic	37	33	0 to 1	3	73
Air traffic	0	1	8 to 16	18	27 to 35
Shipping traffic	10	1	3 to 19	0	14 to 30
Miscellaneous		30			30
Total	156	73	11 to 36	29	269 to 293

however only 200 billion euros. The bulk of traffic subsidies is borne by the general public and imperils biodiversity.

Traffic subsidies in the EU and external costs[62]



Subsidies in the transportation sector are distributed as follows[63]:

- Road freight transport takes first place among subsidy recipients at 125 billion euros. Most of the subsidy funds go toward infrastructure development.
- Rail traffic is supported by 73 billion euros annually. Half of this sum goes toward infrastructure development and the other half toward financial support for transportation costs.
- Air traffic is supported by 27 to 35 billion euros each year. This sum results mostly from the fact that airlines, in contrast to rail companies, do not pay mineral oil or energy taxes, nor must they pay value-added tax on international flights. Furthermore, many airports are subsidized by direct government allocations or by federal shareholdings.[64] Maritime traffic is supported by 14 to 30 billion euros.
- Further 30 billion go toward the transportation sector in general.

The effects are disastrous: Whereas in the EU-15 between 1970 and 2001 the length of expressways has about tripled, rail networks have shrunk by 19,000 kilometers.[65] Yet there are great environmental drawbacks to the subsidization of new roads: the fragmentation of the natural habitats of animals and plants as well as negative impacts on the viability of ecosystems and on animal populations. Particularly the construction of expressways consumes enormous areas. Roads also often present insurmountable hindrances to the freedom of movement of small animals. Furthermore, many animals are scared away by traffic noise or killed by road traffic. Road construction also consumes more area than railways, ships or airplanes to transport the same amount[66].

Global transportation subsidies are estimated at 750 billion euros and account for almost half of all environmentally harmful subsidies.[67] In the USA, gasoline still often costs less than mineral water and is highly subsidized by low taxation. Unpaid costs for road construction add up to 464 billion dollars per year; or 1,700 dollars for each US citizen[68].

Not only does the construction of transportation infrastructure endanger biodiversity; the use and care of roads also threaten the adjacent flora and fauna. Alongside the harmful impacts of exhaust emissions on the

62 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe, URL: http://reports.eea.europa.eu/technical_report_2007_3/en/eea_technical_report_3_2007.pdf

63 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe, URL: http://reports.eea.europa.eu/technical_report_2007_3/en/eea_technical_report_3_2007.pdf

64 Deutsche Bank Research, 2005: Ausbau von Regionalflughäfen: Fehlallokation von Ressourcen, URL: http://129.35.230.60/PROD/DBR_INTERNET_DE-PROD/PROD0000000000192158.pdf

65 Madarassy, J., et al., 2004: Heading down dead ends: Transport sector financing in Central and Eastern Europe

66 IEEP et al., 2007: Reforming environmentally harmful subsidies Final report to the European Commission's DG Environment

67 Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike, International Institute for Sustainable Development

68 Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike, International Institute for Sustainable Development

Table 6: Average environmental externalities in cents per vehicle kilometer

	Passenger cars (2005)	Heavy goods vehicles (> 3,5t)	Methodology	Reference
Climate costs	1,2	4,8	Methodological Convention 70 € / t CO2	UBA project Infras, Fifo, 2007
Air pollution	0,5	5,6	Damage to health, damage to materials, crop losses after ExternE (EU Commission 2005)	UBA project, Infras, Fifo, calculated by IER
Nature and landscape	0,4	2,0	Costs of renaturation, purification of waters etc.	Infras/IWW (2004), converted by the authors
Noise	0,8	5,0	Damage to health, differences in rents	Infras/IWW (2004), converted by the authors
Total environmental externalities	2,9	17,4		

Source: UBA 2007, p. 10

climate and on natural systems, we must also contend with the pollution of soil and water through, for example, oil, heavy metals or road salt.[69] Putting emissions from international air traffic and maritime traffic aside[70], road traffic is responsible for 93 percent of all emissions in the transportation sector. However the CO_2 emissions of the international air and maritime traffic sectors are rising more sharply than in the other transportation sectors. While emissions from international maritime traffic have risen by 30 percent between 1990 and 2005, emissions from air traffic have increased by 96 percent[71].

An additional harmful impact of transportation on the environment is air pollution from for example fine dust. This is also an effect of the low taxation of diesel fuel. In Germany, the tax advantage of diesel over regular gasoline is more than 18 cents and thus more than the entire eco-tax. Energy consumption in the transportation sector is higher than in all other sectors. In 2004, the transportation sector was responsible for 30.7 percent of the entire energy consumption of the EU-25.[72] A particular problem with subsidies in the transportation sector is however, as in subsidized housing construction, the fragmentation and destruction of natural habitats and ecosystems due to the consumption of area for transport infrastructure. Between 1997 and 2000, the consumption of area in Germany averaged 129 hectares/day. In the following years, additional consumption of area slowed only marginally. Between 2001 and 2004, the area for housing and transport in Germany spread by 115 hectares/day[73]. However as yet there is no clear trend; during this time period, in 2002, the consumption of area had sunk to 105 hectares/day, noticeably below the average for the total period. Such short-term reductions reveal less about government measures and rather reflect the economical downswing at the time. Stimulating the economy on the other hand leads to a renewed rise in the consumption of area and of the threat to biodiversity[74]. The German federal government, in its 2002[75] sustainability strategy, proposed a reduction of the consumption of area to 30 hectares/day by 2020. However this goal shall remain unattainable until environmentally harmful subsidies are reduced or dismantled and property taxes transformed into an area consumption tax[76].

In 2007, the Federal Environment Agency presented a study of the external costs of transportation in Germany.[77] Biodiversity loss in natural and cultivated areas was estimated independently.

If the external costs of car traffic alone were added to the price of gasoline, it would have to rise by 37 cents/liter. However the eco-tax is only 15 cents/liter. This does not take into account non-environmental external costs of road traffic such as road construction and accidents.

AIRPORT SUBSIDIES

Environmentally harmful government subsidies in the traffic sector are not only granted directly for infrastructure development. Looking at the example of payments made by the Flughafen München GmbH (Munich airport) to the airlines it can be seen that subsidies are also distributed via indirect routes and can have harmful impacts. Since the mid-1990s, the Munich airport, which is co-owned by the state of Bavaria, the German federal government and the city of Munich, grants airlines a so-called "marketing allowance" for fuel costs. This allowance is up to 25 euros for 1000 liters of kerosene. The competitive disadvantages of the Munich location were named as justification for these payments. Allowances were meant to compensate for higher kerosene

69 Nash, Chris et al., 2002: The Environmental Impact of Transport Subsidies

70 International aviation traffic and maritime navigation come neither within the Kyoto Protocol nor the EU Emissions Trade

71 EEA, 2007: Greenhouse gas emission trends and projections in Europe 2007

72 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

73 Statistisches Bundesamt: Zunahme der Siedlungs- und Verkehrsfläche: 115 ha/Tag, press release No. 532 from 20.12.2005, URL: http://www.destatis.de/jetspeed/portal/cms/Sites/destatis/Internet/DE/Presse/pm/2005/12/PD05__532__33,templateId=renderPrint.psml

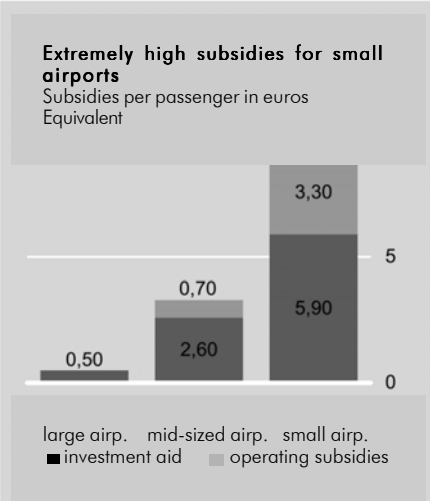
74 UBA, 2007: Raumbezogene Umweltplanung. Reduzierung der Flächeninanspruchnahme, URL: http://www.umweltbundesamt.de/rup/flaechen/index.htm

75 BMU, 2007: Nationale Strategie zur biologischen Vielfalt

76 Vorschläge für eine Ökologische Finanzreform zum Flächenverbrauch finden sich in: Müller-Motzfeld, G. 1996: Renaturierung eines Überflutungssalzgrünlandes an der Ostseeküste

77 UBA, 2007: Externe Kosten kennen, Umwelt besser schützen

prices due to higher transportation costs because there is no pipeline to the North Sea harbors and no inland port. However, according to the federal government, only the added costs were partially compensated. Currently, the payments average 14 euros/ 1000 liter, which adds up to an annual total expenditure of around six million euros. These payments were in fact stopped with the 2006/2007 winter timetable, but they were substituted by a new payment for airlines offering long-distance flights. Subsidies like this create an artificial need which then results in further subsidies, for example for the expansion of the airport[78].



Sources: *Deutsches Verkehrsforum, DIW, ADV*

COMMUTER TAX ALLOWANCE AND URBAN SPRAWL

A further element of subsidized urban sprawl is the commuter tax allowance. The European Environment Agency (EEA) also called it an environmentally disastrous subsidy[79] in a 2007 report since it one-sidedly supports automobile traffic as well as living outside of urban areas. In 2007, the commuter tax allowance in Germany resulted in costs amounting to 1.5 billion euros[80]. In a study recently conducted for the EEA, researchers arrived at a total of 4.865 billion euros annually spent on subsidies for the way to and from work in Germany, Sweden and Austria[81]. In 2000, first steps were already taken in a more environmentally-friendly direction. Since then, not only car owners may deduct commuter allowances but also commuters who use public or other means of transportation. At the same time, the allowance was raised[82]. On January 1, 2007, after the allowance was again lowered, subsidies for living far from work were limited even further. The 30 cents per kilometer allowance can only be deducted beginning with the 21st kilometer[83]. This measure alone saved the federal budget 2.5 billion euros[84].

From a social point of view as well, the commuter tax allowance is completely unjust since in particular people in a higher income bracket are supported for driving long distances to and from work[85]. Urban sprawl results in more sparsely populated areas which in turn lowers the cost efficiency of public transportation. Trains and busses are particularly cost-effective when they transport many people. In less populated areas, efficiency declines. This is invariably compensated by funds from the public budget, raising ticket prices or reducing the number of trips, making public transportation less attractive than private transportation. Subsidies in the transportation sector are a particularly strong steering mechanism. Though financial support or concessions, subsidies can greatly influence the competitiveness of different means of transportation[86].

Thus financial incentives for transportation and mobility are one of the greatest motors in the world behind biodiversity loss.

78 Schwenn, Kerstin: Münchener Flughafen-Beihilfen erzürnen Brüssel, in: FAZ.NET, from 8.11.2007, URL: http://www.faz.net/s/Rub0E9EEF84AC1E4A389A8DC6C23161FE44/Doc~EFD9632C4DAD9455C9A46788854001892~ATpl~Ecommon~Scontent.html

79 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

80 Prange, Florian/ Ahlswede, Jochen, 2006: Schwarzbuch Klimaschädliche Subventionen und Steuervergünstigungen

81 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

82 Learnline 2000: Agenda 21 Km Pauschale, URL: http://www.learnline.nrw.de/angebote/agenda21/archiv/00/daten/epkmpau.htm

83 Cf.: Gesetzliche Neuregelungen zum 1. Januar 2007: http://www.bundestag.de/aktuell/archiv/2007/gesetze_2007/index.html

84 Cf.: Deutsche Bank Research, URL: http://www.dbresearch.com/servlet/reweb2.ReWEB?rwkey=u40119891

85 EEB, 2004: Stop subsidies polluting the world: Recommendations of phasing out and redesigning environmentally harmful subsidies European Environmental Bureau

86 EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe

H. THE AGRICULTURAL SECTOR

Agriculture does not threaten biodiversity in and of itself. The majority of cultivated landscapes in Germany were formerly forest areas. By creating complexly structured agricultural landscapes and concurrently new open habitats, agriculture made it possible for many wild plants and animals to settle. Species that were able to make a home in Germany include for example cornflowers, poppies, meadow-breeding birds and wild hamsters. Many species, such as field pansies, are even dependent upon the planting, cutting or grazing of agricultural areas. Altogether in Germany, around 270 plant species appear only or mostly in cultivated fields. However between 20 and 35 percent of these species are threatened by extinction to a greater or lesser degree. Not only that, some species have already become extinct. The more intensive agriculture becomes, the greater the threat to biodiversity. The German Federal Agency for Nature Conservation has reported that around 450 plant species are endangered by intensive farming or by abandoned farms. The agricultural use of area impacts both local (related to habitat) and regional (related to landscapes) biodiversity. The intensification of agriculture leads to a standardization of baseline conditions in cultivated areas, which often has a negative effect on the diversity of species. Even on intensively-used grassy areas only a small proportion of plant species that were not sown by hand can be found. Intensive agriculture results in a limited spectrum of species and closed plant communities. Furthermore, the use of pesticides and fertilizers supports the spread of plant species that thrive in a high-nutrient environment, which in turn displace traditional resident species[87].

Agricultural subsidies make up a significant portion of the EU budget. Around 44 billion euros - 40 percent of the total budget - are spent on European agriculture. Germany's portion is 9.3 billion euros.[88] Financial support in the agricultural sector makes up much of the total subsidy volume not only in the EU, but also in the OECD. In the OECD member states, agricultural subsidies add up to 346 billion dollars a year[89]. A large percentage of these subsidies leads to overproduction, over-fertilization and the massive use of agricultural poisons and also reduces the competitiveness of farmers in developing countries[90].

OECD studies have shown that subsidies account for one-third of agricultural income - only 4 percent of which are environmentally friendly.

There are no official numbers for non-OECD countries. Myers and Kent assume that the sum total is at least 25 billion US dollars, whereby they believe a total of 50 billion or more to be more realistic. A cautious estimate of 30 billion US dollars in annual subsidies for non-OECD countries combined with the expenditure of the OECD countries adds up to a sum total of 376 billion US dollars for global agricultural subsidies. Of these, more than half - around 207 billion US dollars - must be categorized as environmentally harmful[92].

The 2007 OECD report calculated the total support estimate (TSE) by which taxpayers and consumers funded the agricultural sector in the years 2004 to 2006 in the OECD countries at an average of 381 billion US dollars annually. However these numbers are now falling. The TSE for 2006 was 372 billion US dollars. The decline is more obvious when the TSE is compared to gross national product (GNP). Between 1986 and 1988 in the OECD countries, The TSE was 2.5 percent of the GNP; in 2006, agricultural subsidies accounted for only 1.0 percent of the GNP[93].

Agricultural subsidies can be divided into three main categories:

1. The subsidization of product amounts guarantees farmers a set price. In most cases, this price support takes the form of subsidization of the market price so that farmers can sell their products at above global market levels.[94] Within the OECD, price subsidies, at 60 percent, make up the most important financial support instrument for producers[95].
2. Explicit and implicit production subsidies support factors or means of production (for example energy, fertilizer, capital). This

87 WWF/ DLG, 2004: Biodiversität in Kulturlandschaften. Aufgabe und Chance für Landwirtschaft, Naturschutz und Gesellschaft, URL: http://www.wwf.de/fileadmin/fm-wwf/pdf-alt/landwirtscgaft/2.pdf

88 BUND, 2006: BUND-Hintergrund zur Offenlegung von Subventionen, URL: http://www.bund.net/fileadmin/bundnet/publikationen/landwirtschaft/20061012_landwirtschaft_subventionen_offenlegen_hintergrund.pdf

89 OECD, 2005: Agricultural Policies in OECD Countries: Monitoring and Evaluation 2005. Highlights

90 Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

91 Myers, N./ Kent, J.1998: Perverse Subsidies. How Tax Dollars Can Undercut the Environment and the Economy

92 Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy

93 OECD, 2007: Agricultural Policies in OECD Countries: Monitoring and Evaluation 2007

94 Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy

95 OECD, 2005: Agricultural Policies in OECD Countries: Monitoring and Evaluation 2005. Highlights

support lowers production costs. Explicit support is paid directly to the farmers; implicit support includes offering or supporting services for farmers (for example research and development, education).

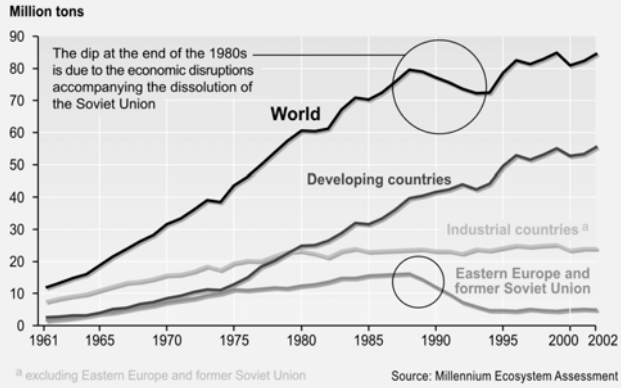
3. Finally, subsidies in the agricultural sector also take on the form of direct payments. These have no direct effect on production costs or sales price. The market price still stands. Direct payments are made as, for example, area payments, compensation for failed harvests after natural catastrophes or set-aside entitlements whereby set-asides are seen as a means of reducing overproduction which was itself caused by subsidization of prices[96].

Varying studies have shown that up to two-thirds of all direct payments are environmentally harmful[97]. The subsidization of prices as well as payments to increase production amounts are considered particularly harmful to the environment. These interfere significantly with natural systems and have the potential to seriously harm biodiversity. The negative impacts on wild plants and animals and their habitats, including the extinction of entire species, are grave[98].

Subsidies account for around one-third of agricultural income[99]. The majority of subsidies goes toward projects that have a damaging on the environment. To prevent this, some countries attach conditions to agricultural subsidies in order to support environmental protection. A 2003 study however showed that in the OECD countries, only 4 percent of agricultural subsidies were granted to environmentally sustainable projects[100]. The situation within the European Union is similar. In the past few years, some reforms of the Common Agricultural Policy (CAP) were meant to decouple subsidies from production and instead tie financial support to, for example, adherence to environmental standards. Such agri-environmental programs are seen as the most effective means of conserving biodiversity in agricultural areas. However the implementation of such programs differs greatly from country to country within the EU. Whereas in Austria, Sweden, Finland and Luxemburg more than 80 percent of all agricultural area is covered by programs of this kind, under five percent is in the Netherlands and Greece[101]. In 2004, organic farmland in the EU accounted for 3.4 percent of all agricultural area. In the EECCA (Eastern Europe, Caucasus and Central Asia) and SEE (South Eastern Europe) regions, the percentage of organically cultivated farmland was only 0.5 percent[102].

Subsidization of agricultural products increases the use of land due to increased profitability. As a result, ground is cultivated that was previously untouched[103]. Areas with low soil quality that would not be profitable without subsidies are also cultivated. This soil is often particularly vulnerable to erosion[104]. Subsidies also reduce the financial risks of agri-business. Since the extreme financial risks of production losses are covered, there is no

Figure 3.17. Trends in Global Use of Nitrogen Fertilizer, 1961–2001 (million tons) (S7 Fig 7.16)



96 Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy

97 Myers, N./ Kent, J., 1998: Perverse Subsidies. How Tax Dollars Can Undercut the Environment and the Economy

98 Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy

99 OECD, 2003: Agricultural policies in OECD countries. Monitoring and evaluation 2003

100 OECD, 2003: Agricultural policies in OECD countries. Monitoring and evaluation 2003

101 EEA, 2006: The changing faces of Europe's coastal areas

102 EEA, 2007: Europe's environment. The fourth assessment

103 Van Beers, C./ de Moor, A., 2001: Public Subsidies and Policy Failures

104 OECD, 2001: OECD Environmental Outlook

more need to reduce the risk of losses by cultivating a diversity of species. This leads to an increase in monoculture crops since it seems more efficient and thus more economical to cultivate only one kind of plant. Not only is natural biodiversity lost, but subsidization of production also boosts agricultural biodiversity loss[105]. Monocultures and shorter cultivation cycles also lead to soil erosion[106].

To intensify cultivation, pesticides and fertilizers are also often used, causing the emission of substances harmful to the environment. Fertilizers release nitrogen and phosphorus. Over-fertilization (eutrophication) leads to water pollution - of the public drinking water supply as well - and to the destruction of sensitive eco-systems on land[107]. The impact of agricultural emissions on natural waters and their surrounding ecosystems is considerable. For example, agriculture is responsible for 40 percent of the nitrogen load in the Danube[108]. In other bodies of water, up to 80 percent of total contaminant loads are related to agriculture[109].

Not only in the EU is there massive subsidization of agriculture. In the USA, the Farm Bill Extension Act of 2007 approved subsidies of 197 billion euros, although the WTO penalized the US government to the tune of 3 billion euros because of the high cotton subsidies set by the law[110]. In China, many agricultural products are subsidized at below global market prices to make them affordable for the majority of the population. To this end, chemical fertilizers and pesticides are also subject to a negative tax, providing an environmentally counterproductive incentive for their highest possible consumption. Water prices for irrigation are also very low and oil and gas are sold to farmers at below global market prices[111]. However the Chinese government is in the process of dismantling these environmentally harmful subsidies bit by bit as part of their new environmental strategy[112].

WATER CONSUMPTION

An additional threat to biodiversity comes from the subsidization of irrigation-intensive agriculture in dry areas. For example the irrigation-intensive cultivation of cotton has contributed to the drying out of the Aral Sea. The USA subsidizes the cotton industry by 3 to 4 billion annually; in 2006, the EU spent 700 million euros for the irrigation of cotton, particularly in Spain and Greece.

In addition, Spanish farmers receive direct area payments for 12,000 hectares from the EU fund for rural development. However the question must be asked whether irrigated cultivation in the dry areas of Andalusia or Greece is actually making a contribution to sustainable development[113].

Studies have shown that EU and US cotton subsidies are responsible for 38 percent of income losses in West Africa. The US subsidies alone push global market prices for cotton down by more than 12 percent.

The EU therefore spends 200 million dollars on subsidy payments for cotton cultivation in West Africa "as compensation." As mentioned above, the WTO penalized the USA in December 2007, because of a petition filed by Brazil, to a penalty of 3 billion euros for its export subsidies. The USA would rather pay than dismantle its subsidization of 25,000 cotton farmers[114].

Similar questions are raised by the controversial cultivation of rice in the San Joaquin Valley, California, which consumes more than 50 percent of the water available in the region. Subsidy measures for projects like these lead to water shortages and salinization of the soil[115]. Altogether, agriculture is responsible for around 70 percent of global water consumption.[116]

THE EXAMPLE OT THE BALTIC SEA

The Baltic Sea has developed into a particularly problem for countries bordering it due to the increased use of fertilizer. The use of affordable chemical fertilizers allowed for increasing revenues in climatically advantageous as well as disadvantaged areas in the Baltic Sea region. However the use of chemical fertilizers has a disastrous impact on the environment. From 2002 to 2004, in the eight EU countries bordering the Baltic Sea, around 56 kilograms more nitrogen and 11 kilograms more phosphorus per hectare were spread on the fields. Because of this, the soil absorption capacity was exceeded and the soil is no longer able to absorb nutrients. Every year, around 35,000 tons of phosphorus and more than

[105] Kjellingbro, Peter Marcus/ Skotte, Maria, 2005: Environmentally Harmful Subsidies – Linkages between subsidies, the environment and the economy

[106] OECD, 2001: OECD Environmental Outlook.

[107] Myers, N./ Kent, J., 1998: Perverse Subsidies. How Tax Dollars Can Undercut the Environment and the Economy

[108] Behrend, Horst, 2004: Past, present and future changes in catchment fluxes

[109] EEA (European Environment Agency), 2005: Source apportionment of nutrients in Europe

[110] Die Presse, 2007: WTO verurteilt USA wegen Baumwollesubventionen, URL: http://diepresse.com/home/wirtschaft/economist/349705/index.do

[111] OECD, 2004: Environmental Fiscal Reform for Sustainable Development and Poverty Reduction

[112] Ad hoc News, 2007: China kürzt Subventionen bei Nahrungsmittel-Exporten, URL: http://www.ad-hoc-news.de/EmergingMarkets/14657782/China+kuerzt+ Subventionen+ bei+Nahrungsmittel+ Exporten

[113] WWF, 2005: Kampf ums „weiße Gold": EU- und US-Subvenentionen gegen Baumwolle aus Afrika

[114] Yahoo Nachrichten Deutschland, 2007: WTO verurteilt USA wegen Baumwollsubventionen, URL: http://de.news.yahoo.com/ap/2007 1218/twl-wto-verurteilt-usa-wegen-baumwollsub-028dfd1_1.html

[115] Precoda, Norman, 1991: Requiem for the Aral Sea

[116] OECD, 2001: OECD Environmental Outlook

one million tons of nitrogen make their way into the Baltic Sea. Around 90 percent of the phosphorus and more than 50 percent of the nitrogen are agricultural waste products. The surplus fertilizer reaches the Baltic Sea via ditches and rivers. Today, the Baltic Sea water contains eight times more phosphorus and four times more nitrogen than it did one hundred years ago. The eutrophication is no longer limited to coastal areas near estuaries, but also affects the open sea. The enrichment of the Baltic Sea with nutrients aids the fast growth of plankton. Kelp beds and seagrass meadows are grown over, the plankton withdraws oxygen from the water and prevents other life forms from growing in large areas. Today, these "dead zones"[117] cover over 70,000 square kilometers and have spread to areas where the water has a depth of over 30 meters. In 2005 for example, highly poisonous blue-green algae spread over an area of hundreds of thousands of square kilometers between Finland, Sweden and Poland. A further agricultural problem is caused by intensive livestock farming in particular. Since all of the organic fertilizer can no longer be added to the soil, the question arises of how to dispose of the waste. Over-fertilization and this waste problem are caused primarily by EU subsidy policy. The EU spends an average of 72 euros per capita annually on agricultural subsidies in EU countries bordering the Baltic Sea. Altogether, agriculture subsidies of around 10.4 billion euros are granted to the Baltic Sea region states each year for - from an environmental point of view - unsustainable farming methods. Furthermore, in 2003 alone 2 billion euros were spent to transform traditional farms into industrial farms. Only five percent of this modernization fund supports environmentally-friendly agriculture.[118]

LACK OF TRANSPARENCY

A further trouble with agricultural subsidies is the lack of transparency and the manner in which the billions in subsidy payments are distributed. Only some EU Member States voluntarily publish a list of recipients. These lists make it clear that taxpayers' money goes not only toward the preservation of cultural landscapes and environmentally-friendly agriculture. Rather, money is short for agricultural environmental protection since large agri-businesses - from the British and Dutch royal families to multi-national food companies - are profiting most from the subsidies. For example in 2005, Nestlé alone - via subsidiaries in Portugal, Denmark, the Netherlands and Great Britain - received financial aid amounting to 48 million euros. The dairy company Müller Milch, despite an annual profit of 100 million euros, was granted a total of 70 million euros in subsidies in 2003 and 2004[119].

Another negative aspect of agricultural subsidies is the support of industrial livestock farming. For example the farm Gut Klein Wanzleben in Saxony-Anhalt received a bull premium of 1.5 million euros per year until 2013 for 12,000 bulls which they no longer raise. This money was then used to build a stall for an intensive pig farm. In this way, tax monies support pig breeding - a non-subsidized agricultural sector. In the main, it is small and medium-sized farms which practice high-welfare animal husbandry, create jobs and conserve rural areas - organic farms and farms with contracts to protect the environment. These farms hardly receive any support: On average, they get one-third less subsidy funds than conventional farms; half of the farms in Germany receive less than 5000 euros a year from Brussels.[120]

BIOENERGY AND BIODIVERSITY

The climate catastrophe was the top issue of the year 2007. In the search for alternative, renewable energy sources, the cultivation of plants for biodiesel and biomass plays a central role. Concurrently, agricultural production is converted from food crops to biofuel crops. In the EU, 190 million tons of oil equivalent (Mtoe) are now being produced for bioenergy. This could be increased to 300 Mtoe by 2030, or around 17 percent of total EU consumption in 2004.

However, the cultivation of renewable biofuel crops impacts negatively on biodiversity. The cultivation of plants as energy carriers is subsidized by the EU and by the German federal government as an important tool in the fight against climate change, but a boom in biofuels also poses the danger of an increase in monocultures. Biofuel crops would then compete with food crops. If the global need for food and alternative energy sources

[117] WWF, 2007: Ostsee: Dünger-Kollaps droht

[118] WWF, 2007: Ostsee: Dünger-Kollaps droht

[119] BUND, 2006: BUND-Hintergrund zur Offenlegung von Subventionen, URL: http://www.bund.net/fileadmin/bundnet/publikationen/landwirtschaft/20061012_landwirtschaft_subventionen_offenlegen_hintergrund.pdf

[120] BUND, 2006: BUND-Hintergrund zur Offenlegung von Subventionen

increases at the same time, this could lead to an increase in cultivation area and thus the destruction of valuable forests and grassy areas[121]. The raw material for biomass can be produced most efficiently in tropical regions. As long as subsidies prevent the true environmental costs of biomass from being mirrored accurately by the market, the cultivation of biofuel crops enters a cutthroat competition with natural ecosystems such as forests, wetlands and pastures. Biofuels are in danger of losing their environmental credibility because of the threat they pose to biodiversity.

The current subsidization of biofuels may create both environmental and economic problems. Biodiesel and bioethanol are subsidized differently in different countries. According to an OECD study, subsidies lie between 0.38 and 4.98 US dollars per replaced liter of fossil fuel. This amounts to a subsidy of 165 to 4,520 US dollars for each ton of CO_2 emissions avoided. Furthermore, the use of biofuels results in higher transportation costs. Usually, transport costs are even double. The total amount of subsidies - mostly tax shelters - for the production of biofuel and the admixture with conventional fuels amounts in the USA to 8.3-11 billion US dollars. In the EU, as a result of the reform of the Common Agricultural Policy in 2003, producers of raw materials to be used as energy carriers have profited to a large extent from subsidies earmarked for the producers of food crops. For example in 2004, producers of oilseed received approximately 1.6 billion US dollars, producers of grain received around 15 billion US dollars[122].

The non-profit organization Rainforest Rescue has alerted to the environmental impact of biofuel cultivation in numerous publications[123].

The conflict between climate protection and biodiversity makes the use of sound judgment in biofuel cultivation imperative. A global certification system is key to the environmentally-friendly, sustainable cultivation of biofuel crops. The EU Commission as well as some Member States - in particular Germany, the Netherlands and Great Britain - are currently working on a certification scheme.

[121] EEA, 2007: Europe's environment. The fourth assessment

[122] Doornbosch, Richard/ Steenblik, Ronal, 2007: Biofuels: Is The Cure Worse Than The Disease?

[123] Siehe URL: http://www.regenwald.org/

[124] WWF, 2006: Spanien: Subventionierter Wasserklau – WWF kritisiert europäische Agrarpolitik, press release from 11.5.2006, URL: http://www.wwf.de/presse/details/news/spanien_subventionierter_wasserklau/ ; WWF, 2006: Illegal Water Use in Spain – Causes, Effects and Solutions

[125] WWF, 2007: Wasserverschwender Landwirtschaft - Anbau besonders durstiger Pflanzen, URL: http://www.wwf.de/themen/suesswasser/wasserknappheit/wasserverschwender-landwirtschaft/

WASTING WATER

Subsidies in the water sector can lead to the overuse and misuse of water reserves. In Spain for example, around one billion cubic meters of water is needed just for the overproduction of corn, rice, cotton and fodder crops. This is equivalent to the annual consumption of 16 million inhabitants of Spain. The cultivation of tomatoes and vegetables in Spain is also dependent on an incredible waste of water in a country increasingly threatened by drought.

Spanish farmers receive 6 billion euros annually in EU agricultural subsidies to grow these crops, although they are using more than one million illegal wells[124]. The subsidization of irrigation agriculture in Spain is responsible for 80 percent of the annual consumption of fresh water. Globally, agriculture consumes 70 percent of our water supply[125].

NATIONAL AGRICULTURAL SUBSIDIES

The German federal government's agricultural subsidies added up to more than 1.7 billion euros in 2002.

Altogether, agriculture subsidies have receded slightly in the past years, as the table shows. More than half of all federal subsidies are granted within the framework of the joint federal /state scheme "Improvement of agricultural structures and coastal protection" (Rahmenplan der Gemeinschaftsaufgabe "Verbesserung der Agrarstruktur und des Küstenschutzes" (GAK)); mostly for the agricultural investment program, compensation payments and land reparcelling. The most important tax concessions are reductions under the ecological tax reform and the subsidization of gasoline under the Biodiesel Act. Additionally, farm vehicles pay reduced motor vehicle taxes, the development of company property to build housing is tax-exempt and agricultural cooperatives are exempt from corporation and business taxes. Farmers are even exempt from liquor taxes when they run their own small distilleries. With regards to the dismantling of so-called implicit subsidies, researchers have found many deficits in the German Federal Soil Protection Act, the Federal Immission Control Act, the Water Resources Act and in some agricultural acts. These deficits impact the environment at a high cost to the

economy. A major weakness is for example the lack of a clear definition of good agricultural practice.

As of 2003, monies from the first application of the so-called "horizontal regulation" must be added to the federal budget for agriculture. The horizontal regulation allows EU Member States to tie direct payments to compliance with specific environmental requirements (cross compliance) or to reduce direct payments - for example depending upon the number of employees - and to use the money thus saved as incentives for rural development measures (modulation). The German Federal Ministry of Food, Agriculture and Consumer Protection (BMELV) decided to introduce modulation in 2003.

Environmental groups demand that the funds be more clearly targeted at sustainable development in rural areas and more strongly linked to environmental criteria. Taxes on fertilizer or pesticides, as tested in Norway and Sweden, could also lead to a significant reduction of pollutants and contaminants[126].

Development of the federal financial aids in Germany and the tax preference reductions allocated to the FRG (1997 to 2002, in million Euro)

Business sector nutrition, agriculture, forestry	Subsidies in total	Financial aids	Tax preference reduction
1997	2.221	2.046	175
1998	2.101	1.922	179
1999	1.959	1.827	132
2000	1.872	1.725	118
2001	1.848	1.510	338
2001	1.742	1.347	395

Source: 17th and 18th subsidy report, overview 1

[126] Gregor Louisoder Umweltstiftung/ Förderverein Ökologische Steuerreform e. V./ Naturschutzbund Deutschland e. V. (Hrsg.), 2004: Ökologische Finanzreform in der Landwirtschaft

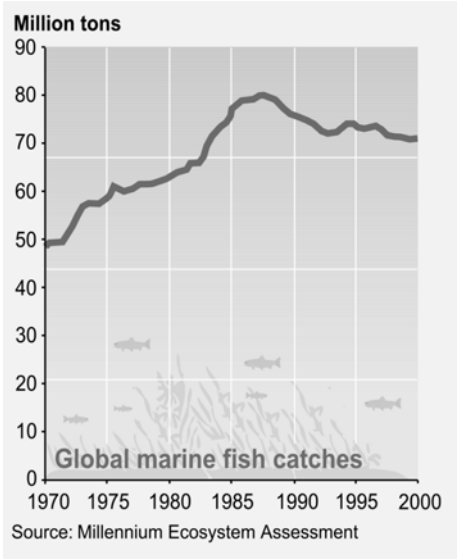
I. THE FISHING SECTOR

In the 1990s, the fishing industry had an annual total value of 56 billion dollars worldwide. However the costs of the fishing industry - for boats, workers, etc. - are over 110 billion dollars. The difference between these two numbers can be explained primarily by the massive subsidization of the fishing industry[127]. The result has been the emptying of large areas of the ocean and the extinction of entire fish stocks as well as the long-term bankruptcy of the fishing industry and very high unemployment[128].

Today, 74 percent of global fish stocks have been depleted completely or are overfished. In many parts of the world, biomass - catch and bycatch - has gone down by more than 90 percent as compared to pre-industrial times[129]. In the EU, 80 percent of all fish stocks are faced with imminent collapse or their condition is unknown.

In 2001, 40 percent of all fish caught in the EU were from stocks outside safe biological limits. For some fish species, in particular cod, haddock, whiting, hake and other round fish, as well as salmon and sea trout, the ratio was even 60 percent. Twenty percent of all coral reefs have been destroyed irreparably and further 20 percent were badly damaged in past years[130].

Estimated Global Marine Fish Catch, 1950–2001



Many studies have provided striking examples of the connection between subsidies and the depletion of the world's oceans[131].

In 2002, direct and indirect fishing subsidies amounted to 6.2 billion dollars in the OECD countries, or 20 percent of the total value of the fishing industry. As the numbers show, fishing is responsible for a large percentage of global ocean biodiversity loss and overfishing is only profitable because of subsidization. At the same time, as a result of the perverse subsidy policies of some countries, coastal fishing, an important food source in poor countries, has become more difficult. Simultaneously, fish is becoming more and more expensive on local markets in the global South, making it prohibitive for low-income segments of the population. What is more, subsidies often have absurd economic side effects. For example fishermen in Senegal, since there are no more fish in the coastal waters, sell their subsidized diesel fuel to taxi drivers[132].

To compensate for dwindling catches and subsequently fishermen's incomes, many governments have instituted new fishing subsidies. France for example, in November 2007, promised new subsidies for fishermen to compensate for raising fuel prices[133].

In the past, massive government support led to the modernization of fleets: more technology, radar and larger boats.

There are more than 3.5 million fishing boats world-wide. Only 1 percent of them are part of the industrial fishing industry. Nonetheless, the industrial fishing industry account for 50 percent of fishing capacity. This is achieved by nets which could encompass two to twelve Cologne cathedrals. Thus if 1 percent of all fishing boats were abolished, fishing capacity could be reduced by 50 percent[134].

The decline of fish stocks has led to a decline in profitability and reduced the value of fishing boats on the market. Due to this surplus, owners can not sell their superfluous ships and are forced to continue fishing. Nevertheless, the decline in fish stocks has caused the loss of over 100,000 jobs in the fishing

127 UNEP, 2004: Economic Instruments in Biodiversity-related Multilateral Environmental Agreements

128 Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike

129 Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

130 Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

131 Siehe Holden, Mike, 1994: The Common Fisheries Policy; Porter, G., 1998: Fisheries Subsidies Overfishing and Trade, pp. 41-56; Munro, G. R., 1998: The Economics of Overcapitalization and Fishery Resource Management: A Review, Overcapacity, Overcapitalisation and Subsidies ; Munro, G. R./ Sumaila, U. R., 2001: Subsidies and Their Potential Impact on the Management of the Ecosystems of the North Atlantic; University of British Columbia Fisheries Centre, 1999: Research Report No. 9 (5), pp. 10-27; OECD, 2000: Transition to Responsible Fisheries, Government Financial Transfers and Resource Sustainability: Case Studies.

132 OECD, 2004: Environmental Fiscal Reform for Sustainable Development and Poverty Reduction – Workshop proceedings and country studies

133 Verkehrsrundschau, 2008: Hohe Dieselpreise: Paris verspricht Kompensationshilfen – Brüssel warnt französische Regierung vor nicht EU-konformen Maßnahmen für Seefischer, URL: http://www.verkehrsrundschau.de/sixcms/detail.php?id=592901

134 Deutschlandradio, 2004: Aquakultur ist kein Ausweg – Das weltweite Problem der Überfischung, URL: http://www.dradio.de/dlf/sendungen/hintergrundpolitik/288720/

Table 7: Fishing subsidies in OECD countries:

Table 1: Government Financial Transfers and Production, OECD Countries, 2000p

	Direct Payments (A) USD million	Cost Reducing Transfers (B) USD million	General Services (C) USD million	Total Transfers (D) USD million	Total Landed Value (TL) USD million	GFTs as % of total landings %
Australia	..	56	26	82	1,011	8
Canada	209	69	230	476	1,418	34
European Union	295	322	278	895	6,255	14
Belgium	6	..	..	6	82	7
Denmark	6	..	2	8	404	2
Finland	0	4	7	11	21	53
France	60	9	98	167	952	18
Germany	1	8	..	9	150	6
Greece	18	15	30	62	233	27
Ireland	..	..	..	..	..	..
Italy	93	7	51	151	1,422	11
Netherlands[1]	0	..	..	0	446	0
Portugal	2	..	24	26	252	10
Spain	109	132	46	287	1,355	21
Sweden	1	2	18	21	106	20
United Kingdom	..	4	1	5	833	1
Iceland	..	16	26	31	735	4
Japan	19	37	2,807	2,864	12,021	24
Korea	34	68	214	316	3,667	9
Mexico	..	..	..	..	1,044	..
New Zealand[2]	..	..	27	15	..	..
Norway	2	18	85	105	1,112	9
Poland	..	..	..	..	91	..
Turkey	..	..	0	0	..	..
United States of America[3]	67	14	952	1,032	3,638	28
OECD Total	625	600	4,647	5,816	30,992	19

..: not available; 0 refers to data between 0 and 0.5; p: preliminary.
1. Turnover Dutch fisheries estimate.
2. Total transfers are net of the amount of cost recovery.
3. Includes an estimate of market price support (that is, transfers from consumers to producers).
Source: OECD (2003).

industry in the past years[135].

Fishing subsidies are a prime example of almost 100 percent harmful subsidies; a phase-out would bring environmental and social advantages. Historically, subsidization of fishing fleets was a lucrative business for governments, making them able - assuming an unlimited replenishment of fish stocks - to get rich on a free global asset.

In the fishing sector, many measures taken by the European Union clearly damage the environment. At best unintentionally, surely with a certain fatal irony, the European Union is nourishing disaster while ostensibly supporting sustainability. Between 2000 and 2006, the EU structural funds "Financial Instrument for Fisheries Guidance" subsidized the European fishing industry to the tune of 4.1 billion euros. The Member States could dispense with the money as they pleased; depending on the national agenda it was invested in coastal protection mechanisms, shipbuilding, fleet modernization or fish breeding farms. On January 1, 2007, the fund war renamed the European Fisheries Fund (EFF), but the goals have remained the same. They follow the Common Fisheries Policy of 2002: sustainable resource use, a stable balance between resources and fleet capacity, increased competitiveness and the support of environmentally-friendly fishing. EFF subsidies from 2007 to 2013 amount to 3.89 billion Euros. Of this money, Spain receives around 1 billion, France 192 million and Italy 376 million euros[136].

The dismantlement of the environmentally harmful subsidization of the fishing industry is overdue. Sustainable development in this sector can only be achieved if stable fish stocks are available. This means that the subsidies granted so far for expansion and modernization of the maritime fishing sector must be drastically reduced and support for reducing fishing capacity must be increased.

The global fishing fleet is 2.5 times larger than is sustainable[137].

[135] UNEP, 2004: Economic Instruments in Biodiversity-related Multilateral Environmental Agreements

[136] Die Zeit, 2007: Die leeren Netze von Palamós, Edition No. 38 from 30. 9. 2007, URL: http://www.zeit.de/2007/38/Thunfisch?page=all

[137] WWF, 2007: Unsere Ozeane: Geplündert, verschmutzt, zerstört

Subsidies for the modernization and expansion of port facilities, processing plants and marketing instruments should also be dismantled, because planning for foreign fish to land in European harbors also indirectly promotes overfishing.

Another problem is that the use of fish, a global resource, is largely tax-free. Taxes or tariffs on catches would create additional income for the European Community and act as an ecological steering mechanism against overfishing. License fees for foreign fleets in the territorial waters of developing countries should also be raised noticeably. This must also be combined however with a monitoring system and a limit on catches[138]. Some examples show that this could make a real contribution to financing developing country governments and the fight against poverty: In Guinea, fishing licenses already account for 30 percent of the federal income: in Mauritania, 15 percent. The EU alone has over 20 contractual fishing access agreements with developing countries[139]. If these agreements are to harmonize with the goals of fair development policy, the EU must set environmentally responsible catch limits - connecting sustainability and the fight against poverty. This also means that fees are tied to an effective monitoring system of extremely mobile fish stocks in coastal waters and to independent monitoring of catches. Namibia provides an example of good practice; it has developed a native commercial fishing industry with high levies on catches and effective controls on sustainable management[140].

Local fishermen should be given priority over foreign fishing fleets, since the former have greater interest in the long-term protection of stocks. The policy of many developing countries - selling fishing grounds and at the same time supporting the local fishing industry - often leads to overfishing and the collapse of fish stocks. While international fishing fleets can move on, the local fishing industry and the food security of many residents are jeopardized.

In the EU, Spain in particularly is very dependent on international fishing agreements. Fifty percent of its catch comes from outside the EU[141].

ILLEGAL FISHING AND SUBSIDIES

Almost one-third of all fishing takes place illegally, much of it within the EU. Monitoring authorities are often understaffed and increased controls meet with massive resistance from the fishing industry and its political lobby[142].

One example is tuna fishing in the Mediterranean. The ICCAT - the International Commission for the Conservation of Atlantic Tuna - estimated that in 2006, the illegal catch exceeded the tuna quote of 32,000 tons by 18,000 tons. ICCAT scientists had proposed a quota of 15,000 tons to ensure the survival of tuna stocks. However some Member States distributed licenses to so many fishing boats that fishermen were unable to turn a profit with the legal catch[143].

In this way, some Member States such as France and Italy assist illegal fishing, while neither the EU nor Member States provide funds for the effective control of catches. The increase in illegal fishing is in many ways also connected to perverse subsidies for fishing fleets.

Ineffective controls of catches and fishing methods, together with environmentally harmful subsidies, are a dangerous mix for marine biodiversity.

Subsidized fishing fleets and political concessions also lead to setting catch quotas far above an environmentally and economically defensible level[144]. Most subsidies are coupled not to the catch, but to the boat, the number of workers or the consumption of fuel. Thus boats that are actually no longer bringing in a profit continue to be used, raising the legal and illegal catch.

Catch quotas and subsidies for boats also cause only the most lucrative fish to be caught. Experts estimate the so-called bycatch - sea birds, marine turtles, sharks or fish that are thrown back because they can not be sold - at up to 30 million tons annually. Each year, over 300,000 whales and dolphins are caught in fishing nets and die[145].

[138] OECD, 2005: Environmental Fiscal Reform for Poverty Reduction

[139] IFREMER (Institut français de recherche pour l'exploitation de la mer), 1999: Evaluation of Fisheries Agreements Concluded by the European Community. Summary report.

[140] Nichol, P., 2003: A developing country puts a halt to foreign overfishing, Economic Perspectives, An Electronic Journal of the US Department of State,Vol. 8, No. 1., URL: http://usinfo.state.gov/journals/ites/0103/ijee/nichols.htm

[141] OECD, 2005: Environmental Fiscal Reform for Poverty Reduction

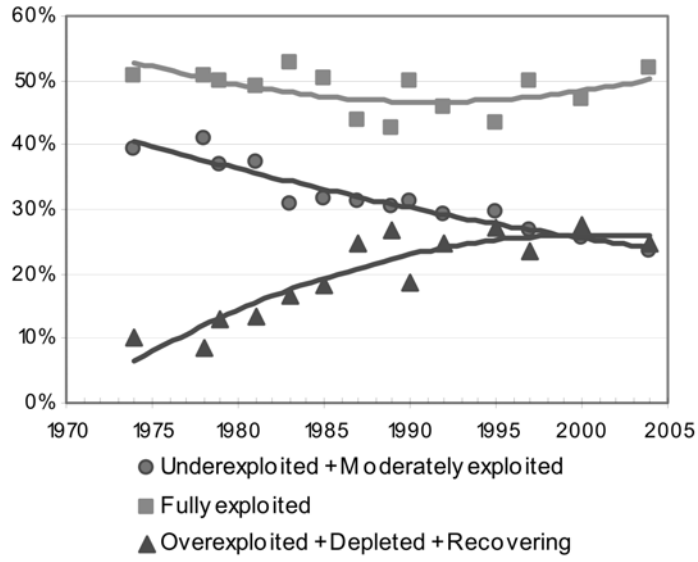
[142] OECD, 2005: Environmental Fiscal Reform for Poverty Reduction

[143] Die Zeit, 2007: Die leeren Netze von Palamós, Edition No. 38 from 30. 9. 2007, URL: http://www.zeit.de/2007/38/Thunfisch?page=all

[144] OECD, 2000: Transition to Responsible Fisheries, Government Financial Transfers and Resource Sustainability: Case Studies, p. 129

[145] WWF, 2007: Unsere Ozeane: Geplündert, zerstört, verschmutzt

Global Trends in world stocks state of exploitation: 1974-2004



Source: UNEP/WWF 2007, p. 3

AQUACULTURES

Subsidization of fish farms - so-called aquacultures - is relatively new. In these farms, fish sometimes caught in the wild are fattened with wild fish. To produce 1 kilo of tuna, around 22 kilos of wild fish are used as feed[146]. Young tuna are caught in the wild and then kept in cages along the coast. This increases the pressure on one of the most threatened fish stocks in the world. The EU subsidized the creation of this deadly industry with 20 million euros.

The total amount of subsidies spent by OECD countries for fish farms is estimated at 3.7 billion dollars[147].

Typical feeding fish such as anchovies, sardines, herring or whiting have now been fished to their limit or are already overfished. In Ecuador, over 70 percent of mangrove forests have been destroyed to make room for fish farms. Seventy percent of fish farm production is within China.

Often, the subsidized economic interests of aquaculture owners prevent the creation of marine reserves in biodiverse habitats such as mangrove forests, estuaries or bays. Fish farms also introduce invasive species that can threaten local biodiversity. For example the spread of the Pacific oyster in the Wadden Sea is displacing the blue mussel.

Therefore subsidies for fish farms should - if they exist at all - be coupled with stringent environmental criteria to ensure sustainable fishing.

THE EXTRACTION OF RAW MATERIALS

The extraction of raw materials from the ocean - already 30 percent of all crude oil is mined offshore - and the increase in marine traffic present an ever greater burden to the world's oceans. These activities are also supported by a large range of subsidies - for example tax exemptions for crude oil extraction or energy tax exemptions for maritime traffic - at the cost of the general population. For example, taxes and other charges on oil companies in the USA are, at 40 percent, far below the global average of 60 to 65 percent[148].

SHIPPING AND HARBORS

Maritime traffic is also increasing noticeably: By 2011, 138 million standard containers should be handled globally - 40 percent more than in 2006. This means that more and more waste, poisonous chemicals and oil will end up in the ocean. The marine biosystem threatens to become a global dump, with an incalculable impact on biodiversity.

Nevertheless, maritime traffic is subsidized by billions. In Asia, up to 30 percent of shipbuilding is subsidized. In Europe, subsidies are between 4.5 and 9 percent[149]. In 2004, Germany provided shipbuilders with direct subsidies of 125 million euros from public federal and state budgets[150]. By 2010, 8 billion euros of taxpayers' money will have been spent to finance the expansion of harbors in Wilhelmshaven, Hamburg and Bremerhaven and dredging the Elbe and Weser rivers. If we divide this sum by the number of containers handled, each additional container in Germany is subsidized by at least 772 euros[151]. The beneficiaries of these environmentally-harmful subsidies are the shipping companies and private transportation companies that pay that much less for the transportation of global freight.

The result of these government subsidies is that handling a container in Germany, despite high salaries, costs only around 130 dollars. This is far less than it costs in China - around 300 dollars.

146 WWF, 2007: Unsere Ozeane: Geplündert, zerstört, verschmutzt

147 OECD, 2002: OECD Workshop on Environmentally Harmful Subsidies - What makes a subsidy environmentally harmful

148 Le Monde Diplomatique, 2007: Neue Regeln für den Erdölmarkt - Energiekonzerne und Ölförderländer streiten über die Neuverteilung der Rohstoffreserven, Edition from 9. 3. 2007, URL: http://www.monde-diplomatique.de/pm/2007/03/09.mondeText.artikel,a0045.idx,16

149 CAW, 1999: A Ship-building Policy for Canada, URL: http://www.caw.ca/campaigns&issues/pastcampaigns/shipbuidling/policyaug1999.asp

150 Institut für Weltwirtschaft, 2006: Subventionen in Deutschland: Eine Bestandsaufnahme http://www.uni-kiel.de/ifw/pub/kap/2006/kap1267.pdf

151 WWF, 2006: Ausbau- und Unterhaltungskosten für die deutschen Seehäfen

The German federal government also plans to spend 4.7 billion euros on improved transportation infrastructure in and to the harbors. According to the WWF, better coordination alone could save 400 million to 1 billion euros[152].

DEEP SEA DESTRUCTION

Only a few years ago, the commercial exploitation of the deep sea began - the results are already catastrophic. Up to 50 percent of cold-water coral in the northeastern Atlantic, only discovered in recent decades, has already been destroyed by deep-sea trawling[153]. The FAO also has found deep sea fishing to be quite questionable as the impacts have not yet been researched. Trawling nets in particular destroy valuable habitats, sometimes irreparably. Only 0.25 of the global catch is caught by deep sea fishing - fish that often become quite old and grow slowly. More than 10 million species are estimated to live in the deep sea[155].

Deep sea fishing is only possible because of massive government subsidies. Over 152 million euros are spent on this particularly dangerous exploitation of the ocean. Most of this money goes toward fuel subsidies for 1.1 billion liters of marine diesel fuel. Without these subsidies, this sector would, as estimated by a team of international economists, accrue losses of up to 50 million euros annually[156].

FISHING INDUSTRY SUBSIDIES AND COMPETITION

Fishing subsidies not only are extremely damaging to the environment, they also affect global competition. National subsidies for oversized fleets put fleets that aren't subsidized at a disadvantage and act as a trade barrier.

Millions of fishermen in developing countries suffer most from rich Northern countries' oversized fishing fleets. Taxes on licenses and compensation provide little in the way of reparations. Fishing subsidies should therefore quickly be dismantled worldwide not only for environmental reasons, but also in the name of fair competition. This would bring economic and financial advantages since fish are a sustainable food resource, but not one that can be exploited indefinitely.

Dismantling must be accompanied by strict monitoring of catch quotas using modern technology. Reducing the capacity of fishing fleets is therefore necessary as many studies have shown that there is a close connection between high fleet capacities, catch quotas that are too high and illegal fishing[157].

A joint study by WWF and UNEP[158] sets clear limits for fishing subsidies and demands coupling them to detailed sustainability criteria. In particular the WTO and international agreements must make a significant contribution to reducing subsidies. This is the only way the fishing industry will be able to make a sustainable, long-term contribution to global food security and biodiversity preservation.

[152] WWF, 2006: Ausbau- und Unterhaltungskosten für die deutschen Seehäfen

[153] WWF, 2007: Unsere Ozeane: Geplündert, zerstört, verschmutzt

[154] Deutschlandradio, 2004: Aquakultur ist kein Ausweg – Das weltweite Problem der Überfischung, URL: http://www.dradio.de/dlf/sendungen/hintergrundpolitik/288720/

[155] Cf. Greenpeace 2006: Tiefseefischerei, URL: http://www.greenpeace.de/themen/meere/tiefseefischerei/

[156] Süddeutsche Zeitung, 2007: Laßt die Alten unten – Fische in der Tiefsee wachsen so langsam, dass sich überfischte Bestände erst nach Jahrzehnten wieder erholen, Edition from 20.2.2007, No. 42, Volume 63, URL: http://seaaroundus.org/newspapers/2007/SuddeutscheZeitung.pdf; Netzzeitung, 2007: Meeresforscher prangern Tiefseefischerei an, URL: http://www.netzeitung.de/wissenschaft/540913.html

[157] Greenfacts, 2007: Direct cross-links to the Global Assessment Reports of the Millennium Assessment, URL: http://www.greenfacts.org/en/biodiversity/figtableboxes/table-crossreferences.htm#as

[158] UNEP, 2007: Sustainability Citeria for Fishery Subsidies - Options for the WTO and Beyond

J. THE FORESTRY SECTOR

In the past 8000 years, around 45 percent of Earth's primeval forests have disappeared, a large percentage in the past century. Destruction continues to this day. If the Earth's forests continue to be cleared at the same pace and intensity, there is a risk that they will soon no longer be able to fulfill their function within the global ecosystem. Humankind is putting the habitability of the planet Earth on the line[159].

In Germany, the percentage of forest has sunk from more than 95 percent of the country's area to around 33 percent. Biodiversity loss in forests is a result of rapid clearing and the fragmentation and degradation of all forest types. According to FAO data, the net loss of forest area since 1990 has been 8.4 million hectares annually, mostly tropical forests. Since the calculation of net loss takes the reforestation rate into account, the true loss of forests is as high as 15 million hectares per year or more[160]. A planted forest can never achieve the same natural biodiversity as a primeval forest that has grown naturally. The quality and structural integrity of the remaining forest area has deteriorated considerably in comparison to earlier forests.

The main factors causing the depletion of forests and their biological diversity are manmade: the transformation of forests into farmland, overgrazing, mismanaged shifting cultivation, unsustainable forestry, the introduction of invasive animal and plant species, infrastructure development (road construction, hydroelectric projects, urbanization), mining and oil production, unnatural forest fires, pollution and climate change.

In developing countries, forests cover more than half of all energy needs. In rural areas in Africa, more than 95 percent of all energy is often produced by firewood. Even in Sweden (17%) and the USA (3%), forests make a contribution to energy production[161].

Scientists have made the damage done by large-scale clear-cutting sufficiently clear. Different functions are threatened. For example the destruction of naturally developed waterways and watersheds leads to habitat loss in certain animal species that have adapted to the ecosystems' original structure. Furthermore, the forest can no longer fulfill its function as a carbon sink. The impacts on the environment, economy and society are interconnected and sometimes reciprocal. They are international and hinder the development of the South[162].

The destruction of forests not only causes the extinction of animal and plant species, increases flooding and ruins regional climate systems, it also makes human life more difficult in the affected regions. People need the forest to meet their basic needs; it provides them with food, clothing, and the raw material they need to build shelters. Demand for natural forest goods will rise sharply in the future. On the one hand, because the global population is growing, on the other hand because of people's increased desire for affluence and consumer goods.

The forestry industry, with an annual turnover of 950 billion dollars, is one of the largest industrial sectors in the world. The volume of trade in wood products on the global market has increased four-fold in the past three decades and is now at around 200 billion dollars[163]. The services provided by forests are however not completely reflected by market prices. Forests provide living space for 75 percent of all animal and plant species and make a significant contribution to the global equilibrium of the climate. In many regions, forests are a central element of the hydrological and nutrient cycles. On the market, these aspects play little or no role.

In addition to the failure to internalize environmental consumption on the global market for wood products, government subsidies are to a large extent responsible for biodiversity loss. In most cases, government subsidies for clear-cutting are meant to act as an incentive to create new land for agricultural production.

Almost one third of Germany's forests are managed by state Forestry Associations. In many federal states, forestry reforms are currently being implemented. Forestry Administrations are still usually bound by law to exemplary, sustainable forest manage-

[159] World Commission on Forests and Sustainable Development, 1999: Our Forests our Future. Summary, p. 38

[160] BfN, 2007: Biodiversität der Wälder, URL: http://www.biodiv-chm.de/konvention/F1052472515/HTML_Page1053440985

[161] Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

[162] World Commission on Forests and Sustainable Development, 1999: Our Forests our Future. Summary, p. 6

[163] WTO, 2005: Market Access for Non-Agricultural Products, p. 1

ment. However critics have noted a creeping privatization and an increasing commercialism in current developments with negative impacts on the biodiversity of managed forests.

The following direct subsidies pose a massive threat to forest biodiversity[164]:

- export subsidies
- clearing licenses
- compensation for clearing costs
- tax reductions for wood products shipped through certain free trade zones
- tax exemptions for wood product producers
- credits for creating new plantations
- investment programs for the development of new forest structures and to support the forest industry
- development aid for forest management and national wood processing plants
- below-market interest on loans to wood-exporting companies
- reduced tax rates for land ownership
- financial and institutional support for export marketing

Further subsidies that are inconspicuous at first glance also play a role in massive biodiversity loss[165]:

- cost-free road construction for clearing companies
- government payment of administration costs for cleared area
- government payment of planning and development costs
- government payment of the costs of reforestation programs, meant to mitigate the impacts caused by businesses
- providing the wood industry with extremely inexpensive energy and water
- reduced tariffs for the import of machines and spare parts
- government acceptance of risks for internationally active companies (e.g. guarantees)

Although taxes and fees for the legal cutting of forests and cutting licenses do exist, they are often not collected. The World Bank has estimated that this results in income losses amounting to 5 billion dollars each year, or three times the global development aid expenditure for sustainable forest management[166].

Since tropical rain forests are particular biodiversity hotspots, two concrete examples of the impact of environmentally harmful subsidies in Brazil and Indonesia follow.

CASE STUDY BRAZIL

Between 1994 and 2004, 200,000 square meters of rainforest in the Amazon region of Brazil were destroyed. This is as much as the combined area of England and Scotland. Destruction was due to road and housing construction, forest fires, settlement and the continuing transformation of the Amazon jungle into farmland for livestock breeding and grain cultivation[167]. In particular the large area needed for the cultivation of soy beans is a major force driving biodiversity loss.

The Brazilian government not only encouraged the expansion of the wood and cellulose industry, but also generously subsidized the deforestation of the Amazon region. The main goal of these subsidies was to create new agricultural land for livestock breeding. Between 1979 and 1984, the Brazilian government provided the investors who funded deforestation with significant tax exemptions in order to attract even more investors. The close connection between subsidies and the destruction of environmental assets can be seen clearly in the fact that those settlers in the state of Rondonia who in 1990 received up to 3,200 dollars each in subsidies cleared 25 percent more rainforest than those who did not receive any government support[168]. Altogether in 1990, 163 million dollars were spent on support for clearing the rainforest. On top of this we must add government support for the pulp industry. UNEP is quite right in remarking that "pulp and paper production can be highly degrading to the environment."[169] For one thing, they consume large amounts of water and energy. They also release poisonous chemicals. This destroys or harms the habitats of numerous plants and animals.

Although the Brazilian government has in the meantime discontinued direct subsidies for clearing the rainforest and for land conversion, farms that taken together cover an area of 120,000 square kilometers still receive govern-

[164] Greenpeace International, 2006: Deadly Subsidies, p. 18/19

[165] Sizer, Nigel, 2000: Perverse Habits: The G8 and Subsidies that Harm Forests and Economies, p. 2

[166] OECD, 2004: Environmental Fiscal Reform for Sustainable Development and Poverty Reduction

[167] Greenpeace International, 2006: Deadly Subsidies, p. 29.

[168] Greenpeace International, 2006: Deadly Subsidies, p. 31.

[169] UNEP, 2004: Sustainable Use of Natural Resources in the Context of Trade Liberalization and Export Growth in Indonesia

Brasilian States with ecological revenue sharing in terms of adopted ICMS-E laws (Status: 2004)

Source: Meyer/Schweppe-Kraft 2006, p. 68

ment support in the form of tax concessions and tax exemptions. One hundred twenty thousand square kilometers is equivalent to one-third of the area of Germany. Since 1970, Brazilian society has lost 2.5 billion dollars in tax income to these environmentally harmful tax exemptions[170].

This is compounded by the many billions in subsidy payments for controversial road and dam construction projects that led to the destruction of vital habitats.

In the meantime however, the Brazilian government now also offers financial incentives for rainforest conservation. For example, environmentally protected areas are taken into account by fiscal equalization programs in many states. Communities now have a financial interest in biodiversity conservation, rather than, as was previously the case, only in the most effective economic use. In the Brazilian state of Paraná, the proportion of municipal nature conservation area grew 192 percent within 10 years after the ecological tax ICMS-E was introduced as an environmental fiscal compensation measure[171]!

This illustrates just how much financial incentives determine the conservation or loss of biodiversity.

The fact that the Brazilian government has increased the budget to crack down on illegal clearing has also had a positive effect. According to the Brazilian Ministry of the environment, in the past three years the government has achieved a 65 percent reduction of illegal deforestation[172]. By slowing down the speed of clearing in just the past three years, Brazil has been able to save the equivalent of 500 million tons of CO_2.[173]

Another critical point is the fact that every landowner in Brazil is allowed to clear 20 percent of his or her land[174]. Thus property often changes hands so that it can be cleared further. Buyers do not pay for biodiversity loss caused by clearing. These environmental costs are not internalized in market processes.

Not only national subsidy programs promote the deforestation of the Brazilian rainforest. EU common agricultural policy - with high subsidies for livestock production - led to massive soy bean and fodder cultivation in the 1980s and 1990s throughout South America. European agricultural subsidies created a high demand in the EU states for soy beans as an inexpensive alternative fodder. The cultivation of soy beans has a grave impact on biodiversity. By 2020, 22 million hectares of rainforest and savannahs the size of Great Britain may be lost to soy bean cultivation[175]. Each year, the European Union imports 30 million tons of soy meal for fodder for highly subsidized local production. The extensive support of bioenergy in the European Union recently begun creates similar pressure on biodiversity due to the massive cultivation of agrofuel crops in South America.

A further driving force behind rainforest destruction is infrastructure development in the Amazon basin. Creating road accessibility opens territory to loggers and slash-and-burners. The Trans-Amazonian highway - an East-West connection through the rainforest - is only one negative example. In the Brazilian government plan to stimulate growth in the Amazon region, 3.8 billion euros are slated for road construction alone[176]. The WWF fears that this could lead to the destruction of 1.7 billion square kilometers of rainforest by 2050. This is one-fourth of the remaining Amazon rainforest.

[170] Greenpeace International, 2006: Deadly Subsidies, p. 31

[171] Meyer, Christian/ Schweppe-Kraft, Burkhard, 2006: Integration ökologischer Aspekte in die Finanzpolitik

[172] Die Tageszeitung, 2007: Brasiliens Umweltministerin fordert Klimagerechtigkeit: „Nicht freikaufen", Die Tageszeitung from 13.12. 2007, URL: http://www.taz.de/1/archiv/dossiers/dossier-zug-nach-bali/artikel/1/nicht-freikaufen/?src=SE&cHash=9361c5b356

[173] Die Tageszeitung, 2007: Umweltministerin fordert Klimagerechtigkeit: „Nicht freikaufen", Die Tageszeitung from 13.12.2007, URL: http://www.taz.de/1/archiv/dossiers/dossier-zug-nach-bali/artikel/1/nicht-freikaufen/?src=SE& cHash=9361c5b356

[174] Peters, Maren, 2007: Pioniere im Regenwald – Rücksichtsloses Roden hat der Amazonasregion geschadet. Nun erproben Bauern eine sanfte Landnutzung – mit Erfolg, Berliner Zeitung No. 302 from 28.12.2007, p.14

[175] WWF, 2007: Soja-Hunger frisst Wälder und Savannen – Survey: Soja-Anbau in Südamerika wäre auch ohne massive Naturzerstörung möglich, press release from 3.9. 2004 URL: http://www.wwf.de/presse/details/news/soja_hunger_frisst_waelder_und_savannen/

[176] Der Standard, 2007: Straßenbau im Amazonas-Gebiet bedroht das Weltklima, URL: http://derstandard.at/?url=/?id=3119891

CASE STUDY INDONESIA

The deforestation of tropical rainforests in Indonesia has doubled in the past few years to 38,000 square kilometers per year. The Indonesian wood industry was built up in the 1980s and 1990s with massive government support. Support took the form of direct financial aid as well as loans and export credit guarantees from many rich industrialized countries. Today, Indonesia's wood industry is completely free from government control and follows no sustainability criteria. The expected result of this development is the complete destruction of the remaining Indonesian lowland rainforests within the next ten years. This can only be countered if control over the wood industry can be regained. Up to 90 percent of the wood currently used for industrial purposes has been cut illegally[177].

The Indonesian government played an active role in the development of a powerful pulp and plywood industry characterized by extreme overcapacity. The negative environmental impacts of paper and pulp production as stated above can clearly be seen here as well[178]. The 1988 production capacity of 600,000 tons of pulp for the production of paper grew to a capacity of four million tons by 1998. This growth went hand in hand with excessive forest clearing. In particular illegal clearing to ensure full utilization of pulp production capacity led to the long-term destruction of primeval forests and their biodiversity. Through artificially low production costs and direct production subsidies, Indonesia gave away over 400 million dollars in potential income between 1981 and 1982[179]. This is equivalent to 27 percent of government income from the entire wood and forestry sector. For every US dollar earned by the export of paper or plywood, Indonesia lost 4 dollars through the export of stem wood[180].

Furthermore, Indonesia is a prime example of what happens when forests, made accessible by clear-cutting, are cultivated intensively as farmland, causing rapid biodiversity loss. The expansion of palm oil plantations, often supported by subsidies, is to today one of the main causes of the destruction of Indonesian rainforests. Palm oil is one of Indonesia's most important export products. The WWF has published studies on the environmental impact of the palm oil industry[181]. They look at the effect of forest clearing to win agricultural area and at the direct environmental impacts of palm oil production and processing. The most destructive impacts are the emissions created by burning waste and the bleaching clay left over in the refining process.

Illegal clearing of forests and the ensuing illegal trade in wood products is the highest hurdle on the way toward sustainable forest management in Indonesia. Since professional illegal clearing is organized mostly by the Indonesian military and police, "it is fair to characterize this development also as a perverse form of subsidization."[182] The Indonesian islands of Kalimantan, Sulawesi and Sumatra have lost 170,000 square kilometers of primeval forest between 1986 and 1997[183].

The example of Indonesia makes it clear that illegal forest clearing and the ensuing trade on the black market are among the greatest threats to sustainable forest management in countries with primeval forests. This threat is multiplied by government subsidization of forest clearing and of wood product processing and export. When illegal clearing is done professionally by (para-)state institutions or when governments are not willing or able to stop such actions, this must also be seen as direct or indirect subsidization of actions that lead to biodiversity loss.

CASE STUDY USA

In the United States of America the public eye was long concentrated on the generous subsidies granted for forest clearing of state and national forests, particular forests managed by the US Forest Service. Although public forests account for only 2 percent of national wood production, they are subject to sustainable management. This includes meeting eco-requirements and measures to conserve intact forest ecosystems. The economic utilization of these forests is viewed very critically by the American public and the high subsidies for this logging program cannot be justified[185].

In 2005, 609,000 kilometers of road were built in US American forests, enough to circle the Earth 17 times. The largest national forest in the USA is the Tongass in Alaska. Just recently, 6.5 kilometers of trees were felled for

177 Greenpeace International 2004: Rampant Illegal And Destructive Logging Threatens The World's Third Largest Rainforest. Greenpeace International

178 UNEP, 2004: Sustainable Use of Natural Resources in the Context of Trade Liberalization and Export Growth in Indonesia – A Study on the Use of Economic Instruments in the Pulp and Paper Industry

179 Greenpeace International, 2006: Deadly Subsidies, p. 30

180 Greenpeace International, 2006: Deadly Subsidies, p. 30

181 Vgl. WWF, 2007: Regenwald für Biodiesel – Ökologische Auswirkungen der energetischen Nutzung von Palmöl/ WWF, 2002: Kahlschlag zum Frühstück – Palmölprodukte und die Zerstörung indonesischer Wälder: Zusammenhänge

182 Greenpeace International, 2006: Deadly Subsidies, p. 30.

183 Greenpeace International, 2006: Deadly Subsidies, p. 35.

184 Greenpeace International, 2006: Deadly Subsidies, p. 32.

185 Greenpeace International, 2006: Deadly Subsidies, p. 32.

a Tongass road, although the road has absolutely no long-term use. Road construction cost 680,000 dollars, the timber that could be accessed, cut and sold brought in only 70,000 US dollars.

Furthermore the US also supports, as do the governments of Canada, Japan and the EU Member States, the destruction of forests in other countries. They do so by supporting the foreign activities of timber companies seated in their countries and by supporting the creation of companies in developing countries which exploit native forests. These development programs usually have no sustainability criteria and often focus only on short term returns on investments[186].

Looking at forests in the USA, we can see that forest clearing has extensive negative environmental impacts. It causes soil erosion, changes the hydrologic cycle and water level, which - especially in wetlands - leads to a loss of local plant and animal species. Furthermore, many fish and crab species, such as for example salmon, can no longer return to their spawning grounds in the upper reaches of rivers and streams. We can only estimate the monetary value of this loss. Meyers and Kent estimate that America profits from the existence of intact forests as follows: "through supply of clean water worth more than USD 3 billion a year, while pollution filters are worth nearly USD 3.4 billion. As principal habitat for thousands of insect pollinators, the forests contribute USD 4-7 billion to US agriculture: Total: USD 11-14 billion."[187]

ILLEGAL CLEARING AS HIDDEN SUBSIDIZATION?[184]

The restricted definition of illegal forest clearing includes cutting and processing wood in disregard of the law as well as the illegal transportation of and trade in wood products. The law can be broken at all stages of the production cycle. A large proportion of forest clearing which causes enduring environmental degradation is however legal. It will not be enough to crack down on illegal clearing alone if the goal is global biodiversity conservation. Furthermore, in practice, it is often difficult to find out whether wood has been felled legally or illegally.

GERMANY

German timber prices often barely cover the costs of the harvest and the German forestry industry would make deficits in almost all areas without subsidies, because wood imports and wood substitutes are also subsidized[188]. What is more, forestry offices and forestry research institutes are subsidized, which is however justifiable from an environmental point of view in the name of sustainable forestry.

An indirect subsidy of pine and spruce monocultures can be found in the special government regulations and special action programs under the law on compensation for forest damage (Forstschäden-Ausgleichgesetz). Since pine monocultures are more susceptible to storms than stable mixed woodlands, private forest owners enjoy more tax concessions and receive government support in the millions[189]. Monocultures thus have financial advantages over more biologically diverse mixed forests.

Researchers and environmental groups suggest clearly lowering subsidies for forest access roads in Germany. Furthermore, adhering to the principles set down specifically for Germany by the Forest Stewardship Council (FSC) should be prerequisite for the subsidization of afforestation and forest-planting measures.

[186] Sizer, Nigel, 2000: Perverse Habits: The G8 and Subsidies that Harm Forests and Economies. p. 10

[187] Greenpeace International, 2006: Deadly Subsidies, p. 36.

[188] BUND, 2007: Der BUND-Arbeitskreis Wald – Wenig Geld, viel Engagement, URL: http://www.bund.net/bundnet/ueber_uns/arbeitskreise/wald/

[189] BfN, 2002: Nachhaltige Forstwirtschaft in Deutschland im Spiegel des ganzheitlichen Ansatzes der Biodiversitätskonvention

K. WATER

Rivers, lakes and swamps not only store drinking water and provide humans with recreational areas and numerous plants and animals of inestimable value with a habitat; wetlands also have significant economic value. Their value as water filter and flood control areas alone amounts to 70 billion US dollars annually.

Nevertheless, in the past 100 years, over 50 percent of all wetlands have been destroyed[190]. Water withdrawal from lakes and rivers for agricultural irrigation has increased six-fold in the past century. Many rivers and wetland dried out, even entire lakes such as the Aral Sea or Lake Chad have shrunk almost completely. Considerable subsidies for irrigation have contributed to this situation. At the same time, over-fertilization with nitrates causes the death of many waters and contributes to biodiversity loss.

SUBSIDIES FOR RIVER IMPROVEMENTS

Wetlands and meadows offer vital protection against floods. Conserving them is much less expensive than flood damages. The Elbe flood in 2002 alone cost Germany's economy 11.2 billion euros[191].

In the search for environmentally-friendly means of transportation, inland navigation has time and again moved into the public eye. In an attempt to alleviate road transportation, considerable subsidy funds flow into the expansion of waterways for inland navigation. For construction in eastern Germany alone, around 4.6 billion euros have been earmarked for the upcoming years. Despite the fact that relatively few freight vessels operate in eastern Germany, large fiscal investments are being made. The network of waterways is being continually expanded via lift locks and canalization. However the environmental usefulness of the CO_2 savings and the capital expenditure are way out of proportion to the environmental damage. Ships often emit no fewer greenhouse gases than trains due to obsolete vessels with insufficient exhaust gas purification. Although we can not expect more freight vessels in eastern Germany in the future either, the Havel, Saale and Elbe rivers are being straightened and expanded, causing irreparable damage to the valuable habitats of numerous animals and plans.[192]

DAMS AND EMISSIONS TRADING

Subsidies granted under the guise of environmental protection are a difficult topic. Hydropower has taken center stage in the search for clean, renewable energy sources. At first glance, building dams to produce clean energy seems climate friendly. However, damming rivers causes extreme environmental impacts (methane problem). The Clean Development Mechanism (CDM) developed by the United Nations within the framework of the Kyoto Protocol had occasionally proven extremely damaging to biodiversity. The CDM allows companies to fund projects in developing countries rather than reducing their own CO_2 emissions. In most cases, this is less expensive than saving CO_2[193]. By November 2007, 654 hydropower projects had applied to the UN Climate Secretariat for CDM funding. This is one-fourth of all CDM projects[194]. If all projects are approved, 1 billion dollars annually could be spent on dam construction projects alone[195].

A study by International Rivers concluded that the CDM plays no small role in promoting, or financially supporting, the destruction of rivers. For example the Campos Novos dam construction project in Brazil was a CDM project. Because of this dam, the number of fish has declined at the river's lower reaches and the river's former flooding area has become less fertile[196]. The Campos Novos dam project applied for CDM funding in November 2007, although the dam had already gone into operation in May of that year. This questionable process is repeated in many other dam construction projects. The average dam construction period is four to eight years. However, many subsidy grant applications are put in one year before going into operation. Aside from negative environmental impacts, this procedure contradicts the original intention and rules of the program. According to the rules, a project can only receive CDM

[190] Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

[191] Mitteldeutsche Zeitung, 2004: Flut von 2002 richtete 11,3 Milliarden Euro Schaden an – internationale Kommission legte Bericht für Deutschland und Tschechien vor, Edition from 31.8.2004, URL: http://www.mz-web.de/servlet/ContentServer?pagename=ksta/page&atype=ksArtikel&aid= 1093730587527&openMenu=987490165154&calledPageId=987490165154&listid=

[192] Das Erste, 2007: Versenkte Milliarden – sinnlose Subventionen für die Binnenschifffahrt im Osten, Panorama No. 681 from 26.4.2007, URL: http://daserste.ndr.de/container/file/t_cid-3954822_.pdf

[193] Fichtner, Nikolai, 2007: Klimaschutz-Maßnahmen in der Kritik. Subventionen für Staudämme, in: Die Tageszeitung from 03.12.2007, URL: http://www.taz.de/1/zukunft/umwelt/artikel/1/subventionen-fuer-staudaemme/?src=SZ&cHash=344c085e9f

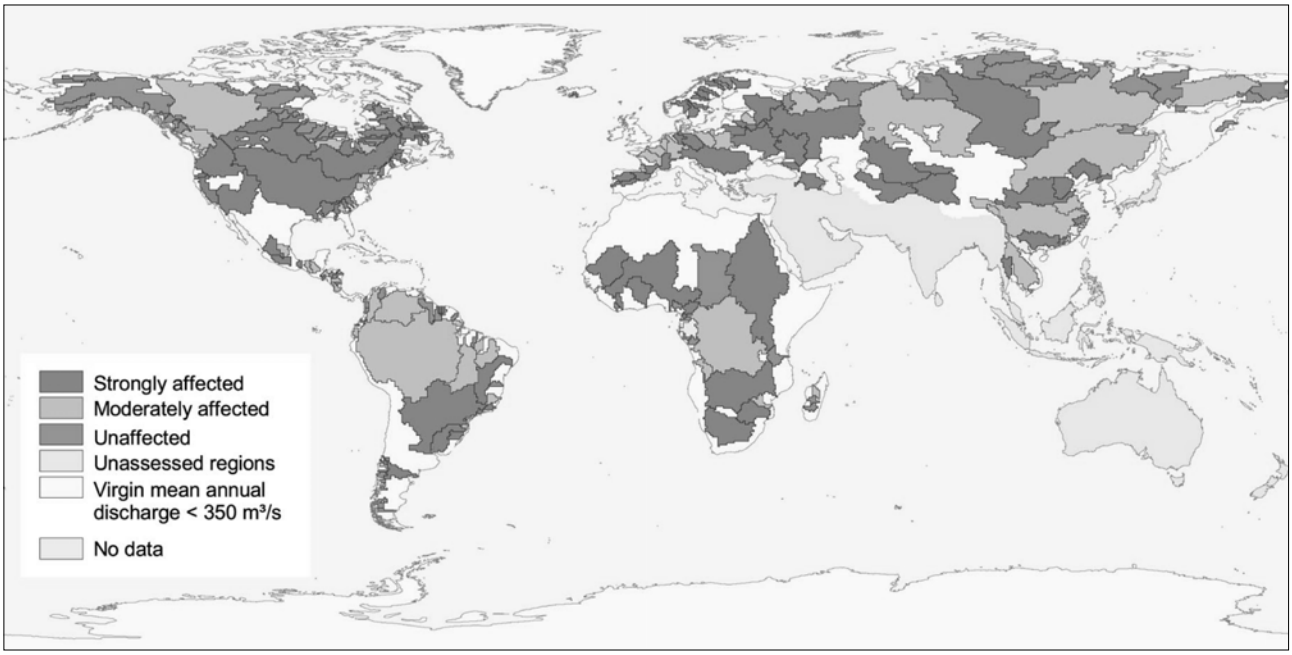
[194] International Rivers, 2007: Failed Mechanism. How the CDM is subsidizing hydro developers and harming the Kyoto Protocol

[195] Fichtner, Nikolai: Klimaschutz-Maßnahmen in der Kritik. Subventionen für Staudämme, in: Die Tageszeitung from 03.12.2007, URL:

http://www.taz.de/1/zukunft/umwelt/artikel/1/subventionen-fuer-staudaemme/?src=SZ&cHash= 344c085e9f

[196] International Rivers, 2007: Failed Mechanism. How the CDM is subsidizing hydro developers and harming the Kyoto Protocol

Around the world, most river landscapes have already been regulated (Degree of river fragmentation and flow regulation):



Source: World Resources Institute

support if it would not be able to get off the ground without subsidization. Since many of the subsidized dam construction projects would have been built without climate protection subsidies, the funds are no longer available for other projects[197].

In the coming years, Brazil plans to build 10 new dams. The government is subsidizing this construction to the tune of 13 billion euros. However we have already seen that the impact on humans, the climate and biodiversity is anything but positive. The Tucurui dam alone flooded 241,400 hectares of rainforest. This newly created reservoir has in the meantime become a breeding ground for malaria carriers and is responsible of one-sixth of Brazil's greenhouse gas emissions, because the flooded vegetation is slowly decomposing[198].

BOGS

Around half of all freshwater wetlands on Earth are bogs. Bogs are of inestimable value not only for biodiversity, but also for climate protection. There is more carbon stored in peat bogs than in all the forests of the world.[199] Nevertheless, in Germany 95 percent of all fens have been destroyed[200]. Only 30,000 hectares remain of the 500,000 hectare area once covered by raised bogs. Agricultural subsidies are the only reason many former swampy areas are at all profitable.

Peat extraction is the greatest threat to bogs. In Finland, to protect the peat industry even burning peat for energy is subsidized by the government, as is stockpiling by the peat extraction industry[201]. However the CO_2 balance of extracting peat from bogs is quite negative. In Ireland, two peat-fired power plants that burn 2 to 3 million tons of peat annually receive subsidies from the European Union for up to 250 megawatts[202]. If this continues, there will be no more peat in Ireland by 2020.

Over 50 percent of global losses due to bog drainage can probably also be traced back to agricultural subsidies. For example, the Malaysian government plans to transform 300,000 hectares of bog into farmland for the cultivation of oil palms and soy beans, both of which turn good profits due in particular to EU subsidy policy[203]. Bog drainage for agriculture purposes often leads to uncontrolled fires. Fires in drained areas in Indonesia caused greenhouse gas emissions of between 810 and 2,500 million tons of CO_2 in 1997/1998 alone. That is more than Germany's annual CO_2 emissions[204]!

197 Fichtner, Nikolai: Klimaschutz-Maßnahmen in der Kritik. Subventionen für Staudämme, in: Die Tageszeitung from 03.12.2007, URL: http://www.taz.de/1/zukunft/umwelt/artikel/1/subventionen-fuer-staudaemme/?src=SZ&cHash=344c085e9f

198 Der Standard, 2007: Straßenbau im Amazonas-Gebiet bedroht das Weltklima, URL: http://derstandard. at/?url=/?id=3119891

199 Joosten, Hans, 2006: Moorschutz in Europa – Restauration und Klimarelevanz

200 Die Welt, 2007: Treibhauseffekt – Moore bremsen den Ausstoß von Klimagasen, Edition from 23.7.2007, URL: http://www.welt.de/wissenschaft/article1047363/Moore_bremsen_den_Ausstoss_von_Klimagasen.html

201 Deutschlandradio, 2006: Torf als Energieträger - Umweltbedenken wegen Verfeuerung in Finnland, URL: http://www.dradio.de/dlf/sendungen/umwelt/546001/

202 Joosten, Hans, 2006: Moorschutz in Europa – Restauration und Klimarelevanz

203 Joosten, Hans, 2006: Moorschutz in Europa – Restauration und Klimarelevanz

204 Joosten, Hans, 2006: Moorschutz in Europa – Restauration und Klimarelevanz

L. HOUSING AND ECONOMIC DEVELOPMENT

HOUSING CONSTRUCTION

A large portion of area consumption and land utilization is due to housing development. In particular new construction on proverbial greenfield land - in contrast to energy-saving renovation of old buildings - causes environmental degradation. The extraction, production and transport of construction materials or their raw materials causes for example air and water pollution. The construction process itself causes soil sealing and produces large amounts of waste. When buildings are torn down, more waste is created. Furthermore, while buildings are in use, a greater need for energy exists[205].

Housing is the most subsidized sector of the German economy, receiving 23 billion euros annually. Promoting the construction of housing can also damage biodiversity. Not only the grant scheme for new home buyers - which is being discontinued in 2013 - preferences new buildings over building preservation, so do subsidies for low-income housing. New construction always also means additional environmental degradation. The expansion of roads, railways and electricity grids that fragment habitats and chase away animals go hand in hand with urban sprawl. Since Germany's population is shrinking and more and more buildings stand empty in the city centers, this one-sided policy also has disastrous social and urban development consequences.

In 2003, the Ifo Institute for Economic Research analyzed housing development policy in Germany for the Federal Environment Agency and made proposals for environmental reforms[206] (cf.: Table 8).

However since 2003 there have already been comprehensive reforms of construction subsidies. In particular dismantling the grant scheme for new home buyers and increased funding for programs to improve energy efficiency in buildings are examples of using fiscal pressure to, at least in terms of climate protection, mitigate environmental impacts considerably.

ECONOMIC DEVELOPMENT

An example from Germany for a sometimes perverse subsidy is the joint federal/state scheme (Gemeinschaftsaufgabe - GA) "Support for regional economic structures" which receives annual funds in the hundreds of millions. Similar to the home-buyers grant that has now been discontinued, this measure promotes urban sprawl. To promote and support "structurally weak regions" in particular, "industry-related infrastructure" is built. Although the focus is on finding new uses for industrial and commercial wastelands, creating new area is also supported. Although brownfields in Germany grew by 9 to 12 hectares per day between 1997 and 2000, the GA supports further urban sprawl by supporting industry-related infrastructure. According to the Federal Environment Agency, for the creation of new commercial areas, development of new infrastructure and use of further area for utilities and waste management plants for the new industrial parks, between 1998 and 2002 land consumption of at least 2.7 hectares a day was subsidized by at least 419 million euros altogether.[207]

In the EU, almost one-third of potentially competition distorting government subsidies for businesses are from Germany. This 20.2 billion euros amount to 0.87 percent of the national GDP.

CASE STUDY MÜHLENBERGER LOCH, HAMBURG, GERMANY

The Mühlenberger Loch was the last large freshwater wadden sea between Hamburg and the Elbe delta. It was vastly important as a resting place for migratory birds, foraging ground for breeding birds and spawning ground for many fish. The Mühlenberger Loch was filled-in and completely destroyed for the construction of the Airbus A380. For construction, Airbus received federal subsidies of over 1 billion euros and a further 1.3 billion euros from the Hamburg state senate[208]. Thus each workplace was subsidized by over 160,000 euros.

[205] BMU, 2003: Umweltforschungsplan, Forschungsbericht 299 14 128 - Berücksichtigung von Umweltgesichtspunkten bei Subventionen

[206] BMU, 2003: Umweltforschungsplan, Forschungsbericht 299 14 128 - Berücksichtigung von Umweltgesichtspunkten bei Subventionen

[207] UBA, 2004: Hintergrundpapier: Flächenverbrauch, ein Umweltproblem mit wirtschaftlichen Folgen, URL: http://www.umweltbundes amt.de rup/flaechen/index.htm

[208] Spiegel Online, 2007: Subventionen: Völlig abgehoben, URL: http://service.spiegel.de/digas/servlet/find/ON=SPOX-148625

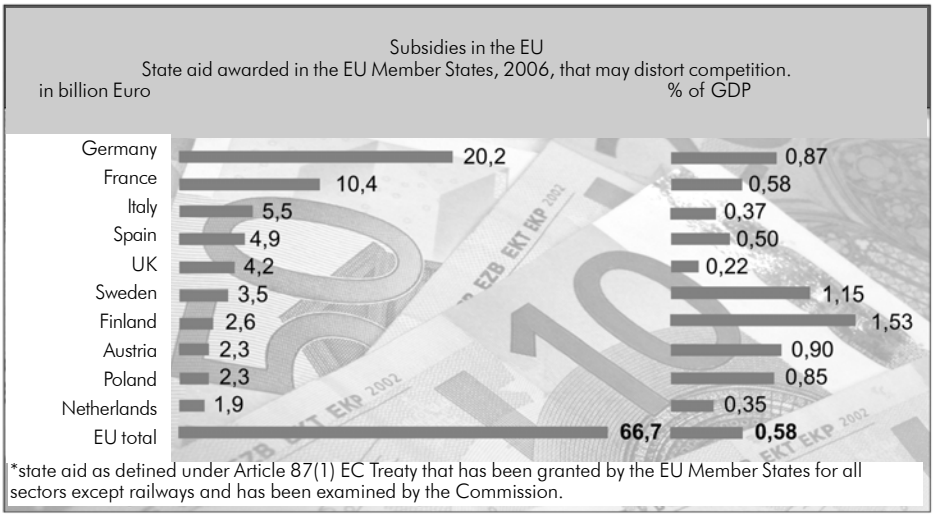
Table 8: Proposals for reform of the German housing sector at a glance

Subsidy	Proposal for reform	Budgetary effect	Environmental impact
Grant for home buyers	Reduction and greening of the base amount for new buildings; No eco-allowance for low-energy houses (only for passive homes); Easier access to eco-allowances for existing homes Introduce demolition subsidies	Clear budgetary savings (ca. 1-1.5 bill. euros, without demolition subsidies)	Reduction of area consumption Increased energy efficiency of new buildings Increased energy efficiency of existing buildings
Subsidized housing	Decrease funds to 0.5 bill. euros, use funds for combi-models and usage rights in existing buildings; support cost- and area-saving construction; Dismantle support for buying single-family homes	Funds freed: 1.8 bill. euros: Partial reallotment for modernization and cost- and are-saving construction Funds freed: 2.3 bill. euros Of this: Reallotment of 0.5 bill. euros for housing assistance	No use of further area; increased energy efficiency of rental units Reduction of area consumption
Housing assistance	No negative environmental impact per se; no reform proposal	Fiscal need: 1 bill. euros	Indirect: Less area consumption due to stopping construction of subsidized housing
Home and building loans	Dismantle home construction premiums	Reallotment of 0.5 bill. euros for housing assistance reform	No significant direct environmental impact; though financing of housing assistance: indirect reduction of area consumption by stopping construction of subsidized housing
Infrastructure subsidies	Dismantle income tax concessions for the new German states	1 bill. euros: reallotment in favor of targeted support for carbon dioxide ($C0_2$) reduction measures	No further support for new construction in urban areas; relieves pressure on area
Property taxes	Convert to area use taxes	Revenue neutral	Less pressure on area

Source: BMU 2003, p. 7

Airbus and its suppliers also received tens of millions in subsidies from both Lower Saxony and Mecklenburg Western Pomerania. The state of Lower Saxony built a technology center in Stade for four million euros, two million euros went toward research into extra light components. Mecklenburg Western Pomerania also spent millions on subsidies for the approximately 700 employees of Airbus suppliers and engineering offices[209].

[209] Tagesschau, 2007: Steuermillionen für A380- Produktion in Deutschland, URL: http://www.tagesschau.de/wirtschaft/meldung94454.html



Source: Report From The Commission; State aid scoreboard, Autmn 2007 Update; http://ec.europa.eu/comm/competition/state_aid/studies_reports/2007_autmn_en.pdf

M. PERVERSE SUBSIDIES ON THE EU-LEVEL

1. INTRODUCTION AND BASIC LEGAL PRINCIPLES

The principle of sustainable development has been anchored in the preamble and principles of the EU agreements since the treaties of Maastricht and Amsterdam were ratified. Accordingly, the EU is obligated to aim for a high level of environmental protection, to improve environmental quality and to integrate environmental policy into all public measures[210]. On the EU level, subsidies and state aid[211] fall under the key clause Art. 87 par. 2 and 3 of the EC Treaty. Article 87 forbids any state aid by Member States that "threatens to distort competition [or...] affects trade between Member States."[212] There are of course exceptions. These are laid down in EC Treaty Art. 87 par. 2 and 3 and aim to achieve the principle expressed in Art. 2 EC Treaty: the harmonious development of economic activities in the Community. A European Court of Justice (ECJ) decision ruled that Art. 87 EC Treaty does not provide a legal definition of "aid."[213] The meaning of the term must therefore be decided on a case by case basis. According to Rave (2005) "the flexible definition of the term 'aid' allows the ECJ and the European Commission to, independent of aim, react to each new form of national aid."[214] Exceptions to competition rules exist only when the regulations would obstruct the fulfillment of public tasks[215].

Subsidies that only distort competition within one Member State are not subject to the EU's ban on state aid. Tax laws are not standardized across EU Member State borders. It is therefore difficult to identify tax concessions on an EU level.

2. ENVIRONMENTALLY HARMFUL SUBSIDIES ON THE EU LEVEL AND THE 2003 REFORM OF THE COMMON AGRICULTURAL POLICY

The data available to the public on the structure of EU expenditures do not specify the exact proportion of subsidies within the total expenditures for different areas. Broken down roughly, the structure of expenditures is as follows[216]:

Without a doubt, the largest proportion of EU subsidies (including export subsidies), amounting to 58 billion euros, go toward the agricultural sector[217]. This is around 46 percent of the total 2007 budget. According to WWF, the EU supports the European farming industry with 108 billion euros annually[218]. In the post WWII era, agricultural subsidies were introduced to fight hunger, rampant in

210 The principles of EU environmental law are set out in articles 174 to 176 of the EC Treaty. This treaty aspires a high level of protection.

211 Each of the concepts of aid and subsidies may be defined in different ways. Here the are used synonymously.

212 EC Treaty: the code of competition is to be found under art. 85-94.

213 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.26

214 Rave, Tilmann, 2005: Umweltorientierte Subventionspolitik in Deutschland, p.26

215 EG-Vertrag art. 90 par. 2

216 EU, 2007: EU-Haushalt 2007, URL: http://ec.europa.eu/budget/library/publications/budget_in_fig/dep_eu_budg_2007_de.pdf , siehe auch EU-Haushalt 2008: http://ec.europa.eu/budget/library/publications/budget_in_fig/dep_eu_budg_2008_de.pdf

217 Brunner, Ariel/ Huyton, Harry, 2007: The Environmental Impact of EU Agricultural Subsidies in the WTO Green Box, (Draft), p.4

218 WWF, 2006: Umweltschädliche Landwirtschaft, press release from May 2006, p. 2, URL: http://www.wwf.de/fileadmin/fm-wwf/pdf-alt/landwirtscgaft/Status_Quo_der_WTO_Mai06.pdf

EU budget 2007 in figures

Expenditure estimates for EU policies (in billion EUR)	Budget 2007	Change from 2006
Sustainable growth	**54.9**	**15.4 %**
Competitiveness, *including:*	**9.4**	**18.6 %**
Education and training	0.9	31.0 %
Research	5.5	3.1 %
Competitiveness and innovation	0.4	53.6 %
Energy and transport networks	1.0	32.9 %
Social policy agenda	0.2	8.6 %
Cohesion, *including:*	**45.5**	**14.8 %**
Convergence	35.3	16.8 %
Regional competitiveness and employment	9.0	11.5 %
Territorial cooperation	1.1	-11.7 %
Natural resources, *including:*	**56.3**	**1.0 %**
Environment	0.2	17.9 %
Agricultural expenditure and direct aids	42.7	0.6 %
Rural development	12.4	3.0 %
Freedom, security and justice (including fundamental rights and justice, security and liberties, migration flows)	**0.6**	**12.8 %**
Citizenship (including culture, media, public health and consumer protection)	**0.6**	**0.8 %**
EU as a global player, *including:*	**6.8 (1)**	**4.5 % (2)**
Pre-accession	1.3	16.5 % (2)
European neighbourhood	1.4	11.1 %
Development cooperation	2.2	-5.4 % (3)
Humanitarian aid	0.7	3.1 %
Democracy and human rights	0.1	9.6 %
Common foreign and security policy	0.2	55.2 %
Stability instrument	0.1	143.6 %
Administration, *including:*	**6.9**	**5.1 %**
European Commission	3.3	5.3 %
Other institutions	2.6	4.8 %
Compensations to new EU countries (4)	**0.4**	**-58.6 %**
Total	**126.5**	**5.0 %**

(1) Including *Emergency Aid Reserve*.
(2) Excluding Bulgaria and Romania.
(3) Reduction due to the exceptional amounts allocated in 2006 to the post-tsunami, Afghanistan and Iraq reconstruction efforts.
(4) Amounts fixed by the accession treaties.

Source: EU 2007, p. 1

Europe at the time. Beginning in the 1980s, the EU Common Agricultural Policy (CAP) has been reformed repeatedly in order to fight overproduction in different sectors. Increasingly, the negative environmental impacts of agricultural subsidies are the subject of researchers' and politicians' attention[219]. One example is the 2001 study by Donald et al., which made a direct connection between agricultural subsidies and biodiversity loss in European bird species[220].

The CAP reform of 2003 is very important in many ways. On the one hand, subsidies must in the future be decoupled from production volume. Through the introduction of the Single Payment Scheme (SPS)[221], future agricultural subsidies shall be based either on historical production rates in the base period 2000-2002 or on area (Single Area Payment Scheme) or on a combination of the two[222]. National implementation of this measure began in 2005 or, in some Member States, 2007. Until 2013, transitional agreements can apply. Up to now, the reform does not apply to all agricultural sectors. Cultivation of fruit and vegetables for example are not yet subject to this reform; however the European Commission has proposed adding these sectors to the Single Payment Scheme. The real decoupling of production and subsidies is proceeding in general at a rather slow rate. We can assume that the reform rulings will in the future have a positive impact on environmental quality and biodiversity in Europe. However, basing subsidies on historical production rates preferences those farms that formerly produced in a particularly intensive, industrial, and environmentally counterproductive manner.

The second key element of the 2003 reform, the so-called Luxembourg agreement, is the cross-compliance criterion[223]. This measure can help promote environmental concerns in agriculture by setting financial incentives. One limitation is however that the effectiveness

219 Brunner, Ariel/ Huyton, Harry, 2007: The Environmental Impact of EU Agricultural Subsidies in the WTO Green Box, (Draft), Montreux, p. 5

220 Donald et al., 2001: Agricultural intensification and the collapse of Europe's farmland bird poulations, pp. 25-29

221 Ten countries started to implement the "Single Payment Scheme" in 2005, five countries started in 2006 and four countries started in 2007. Cf.: OECD, 2007: Agricultural Policies in OECD Countries - Monitoring and Evaluation 2007, pp. 105-109

222 Brunner, Ariel/ Huyton, Harry, 2007: The Environmental Impact of EU Agricultural Subsidies in the WTO Green Box, (Draft), Montreux, p.10

223 Gregor Louisoder Umweltstiftung/ Förderverein Ökologische Steuerreform e. V./ Naturschutzbund Deutschland e. V. (Hrsg.), 2004: Ökologische Finanzreform in derLandwirtschaft, p.43

of this measure depends upon how it is implemented by the Member States. Since we must assume that some governments have little incentive to reduce subsidies for their farmers, coupling subsidies to farmland area appears in a different light: it is worth owning large amounts of land, whether or not they are managed environmentally. Applying only the Single Area Payment Scheme, an option for the new EU Member States, is only possible until 2010.

The new EU strategy for rural development gives much greater importance to environmental concerns than was previously the case. Biodiversity conservation is explicitly named as a goal. These reforms as well are to be implemented between 2007 and 2013. The plan to simplify and consolidate the Strategy for Rural Development is a step forward. However despite these improvements, changes must be made to the CAP. First and foremost, many subsidy schemes must be transformed "from untargeted subsidies to environmentally targeted schemes with a much increased focus on biodiversity conservation."[224] A system of objectives and a hierarchy of objectives aimed at by individual subsidies must be more clearly formulated so that the intentions of subsidies are unambiguous. This is particularly true of CAP provisions.

But other sectors as well are worth mentioning. In particularly the EU budget of 1 billion euros for energy and transportation grids needs to undergo an environmental impact assessment and, if necessary, be adapted accordingly.

Connected to this is the EU regulation of financial aid and tax concessions that Member States offer for the expansion and upkeep of national energy and transportation infrastructure. Not only in Germany do "the particularly environmentally harmful energy carriers coal and plutonium as well as road and air transportation profit most" from the current taxation structure[225]. According to the European Environment Agency (EEA), the funds spent by Member States on their transportation infrastructure is almost as large as the entire EU budget; 125 billion euros[226]. These payments and concessions affect mostly national competition; their environmental impact has been largely ignored to date. It is possible that a comprehensive assessment would lead to a similar situation as did the analysis of urban air pollution due to fine particulate matter. In that case, the EU forced Member States to take action. A much-cited example in the transportation sector is the tax-exemption of kerosene. To date, in most EU Member States, "environmental objectives are not significant motivators for the bulk of subsidies."[227] The only exception is transportation subsidies for rail traffic. It is understood that rail transportation is more environmentally friendly than other means of transportation, in particular road traffic. It is therefore significant whether a country supports road construction or the expansion of its railway system.

Since however we must assume that national governments would feel the performance of public sector tasks to be threatened by any EU attempt to use environmental law to limit subsidies for transportation and energy infrastructure, the next steps in this sector should be planned carefully. In the end, only the framework is set on the European level. When looking at environmental impact, it is the details of national implementation schemes that play the decisive role.

In the countries that joined the European Union between 2004 and 2007, transitional agreements are in place that allow national governments to augment EU agricultural subsidies with national funds for a period of 10 years[228].

3. THE IMPLEMENTATION OF EUROPEAN AGRICULTURAL POLICY IN AUSTRIA - A BRIEF OVERVIEW

The Austrian agri-environmental program (ÖPUL) is a central element of the subsidy structure in the Austrian agricultural sector. In 2000, it was subsumed under the Strategy for Rural Development and has been co-financed by the EU since then. The current ÖPUL covers the time period 2007-2013[229]. Support under this program is strictly bound to sustainability criteria, making it a good practice example in Europe. Subsidy recipients "sign up for a contract which specifies precisely what actions are to be taken, or what services are to be delivered in return for payments."[230] In 2006, 643 million euros were distributed in the Austrian agriculture sector under ÖPUL. Eighty percent of Austrian farmers owning

[224] Brunner, Ariel/ Huyton, Harry, 2007: The Environmental Impact of EU Agricultural Subsidies in the WTO Green Box, (Draft), Montreux, p.18

[225] Meyer, Bettina/Müller, Klaus, 2002: Subventionsverstecke aufstöbern, p.22

[226] EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe, p. 6

[227] EEA, 2007: Technical Report 3, Size, structure and distribution of transport subsidies in Europe, p. 7

[228] OECD, 2007: Agricultural Policies in OECD Countries – Monitoring and Evaluation 2007, p. 105

[229] Lebensministerium Österreich, 2007: Österreichisches Programm für die Entwicklung des ländlichen Raums 2007-2013

[230] OECD, 2007: Agricultural Policies in OECD Countries – Monitoring and Evaluation 2007, p. 115

88% of agricultural land participated in the project.

Austria has implemented the SPS since 2005. Payment levels are set by historical reference values from 2000-2002. Above we explained how this privileges those farmers who, to the detriment of the environment, produced more quantity than quality during this time period. Also worthy of criticism is the fact that, in the cattle breeding sector, suckler cow premiums and slaughter premiums for calves are tied to production amounts. Further exceptions from a pure SPS are the slaughter premiums for adult animals and for the cultivation of hops. As of 2007, subsidies for milk production are also integrated into the SPS.

In 2005, Austria subsidized its forestry and agricultural sector to the tune of 99 million euros[231]. Funds for 59 percent of this budget came from the European Union, 20 percent came from the federal government and 21 percent from the Austrian states. The largest proportion of the budget, 58 percent, went to the Strategy for Rural Development, the remaining 42 percent was almost completely within the SPS.

In a comparison of European countries, Austrian subsidy policy in the agricultural sector is positive. Decoupling of production and subsidy volume also proceeds slowly in Austria, but at least faster than the EU average. It is also encouraging that most of the funds go to the Strategy for Rural Development, which is at least acceptable from an environmental point of view.

However we must in the final analysis emphasize that Austria too still has many steps to take to create a truly sustainable, environmentally-friendly subsidy scheme. The environmental impacts of every subsidized activity must be considered and weighed against the usefulness of the subsidy in other areas. In the future, no money should flow unless an environmental impact assessment is done and the results are positive or at least neutral. This applies not only to agricultural land consumption and groundwater pollution through fertilizers, but also to methane emissions from cattle breeding.

4. EU STRUCTURAL FUND

The hierarchy of priorities within EU structural policy quickly becomes clear when one looks at the distribution of funds. It may be possible to quickly find an explanation that sounds plausible for each post. Nevertheless it can clearly be seen that in particular well-organized lobby groups that are able to put pressure on political processes as well as individual Member States profit most from the structural funds. Environmental concerns play an at best subordinate role, although the EU is ostensibly bound to comply with environmental and sustainability criteria in all of its measures. According to the WWF, between 2000 and 2006, 22.5 of the budget went to building transportation, energy and telecommunication infrastructure in the Member States[232]. Almost one quarter of the budget went toward economic development and almost 30 percent went into the European Social Fund. Since in the end these funds are distributed and administrated by the Member States themselves, environmental criteria play only a small role in awarding them. Rather they focus on strengthening "national" economies and agricultural programs. However on the EU level as well, for example via the Social Funds, the first and foremost goal is creating jobs and closing the economic gab between European regions. Thus more than two-thirds of the structural funds are strongly suspected of causing extremely negative environmental impacts and consequently also biodiversity loss. To counteract this, it is absolutely essential that environmental sustainability criteria be integrated into the assessment and selection of concrete national projects. Often instead "funds are being used for some of the exact activities that the Commission has recognized as key threats."[233] Admittedly, agricultural policy reform - to be implemented between 2007 and 2013 - is a step in the right direction. But here too national implementation strategies - and sufficient EU control of meeting environmental criteria - are critical if environmental degradation is to take a turn for the better.

An example of the counterproductive utilization of European funds is the continuing construction of dams in Spain, which has led to massive biodiversity loss[234]. Lynx in particular are suffering from the fragmentation of their habitat.

[231] OECD, 2007: Agricultural Policies in OECD Countries – Monitoring and Evaluation 2007, p. 117

[232] WWF, 2006: Conflicting EU-Funds: Pitting Conservation Against Unsustainable Development, p. 20

[233] WWF, 2006: Conflicting EU-Funds: Pitting Conservation Against Unsustainable Development, p. 27

[234] WWF, 2006: Conflicting EU-Funds: Pitting Conservation Against Unsustainable Development, p. 50

In Greece, 50 percent of the costs for the Egnatia highway were co-financed with EU money. Compliance with environmental criteria was lacking or non-existent. This is particularly interesting in light of the fact that the EU aims to protect the very same brown bears that were forced to contend with massive limitations to their habitat through a further program - the LIFE project. Finally, we would like to mention the EU support of the construction of the "Via Baltica"[235] - in particular by Poland.

In the area of water as well, funds distributed by the EU often contribute to the direct threat to and extinction of various specious as well as to the destruction of habitats. A prominent example is the expansion of the European canal system. In particular the increase of marine traffic on the Danube threatens beaver, otter and eagles. By 2020, 225 billion euros in EU funds shall have been spent on the "improvement" of the Danube for transport. It is of imminent importance for the threat to biodiversity that compliance with environmental criteria is strictly monitored in all countries bordering the river and that particularly harmful measures are not implemented at all.

The list of EU sponsored projects that cause biodiversity loss could be continued. The CEE Bankwatch Network has compiled a compelling catalog of such projects[236]. It calls attention to a number of infrastructure projects in Central and Eastern Europe that are either are not bound to environmental criteria or for which there is insufficient monitoring and sanctioning. As important as economic progress is, it is vital that short-sighted thinking and action not cause future monetary losses due to biodiversity reduction - outweighing the gains of infrastructure projects start here.

[235] WWF, 2006: Conflicting EU-Funds: Pitting Conservation Against Unsustainable Development, p. 58

[236] CCE Bankwatch Network: EU-Funds in Central and Eastern Europe: 6 billion euros for damaging projects? press release from 10. 3. 2006, URL: http://www.bankwatch.org/newsroom/releases.shtml?x= 1601568

N. SUMMARY AND RECOMMENDATIONS

Environmentally harmful subsidies are a decisive force behind biodiversity loss on our planet. Diverse sources confirm that vast sums between 500 and 1500 billion dollars directly or indirectly support environmental degradation.

The UN Conference of the Parties COP9 in May 2008 in Bonn had the chance to take concrete steps toward dismantlement. At the same time, national governments and confederations of states such as the EU should take the lead in dismantling environmentally perverse subsidies.

⇨ Environmental impact assessments should be compulsory for all subsidies.

All direct and indirect financial incentives should be examined for negative environmental impacts. Mitigating negative impacts by, for example, coupling subsidies to environmental criteria should also be considered.

Experience has shown that it is difficult to get rid of subsidies once they exist. Many lobbies and subsidy recipients have become accustomed to being subsidized by society as a whole. In Germany for example, around one-fourth of existing tax concessions were introduced before 1940[237]. This too explains why so many subsidies are no longer up to date and contradict the guiding principle of sustainable development.

Many subsidies are outdated from an economic point of view as well and are approaching the limits of growth. Previously, subsidies were able to increase profits significantly in light of seemingly endless resources - for example fish or intensive agriculture. Today, they incre pressure on limited habitats and hinder the sustainable, and thus long-term, utilization of natural resources.

⇨ Therefore all subsidies should be limited in duration. Furthermore, impact monitoring and performance reviews of all subsidies should be conducted regularly to assess environmental impact. Subsidy controlling would create transparency and provide important leverage to ensure tax monies are used efficiently and promote sustainable development.

Times are auspicious for a wide-spread phase-out of environmentally harmful subsidies. Agricultural prices and harvests have risen, partly as a result of the biofuel boom and the global demand for more raw materials. Environmental consciousness has also grown. In the fishing industry as well, falling harvests have forced many to set new priorities.

People are increasingly aware of the value of forests, wetlands and bogs for climate protection and global biodiversity. Within the global climate protection regime, forests and bogs have gained fiscal power as CO_2 reservoirs.

There are therefore also many **good practice examples** of the dismantlement of perverse subsidies:

- New Zealand began a phase-out of agricultural subsidies in the 1980s and has now almost completely done away with them, although - or because - it is very dependent upon farming. There are more farmers in New Zealand today than when the subsidies were dismantled. Chile and Argentina have also made sharp cuts in their agricultural subsidies.
- Russia has lowered its subsidies for fossil fuels from 29 billion dollars to 9 million dollars; China from 25 billion to 10 billion[238].
- Brazil significantly lowered its support of cattle breeding in the Amazon region and introduced the environmental tax ICMS-E as a fiscal compensation measure[239].
- Some Asian countries have recognized the damage done by nitrate fertilizers and have reduced their massive subsidies. Indonesia sank fertilization subsidies from 732 million dollars to 96 million dollars. Pakistan lowered its subsidies from 178 million to 2 million. Bangladesh and the Philippines completely got rid of their chemical fertilizer subsidies of 56 and 48 million dollars respectively[240].

Nationally as well - particularly given tight public budgets - reduction of subsidies is at a high and is in principle supported by all political parties and trade associations. In 2007, Germany's grand coalition dismantled

[237] UBA, 2003: New study: Abbau umweltschädlicher Subventionen spart Milliarden und hilft der Umwelt, press release 12/2003, URL: http://www.umweltbundes amt.de/uba-info-presse/2003/pd05503.htm

[238] Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike

[239] Meyer, Christian/ Schweppe-Kraft, Burkhard, 2006: Integration ökologischer Aspekte in die Finanzpolitik

[240] Myers, Norman/ Kent, Jennifer, 1998: Perverse Subsidies – Taxes Undercutting our Economies and Environments Alike

Dismantling of environmentally harmful subsidies by the grand coalition in 2007

Environmentally harmful subsidies	Estimated volume, medium-term
Dismantling the grant scheme for home buyers 1/1/2006. Full financial benefit of 5.9 billion euro after 8 years (2013) [241]	3,0 bill. euros
Commuter tax allowance only after kilometer 21 as of 1/1/2007.	2,5 bill. euros
Partial taxation of biofuels: 0.37 bill. euros (2006) Beginning 1/1/2007, blending quota and full taxation of biofuel admixture: 1.6 bill euros (2007)	2,3 bill. euros
Introduction of a heating coal tax	0,035 bill. euros
Total effect	**ca. 7.8 bill. euros**

environmentally harmful subsidies amounting to around 8 billion euros by disposing of the grant scheme for home buyers and limiting the commuters' tax allowance. Germany also resolved to end coal subsidies by 2018 - the "remaining" payments add up to 21.6 billion euros.

Aside from the targeted reduction of individual allowances, it has also been in part possible - for example in the Koch-Steinbrück Initiative[242] - to proceed using the "lawnmower method."

The German Federal Environment agency calls for "dismantling or transforming subsidies that do not fulfill the fundamental principles of a rational subsidy policy, because they (1) are inefficient, (2) do not achieve the goal of the subsidy or (3) contradict the aims of sustainable, environmentally sound development. […]

As long as the negative environmental impacts of subsidies are not mitigated, environmental protection will be forced to resort to financial demands."[243]

Internationally, the dismantlement of environmentally harmful subsidies meets with resistance from diverse interest groups. The fact however remains that poor and indigenous segments of the population are hit hardest by biodiversity loss[244]. They lose forests as a source of fuel and as their hunting grounds. They lose coastal fishing grounds and suffer from exporting farmers' water consumption. At the same time, agricultural and fishing subsidies distort international competition and prevent sustainable, self-supporting production in developing countries. Most subsidy funds do not go toward sustainable resource use in the South as part of a global poverty reduction strategy, but rather sponsors small segments of the agricultural and fishing industries in the rich North.

⇨ Dismantling subsidies and the fight against poverty go hand in hand. Many subsidies in the North lead to poverty in the South.

Many reports and case studies show that well-intentioned compensations in the same sector are often anything but good. For example, the effect of some fishing industry scrapping subsidies is that old vessels are laid up and the money is used to build new boots. At the same time, fishing vessels that are ostensibly laid up provide fishermen with more money for illegal fishing. This can even raise de facto fishing capacities, which were supposed to have been lowered.

Similarly, EU compensation payments for agricultural subsidies in developing countries - for example for cotton - are counterproductive because they over-subsidize one sector without concurrently ensuring sustainable development in that sector.

⇨ Compensation payments should be flanked by social measures and aim at creating jobs in new, promising sectors.

If subsidies are to make sense, they must adhere strictly to sustainability criteria. This means that all short- and long-term impacts must be assessed, since impacts are often different in different areas. Worst-case examples of this are the CDM certificates for dam construction projects in the rainforest of Brail

[241] Erwartetes Mehraufkommen 2009, see (BT-Drs. 16/108)

[242] Die Tagesschau, 2007: Koch und Steinbrück mähen Subventionen, URL: http://www.tagesschau.de/inland/meldung286902.html

[243] UBA, 2003: New study: Abbau umweltschädlicher Subventionen spart Milliarden und hilft der Umwelt, press release 12/2003, URL: http://www.umweltbundesamt.de/uba-info-presse/2003/pd05503.htm

[244] Millennium Ecosystem Assesment, 2005: Millenium Assessment Report

or EU subsidies for biofuels and the oil palm boom in Indonesia.

⇨ Subsidies should be coupled to strict adherence to environmental and social criteria.

The protection of biodiversity is, when all costs and advantages are weighed, often also the more economical alternative to the unsustainable exploitation of resources. Therefore subsidies coupled with strict monitoring should be used to promote the sustainable use of resources and the protection of biodiversity. This requires far lower sums than are spent today for environmentally harmful subsidies.

⇨ The monies freed by the dismantlement of subsidies should at least in part be used for sustainable resource use and biodiversity conservation.

Perverse subsidies often not only distort competition, they also create new bureaucracy, free-rider effects and the danger of corruption. Reducing them on the other hand, instead of implementing new instruments, usually doesn't cost anything. Before introducing new taxes and tariffs - on nitrogen or pesticides for example - first the subsidy system should be examined for reverse incentives. In India for example, both taxes on and subsidies for gasoline exist, with contradictory effects and high economic and ecological costs[245]. Because subsidy donors frequently work on different levels, contradictory effects are often unavoidable. It is therefore easily possible that, as for example in Great Britain and France, there is a tax on airline tickets and at the same time regional airlines receive billions of euros in subsidies.

⇨ Dismantling subsidies has priority. Before regulatory legal measures are taken or new taxes and tariffs introduced to tackle an environmental problem, an examination should first take place whether environmentally harmful subsidies in this sector can be phased out and dismantlement begun. It is often also wise to combine subsidy phase-outs with other environmental instruments to create the most effectiveness.

The most important measure against subsidies is transparency. Who receives subsidies for what? Often the path taken by subsidies - especially indirect subsidies - is concealed and opaque. For example, for a while the German federal government refused to publish the concrete recipients of EU agricultural subsidies or the amounts they were given[246]. At the same time the German federal government's bi-annual subsidy report is exemplary, even if it makes no environmental assessment.

⇨ National governments should therefore publish a transparent and detailed report of all direct and indirect subsidies with a negative impact on biodiversity. International organizations should be able to check all data and conduct independent research.

A large amount of these subsidies affect international competition, providing domestic industries, production facilities and fishing fleets with one-sided advantages. Therefore many international agreements and studies demand the dismantlement of environmentally harmful subsidies.

⇨ International treaties must contain binding agreements on the phase-out of environmentally harmful subsidies with concrete goals and timelines. A global environmental trade organization must have the power to take action against environmentally harmful subsidies and to impose penalties. At COP9, participants missed the opportunity to make a breakthrough by putting aside national egotism and putting the global preservation of biodiversity at the forefront.

If some countries are - as in the Kyoto Protocol - ready to take the vanguard and earmark at least some of their budget for global biodiversity conservation, the international community has a chance to finally suit their actions to their words and work toward their stated aim of reversing the trend of biodiversity loss by 2010. Success in this area will only be possible however if a group of powerful countries make a binding commitment - with sanctions in case of violation - to meeting clearly defined goals within a limited time span.

[245] Ramkrishna Kashelkar, 2007: Subsidy fossil turns fuel for promoting inefficient economy, Indian Economic Times from 14.11.2007, URL: http://economictimes.indiatimes.com/News/News_By_Industry/Energy/Oil__Gas/Subsidy_fossil_turns_fuel_for_promoting_inefficient_economy/rssarticleshow/2539469.cms

[246] WWF, 2006: EU-Agrarförderung, mehr Licht ins Subventionsdickicht bringen – Ein neues Bündnis fordert, die Vergabe von EU-Agrarbeihilfen öffentlich zu machen, URL: http://www.wwf.de/fileadmin/fm-wwf/pdf-alt/landwirtscgaft/Initiative_Punktum.pdf

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NGO coordination for the 10th Conference of Parties to the Convention on Biological Diversity (CBD) in Nagoya (Japan) 2010

The German League for Nature and Environment (DNR) and the NGO Forum on Environment and Development are hosting the COP 10 Project Office from June 2009 to December 2010. The office coordinates follow-up activities to COP 9 as well as the NGO action program in preparation to the 10th Conference of Parties – COP 10 – to the Convention on Biological Diversity and the 5th Meeting of Parties – MOP 5 – to the Cartagena Protocol on Biosafety in Nagoya 2010.

Under the German presidency to the CBD, the project aims to coordinate national and international NGOs in their activities and actions on CBD related issues. It provides a platform for civil society actors to voice their concerns regarding the major themes under discussion at the COP10 and MOP5.

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