

STUDY on behalf of Deutscher Naturschutzring (DNR)



# Environmentally Harmful Subsidies in Germany: Focus on Biodiversity

**How harmful incentives endanger biological diversity**

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## Content

This brief study first explains different concepts of subsidies and looks at Germany's declarations on subsidy reduction in the context of international agreements such as the Convention on Biological Diversity (CBD). In addition, Germany's reporting on subsidies is presented (Chapters 1 and 2). It then takes stock of which environmentally harmful subsidies exist in Germany that have a negative impact on biodiversity (Chapter 3). Chapter 4 describes in detail examples of particularly

significant subsidies from the four areas of mining of raw materials, agriculture, transport and construction. For these, an assessment is made of the extent to which they are harmful to biodiversity. In addition, the share of these subsidies that is harming biological diversity is quantified.

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## About FÖS

Forum Ökologisch-Soziale Marktwirtschaft (FÖS) has been researching and disseminating information about the potential and benefits of environmental fiscal reform (EFR), the application of market-based instruments (MBI) and the removal of environmentally harmful subsidies for more than twenty years. FÖS is widely recognized among policy-makers, NGOs, companies

and trade unions for its expertise in fiscal instruments, environmental and climate policy and foremost for its capacity to evaluate and develop policy proposals in the field of EFR. Over the last years FÖS has led and participated in numerous research projects and has a proven track record in the development, analysis and evaluation of environmental policies.

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## Executive Summary

Climate change, intensive agriculture, the destruction and fragmentation of habitats and increasing soil sealing are leading to an ever-increasing decline in biodiversity in Germany.

Environmentally harmful subsidies create economic incentives that reward behaviour that is harmful to nature. They thus contribute to the loss of biodiversity. The **29 subsidies** identified in this analysis have a total volume of more than **67 billion euros per year**. However, not all subsidies have a biodiversity damaging effect as a whole, so that the total volume cannot be equated with the biodiversity damaging volume. Important examples of subsidies are:

- In **resource extraction**, many mineral resources are exempt from extraction fees and water extraction charges.
- In **agriculture**, the first pillar of EU agricultural policy still consists mainly of area-based direct payments. The reduced VAT rate on animal-based

food products promotes the consumption of resource-intensive foods such as meat, fish, milk and eggs.

- In the **transport sector**, the travelling allowance provides incentives for long commuting distances, while company car and privilege for diesel promote motorised private transport.
- The "Baukindergeld" also promotes the land- and resource-intensive **construction** of new single-family homes on Greenfield sites.
- In the **energy sector**, there are numerous exemptions for the industry that directly favour the consumption of fossil fuels or reduce the efficiency of electricity consumption.

For selected subsidies, the biodiversity damaging share was quantified and the extent of the damaging effect was assessed according to the categories low, medium and high (Table 1). The criteria for this were the causality between subsidy and biodiversity loss, the area impact, the impact intensity and the duration of the intervention.

**Table 1: Assessment of the biodiversity damaging effect of selected subsidies**

Subsidy	Subsidy volume	Biodiversity damaging share		Extent of the damaging effect
	Billion euros p.a.		Billion euros p.a.	
Discounts from the extraction levy	0.63	completely	0.63	medium
Common Agricultural Policy (CAP), first pillar*	4.85	predominantly	3.39 - 4.85*	high
Reduced VAT rate on animal-based products	5.2	completely	5.20	high
Travelling allowance	4.8	partially	2.40 - 3.36	high
"Baukindergeld"	1.0	partially	0.265**	high

Source: own representation \* The environmental and nature-damaging effects of CAP subsidies, especially of the first pillar, have repeatedly been the subject of numerous studies and are therefore not considered in detail here. The biodiversity-damaging share is given as a range without and with greening measures (no own quantification). \*\* proportionate funding volume divided by duration (10 years)

The **VAT reduction on animal-based food products** scores poorly in all categories: the subsidy as a whole is harmful to biodiversity, it has a high annual subsidy volume, and it has a particularly damaging effect on biodiversity by giving meat, fish, milk and eggs a tax advantage over plant-based alternatives.

The **travelling allowance** also has a strongly damaging effect: the reason for this is the high volume of subsidies and the numerous negative consequences of road traffic, but also of urban sprawl on biodiversity.

In the case of the "**Baukindergeld**", the share that promotes new buildings, especially outside the established settlement core, has a negative effect on

biodiversity. However, the financial scope is smaller than that of the VAT reduction and the travelling allowance.

The **discounts from the extraction levy** for mineral resources are also lower in financial terms. Nevertheless, the extraction of raw materials at the site of intervention often has serious consequences for flora and fauna, and the use of raw materials should therefore be as efficient as possible.

## 1 Current Situation: Biodiversity Damaging Subsidies and Targets for Reduction

Next to climate change, the decline of biodiversity is the most pressing environmental problem of our time (cf. Dasgupta 2021). In Germany, too, biodiversity has been declining for decades. The decline in insects is particularly striking (cf. Seibold et al. 2019). Only recently, however, a comprehensive evaluation also showed a decline in over 70% of plant species (Eichenberg et al. 2020). Biodiversity is not only the quantitative number of plants and animals of a species, but above all the diversity of species, their genetic diversity and the existence of diverse ecosystems.

In Germany, intensive agriculture, the destruction and fragmentation of habitats and the increasing sealing of soils are the main drivers of biodiversity loss. However, nutrient and pollutant inputs from sources outside agriculture, deficits in forest management and fisheries, hydraulic engineering measures, tourism and climate change also play a major role (BfN 2019). Through international trade and the import of raw materials and consumer goods, Germany also indirectly contributes to biodiversity loss in other countries (FÖS 2008). Germany's deficits in biodiversity conservation are also largely due to the fact that **economic incentives reward behaviour that is harmful to nature** and that it has not yet been possible to counteract this sufficiently (BfN 2019). The stronger these economic incentives are, the more difficult it is to counteract them with legal regulations and prohibitions alone. Ideally, environmentally friendly behaviour should also be economically rewarding and behaviour that is harmful to nature should not lead to advantages but to disadvantages in competition.

Contrary to this, however, there are still numerous subsidies and regulations of a subsidy character in Germany that have a negative impact on biodiversity.

These continue to exist despite the fact that Germany has repeatedly signed **declarations on the reduction of environmentally harmful subsidies** within the framework of national and international agreements such as the G7, G20, the Organisation for Economic Co-operation and Development (OECD), the European Union (EU) and the United Nations (UN) for almost 30 years and has set itself corresponding goals (cf. FÖS 2020c). The subsidies are ecologically problematic and economically inefficient (Gubler et al. 2020). This is because the damage they cause often has to be compensated for by the general public. They distort prices, so that products or production methods that are beneficial for biodiversity, such as organic farming, must in turn be promoted at unnecessarily high cost.

In the context of biodiversity conservation, the UN **Convention on Biological Diversity** (CBD) is the most important international agreement. Within the framework of the Convention, the member states committed themselves in 2010 with the so-called Aichi Targets to, among other things, abolish, redirect or redesign biodiversity-damaging subsidies by 2020:

*„By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts“  
(BfN 2010)*

In 2015, this goal was also included in the **2030 Agenda for Sustainable Development** at the UN World Summit on Sustainable Development. The European Union's **Biodiversity Strategy 2020** (European Commission 2011) also aims to reduce environmentally harmful subsidies. In this strategy, the Commission commits itself to working with the member states to reform, phase out and ultimately eliminate environmentally harmful subsidies.

Finally, the German **National Strategy on Biological Diversity** demands "to tailor taxation and subsidy policies more closely to the conservation of biological diversity" and "to increasingly abolish ecologically counter-productive transfer payments" (BMUB 2015).

The goal of a comprehensive elimination of environmentally harmful subsidies has not yet been achieved in Germany, as in the other signatory states to the Biodiversity Convention. In Germany, there are at least 29 subsidies with a volume of more than 67 billion euros per year that are completely or partially harmful to biodiversity. In 2021, at the 15th COP (Conference of the Parties) in Kunming, China, a successor framework agreement, the **Global Biodiversity Framework**, is to be adopted for the Aichi Targets, which expire in 2020. The intention is to agree to phase-out subsidies that are particularly harmful to biodiversity by 2030. However, this goal must be backed up with concrete measures so that the declarations of intent are followed by deeds.

## 2 Subsidy Concepts and Reporting on Subsidies

Subsidies are benefits from public funds or the waiver of taxes or duties, which usually benefit a specific subgroup. The receipt of a subsidy is usually linked to certain behavior, but no direct counterperformance is required (Bär u. a. 2011, Rave 2005). Moreover, there is no generally accepted definition of subsidies, neither in practice nor in science (Bär et al. 2011). In principle, definitions of varying narrowness can be distinguished (see box). Depending on how broadly the concept of subsidy is defined, the payments covered and also the volume of subsidies differ. Comparisons are therefore only possible if they refer to the same concept of subsidy.

### Subsidies in the Federal Government's Subsidies Report

- a. Direct financial aid to private companies (e.g. subsidies for livestock buildings from the common task of improving the agricultural structure).
- b. Exemptions in tax laws for certain economic activities (e.g. tax relief for the agricultural sector for agricultural diesel)
- c. Consumer benefits for certain goods and services that benefit specific industries (z. B. Travelling allowance, "Baukindergeld")

### Subsidies in the Federal Environment Agency's subsidy report, in addition to a-c:

- d. Absence of facts in tax laws that would have to be included in the system (e.g. kerosene in the energy tax).
- e. Regulatory or technical provisions that give preference to certain products (e.g. biofuel quota, feed-in tariffs under the Renewable Energy Act).

### Definition of the International Monetary Fund ("price gap approach"), alternative to a-e:

- f. Failure to price in external costs, e.g., from emissions of climate gases or local air pollution.

Source: FÖS (2017)

The Federal Government's Subsidy Report provides regular reporting on federal financial assistance and tax incentives. The most recent, 27th Subsidy Report was published in November 2019 (BMF 2019). However, subsidies from state and local governments are not systematically recorded.

With this report, the German government is fulfilling its transparency obligations under Section 12 of the "Gesetz zur Förderung der Stabilität und des Wachstums der Wirtschaft" (StabG). Reporting can identify trade-offs, for example between environmental and eco-

nomical policy goals, and enable political and social discussion about the need for subsidies, as explained in the report itself:

*"With regard to negative environmental effects, subsidies should also be critically scrutinized if they result in a disproportionate consumption of resources and damage to the environment and health, or if they incur costs for their elimination." (BMF 2019)*

For the federal subsidies listed in the report, the respective responsible departments conduct a **sustainability assessment** based on the German Sustainability Strategy (BMF 2019). The economic, social and ecological dimensions of sustainability are taken into account. However, the underlying analysis has so far lacked transparency and is not carried out in detail for all sustainability dimensions. The scope of the audit also differs from department to department (FÖS 2017b). As a result, the German government sees no need to reform most of the environmentally harmful subsidies and therefore does not list any strategies for reducing them. **Evaluations** commissioned by the Federal Ministry of Finance (BMF) itself (FiFo Cologne 2019), on the other hand, come to different conclusions and recommend reforming or eliminating numerous subsidies.

In addition to the subsidy report, which is prepared under the auspices of the Federal Ministry of Finance, the **Federal Environment Agency (UBA)** also publishes its own report (UBA 2016), but at irregular intervals. The last report published in 2016. It deals specifically with environmentally harmful subsidies in Germany. In addition to grants and tax concessions, other types of subsidies are also included (see box), and environmentally harmful subsidies from the federal states are also covered in part. The UBA subsidy report also contains far-reaching proposals for subsidy reduction (UBA 2016).

In 2019, the German Federal Agency for Nature Conservation (BfN) published a report on subsidies that are harmful to nature, calling for their removal and for environmental costs to be charged to the polluter through the levying of charges (BfN 2019).



### 3 Overview of environmentally harmful subsidies in Germany

Some of the subsidies granted in Germany provide incentives for environmentally harmful behavior, consumption and production, thus contributing to the loss of biodiversity. Such subsidies can be found in many areas: For example, the promotion of individual transport

leads to the fragmentation of land through road construction. Subsidies for resource extraction and intensive agriculture accelerate biodiversity loss. The following subsidies in the areas of **resource extraction, agriculture and forestry, transport, construction and housing, tourism, and energy production and consumption** have a negative impact on biodiversity. A total of 29 subsidies were identified (Table 2).

**Table 2: Übersicht über Subventionen mit potentiell\* negativem Einfluss auf die Biodiversität**

Sector	Subsidy	Volume (M Euro p.a.)	Year	
Resource	Discounts from the extraction levy	629	2019	
	Privileges for water withdrawal charges	17	2017	
Agriculture, forestry and fishing	Direct payments first pillar CAP	4.850	Ø 2014-2020	
	Agricultural subsidies (2nd pillar CAP)**	1.300	Ø 2014-2020	
	GA Improvement of agricultural structure and coastal protection	600	Ø 2014-2020	
	European Maritime and Fisheries Fund (EU fisheries subsidies)	30	Ø 2014-2020	
	Fishing fleet: adaptation and development measures	1,7	2018	
	Structural measures for sea fisheries	0,04	2018	
	Reduced VAT rate on animal products	5.200	2012	
	Vehicle tax exemption for agricultural machinery	470	2018	
	Tax concession agricultural diesel	467	2018	
	Energy crop cultivation (EEG)	k.A.	-	
	Traffic	Diesel energy tax concession (diesel privilege)	8.190	2019
		Travelling allowance	4.800	2017
Tax advantages company car		4.395	2019	
Energy tax exemption kerosene		8.262	2019	
VAT exemption international flights		4.191	2017	
Subsidies for regional airports		41	Ø 2014-2018	
Energy tax concession inland navigation		141	2018	
Energy tax concession for working machines in seaports		25	2018	
Financial contribution to maritime shipping		47	2018	
Construction and housing	"Baukindergeld"	861	2020	
	"Wohnungsbauprämie"	162	2018	
	GA Improvement of the regional economic structure and European Regional Fund	320	2018	
	Subsidy for fossil heating systems	350	2020	
Tourism	Sales tax reduction for accommodation services	1.435	2018	
Energy	Energy tax concession for electricity generation	1.800	2019	
	Electricity price exceptions industry	17.800	2012-2019	
	Energy tax concessions industry	1.137	2019	

Quelle: own presentation. The source information for the subsidy volumes can be found in the following descriptions of the subsidies. \*Subsidies are fully, proportionately or, depending on the implementation, harmful to biodiversity (see chapter 4). \*\*Predominantly positive contributions to biodiversity, see chapter 3.2.

These subsidies have a total volume of over 67 billion euros per year. However, not all of them have a direct impact on biodiversity. For example, subsidies for energy production and consumption have a predominantly indirect effect by promoting fossil fuels that contribute to climate change. Some subsidies – such as the EU's agricultural subsidies – do not have a detrimental

effect on biodiversity in their entirety because, for example, certain sub-programs are intended for nature and species conservation or are conducive to it. Nevertheless, they contain harmful components, which is why they are listed below. The total volume of the biodiversity-damaging share of the identified subsidies could not be determined within the scope of this study.

### 3.1 Raw material mining

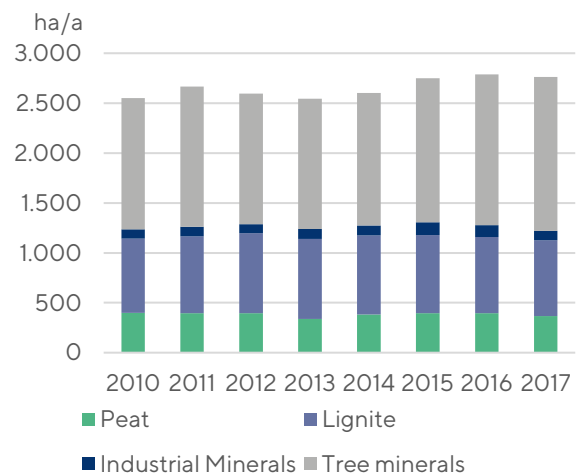


#### Effects on biodiversity

The mining of raw materials in Germany is accompanied by an **irrevocable encroachment** on soils and landscapes. The water balance and water quality can be permanently impaired. This has consequences for biodiversity. Land consumption due to the extraction of raw materials initially fell after reunification but has been rising again for a number of years and stood at around 2,760 hectares (ha) in 2017 (Figure 1). This corresponds to a daily new land use of about 7.5 hectares or more than 10 soccer fields. Most of this is due to the extraction of **construction minerals**, followed by **lignite mining** and **peat extraction**. Industrial minerals, on the other hand, are only mined to a small extent in Germany.

Years or decades can pass between the new use of land for raw material extraction and its renaturation or recultivation. The area currently used for raw material mining is therefore much larger than the new area taken up each year. In 2017, a total of 152,775 hectares were occupied by mining operations, quarrying, open-pit mining and pits. This is almost equivalent to the area of the two city-states of Berlin and Hamburg and is about 55 times the amount of new land taken up each year (UBA 2019a).

**Figure 1: Annual land consumption due to raw material extraction (ha/a)**



Source: UBA 2019a. Industrial minerals: pumice, clays and crude kaolin, feldspar and other. Sands (as of 2015), quartz sands, limestone and dolomite stones. Construction minerals: gypsum and anhydrite stone, lava slag (as of 2015), crushed natural stones, construction sand, construction gravel, etc., loam and brick clay (as of 2015), natural stones.

Opencast **lignite mining** has particularly **serious environmental consequences**. In terms of energy content, lignite is the fossil fuel with the highest climate, environmental and health impact.

- Opencast lignite mining requires a particularly large amount of land in relation to the volume of production (see Figure 1). The development of new mining areas is associated with the destruction of the landscape and settlements.
- Mining leads to damage of the natural groundwater balance, which is associated with impairment of drinking water wells, wetlands and their plant and animal species.
- In addition, indirect impacts on biodiversity arise from the consequences of climate change.



## Important environmentally harmful subsidies

### Discounts from the extraction levy

The **extraction fee** is levied on the extraction of **mineral resources**. According to Section 31 of the German Federal Mining Act (BBergG), it amounts to **10% of the market value** and can be increased to up to 40% by the federal states, which regulate the details of collection and payment by statutory order. However, both lignite mining and the building materials in the ground, such as sands, gravels and natural stones, are generally exempt from the levy. Other mineral resources, such as rock salts, are often subject to reduced levy rates. The lost revenue is to be regarded as a subsidy. If sales are taken as the market value, the subsidy volume is up to **629 million euros**, of which approx. **180 million euros** is for **lignite** alone<sup>1</sup>.

### Privileges for water withdrawal charges

Water abstraction charges reflect the value of the public service for the use of resources and at the same time represent incentive taxes for **sustainable water management** and for the **allocation of environmental and resource costs** (§ 1 and § 6a Water Resources Management Act). Depending on the federal state, different **fees** are to be paid for the **water withdrawal**. However, **lignite mining** and, in some German states<sup>2</sup>, the **mining of other mineral resources** is still exempt from this requirement, provided that the water is not put to any further economic use<sup>3</sup> (FÖS 2018, UBA 2018). The amount of lost state revenue due to the exemption of raw material extraction from water extraction charges can be calculated on the basis of the share of water not used economically and an imputed water extraction charge. Due to a lack of data, the estimation could only be carried out for lignite. The **costs of the exemption from water withdrawal charges for lignite alone** amounted to **around 17 million euros in 2017**.<sup>4</sup> (FÖS 2018).

## 3.2 Agriculture and forestry



### Impact on biodiversity

In recent decades, agricultural land use has been characterized by increasing intensification and specialization (UBA 2016). Intensive agricultural production is one of the most important causes of biodiversity loss.

- In particular, the **nutrient surpluses and pollutant discharges** occurring in agriculture have a directly and indirectly damaging effect on biodiversity. Excess nutrients are released into the air (especially ammonia and nitrous oxide) and into water (especially nitrate). This leads to acidification and eutrophication of terrestrial, aquatic and coastal ecosystems, and subsequently to impairment of biodiversity. In particular, the excessive use of nitrogenous fertilizers contributes to this.
- Disruption of the food web: **Broad-spectrum herbicides and insecticides** destroy not only the "weeds" and insect pests, but also other arable weeds and insects. This deprives a large number of the animal species found in the agricultural landscape of food and thus also of their livelihoods, with the result that local and supra-regional populations decline or disappear, as is also demonstrated by the dramatic population trends of many typical field bird species.
- In addition to material pollution, intensive agriculture leads to **soil destruction or degradation**, especially through the use of heavy machinery in arable farming and crop rotation that is not adapted to the site.
- In addition, agriculture causes 7.4% of **greenhouse gas (GHG)** emissions in Germany (UBA 2020a)

<sup>1</sup> Assumptions for estimation cf. chapter 4.1

<sup>2</sup> e.g., Rhineland-Palatinate, Saxony-Anhalt, Schleswig-Holstein, Lower Saxony. Bavaria, Hesse and Thuringia do not levy any water withdrawal charges at all.

<sup>3</sup> The exception here is the state of North Rhine-Westphalia, where since mid-2011 a water withdrawal fee must also be paid for water that is not used economically. Non-revenue water is water that is pumped out

exclusively for the purpose of draining coal seams and is fed back into the water cycle without being used elsewhere.

<sup>4</sup> based on the following assumptions (cf. FÖS 2018): 392 million m<sup>3</sup> are assumed for the volume of pumped water that was not put to any further economic use. The calculatory price of the water withdrawal fee is set at 4.2 Ct/m<sup>3</sup>.

and thus damages biodiversity in-directly via climate change.

## Important environmentally harmful subsidies

### EU subsidies: Common Agricultural Policy and Fisheries Subsidies

The European Union's **Common Agricultural Policy (CAP)** largely determines the economic policy framework for German agriculture. In the last funding period from 2014 to 2020, CAP funds of around 6.2 billion euros per year were available in Germany.

The CAP funds consist of two pillars. The **first pillar** concerns the **direct payments** of the EU to farmers, which are granted **per hectare of agricultural land**. Since 2015, the first pillar has been supplemented by so-called "greening measures", which require certain environmental services for 30% of the direct payments. Originally, direct payments were intended to compensate farmers for the higher standards that apply in Europe so that they would not suffer a price disadvantage on the global market. In Germany, direct payments amount to around **4.85 billion euros per year** and account for around 40% of farm income (BMEL 2019).

The **second pillar**, on the other hand, includes targeted support programs for sustainable and environmentally friendly management (which is positive from a biodiversity perspective) and rural development. In the years 2014 to 2020, **1.3 billion euros per year** in EU funds were available in Germany for the second pillar. These were co-financed by further funds from the federal, state and local governments, as well as by funds from the **joint task "Improvement of agricultural structure and coastal protection" (GAK)**, in which the federal government participated with an average of **600 million euros** in the period 2014 to 2020. In the **2020 federal budget**, as much as **1.13 billion euros** have been earmarked (Bundesregierung (no year)).

However, at least 30 % of the EU funds from the second pillar must be used for extensification measures, organic farming or the promotion of naturally disadvantaged areas. Other areas such as investments in tourism, commercial settlements or village development projects are also eligible for funding (BMEL 2019), without contributing to climate and environment.

At present, the EU (in a trilogue consisting of the Commission, the EU Council of Ministers and the European Parliament) is negotiating the structure of the funding period after the current transitional phase from 2023. It is already clear that 20 to 30 % of the direct payments from the first pillar will be reserved for so-called eco-

schemes, which will only be paid out if additional services are provided for environmental and climate protection (Handelsblatt 2021)

**Fisheries** in Germany are also supported by EU subsidies and supplemented by national programs:

- On the occasion of the reform of the Common Fisheries Policy of the European Union (CFP) implemented in 2014, the **European Maritime and Fisheries Fund** was established. Until 2020, EU funding of around **30 million euros per year** is earmarked for the German fisheries sector. Since 2014, however, payments have been linked to requirements for sustainable and environmentally sound management of commercially exploited fish stocks, meaning that large fishing vessels that contribute to the overexploitation of fish stocks are no longer supported by EU subsidies (UBA 2016).
- At the national level, there are other direct and indirect subsidies or tax benefits for fishing. Direct subsidies at the national level exist through **measures for the adaptation and development of the fishing fleet (1.7 million euros in 2018)** and subsidies to improve competitiveness (**structural measures for the sea fishing industry, 38,000 euros** in 2018) (BMF 2019).

### Animal husbandry: VAT reduction for animal products

With a few exceptions, **food of animal origin** is not subject to the regular VAT rate of 19%, but to the **reduced rate of 7%** (temporarily 5% in 2020). The socio-political justification for this was to give everyone equal access to all basic foodstuffs. In the meantime, however, Germans consume two to four times as much meat as recommended by health organizations, which is associated with negative health, environmental and climate effects. For this reason, incentives should be provided for a more plant-based diet (FÖS 2020b). This is because the production of certain amounts of calories and protein in animal products requires significantly more water, fertilizer, pesticides and land than if these were provided directly by plant-based products (BfN 2019). Based on Section 12 (2) No.1 UstG, the federal government lost an estimated **5.2 billion euros** in 2012 (UBA 2016).

### Use of tractors: vehicle tax exemption and agricultural diesel fuel

**Tractors and special vehicles** subject to registration, such as tractors or combine harvesters, as well as trailers, are fully exempt from **motor vehicle tax** under Section 3 No. 7 KraftStG. The tax exemption does not contribute to the implementation of the German Sustainability Strategy, which stipulates, that renewable natural resources and soils are only to be used within the scope of their regenerative capacity and that the release of

substances is only to be caused in compliance with the precautionary principle within the ecological limits of the carrying capacity of natural systems. Thus, there are no incentives to opt for the smallest, most efficient tractors and trailers possible, which have lower fuel consumption and less impact on the soils that are important for biodiversity (see chapter 1). In 2018, the subsidy volume amounted to **470 million euros** (BMF 2019).

Agricultural and forestry businesses also pay a **reduced tax rate** on diesel (agricultural diesel). This amounts to **25.56 ct/l**, compared to the regular tax rate of 47.04 ct/l. Under Section 57 of the EnergieStG, the tax exemption applies to the use of agricultural diesel in farm tractors, stationary or mobile machinery and engines, and special vehicles. The **reduced tax revenue** amounted to **467 million euros in 2018** (BMF 2019). The reduced tax burden reduces incentives for the smallest, lightest, most energy-efficient agricultural machinery possible. Heavy agricultural machinery leads to soil compaction and higher CO<sub>2</sub> emissions due to higher fuel consumption (FÖS 2020b).

### Energy crop cultivation

Energy crops are grown on more than 2.3 million hectares in Germany (FNR 2021). The cultivation of energy crops in Germany is indirectly subsidized by the feed-in tariffs in the Renewable Energy Sources Act (EEG) for biogas plants and by the greenhouse gas quota for fuels. The production of electricity and fuel from renewable energy sources is an important contribution to reducing CO<sub>2</sub> emissions, provided that the intensity of cultivation of agricultural land does not exert additional pressure on the environment and biodiversity. However, the two regulations increase the demand for agricultural land or the intensity of cultivation (concentration on a few crops, thereby narrowing crop rotation) and thus tend to have a negative impact on biodiversity (BfN 2019). With the introduction of the Renewable Energy Sources Act (EEG) in 2000, the number of biogas plants in Germany initially increased sharply. Since 2012, however, there have been several changes to the legal framework (EEG 2012, 2014 and 2017), which reduced the increase in capacity in the biogas sector. Since 2012, this has been predominantly determined by plant expansions, conversions to flexible plant operation, and small additions in the area of liquid manure plants and plants in the waste sector, while new plants based solely on cultivated biomass have become largely uneconomical (FÖS 2013). Nevertheless, the cultivation of energy corn for biogas currently still covers around 1 million hectares in Germany (FNR 2019).

### Excursus: Bioeconomy

In addition to the use of biomass for energy, the material use of renewable raw materials has also gained in importance in recent years. The most important biomass-based industrial products are specialty chemicals, biobased plastics ("bioplastics") and composites, surfactants, coatings and paints, lubricants, as well as paper and pulp, textiles, building materials, furniture and pharmaceuticals. For these, too, intensive management of agricultural land and forests threatens biodiversity. In addition, there are concerns about genetic engineering processes (FUE 2019). Government funding for bioeconomy projects currently still focuses primarily on research and development and knowledge transfer. As the availability of sustainably producible biomass in Germany is limited, careful attention should be paid to the expansion of the bioeconomy in order to avoid the renewal of misaligned incentives in the cultivation of energy crops.

### 3.3 Traffic

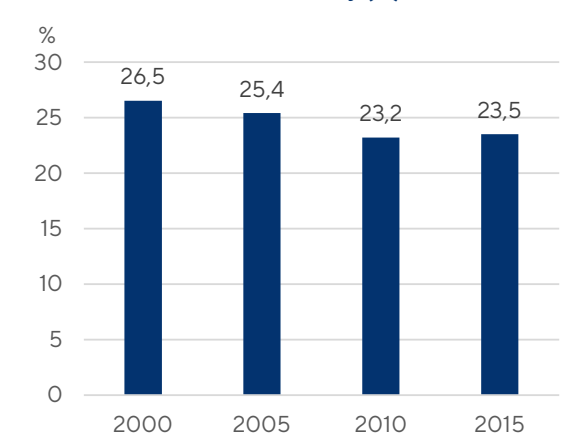


#### Impact on biodiversity

For many animal and plant species, roads represent barriers that they find difficult or impossible to overcome. They cut up habitats and fragment them into ever smaller areas. The species living there become isolated. This increases their risk of extinction (Gubler et al. 2020). The share of undissected low-traffic areas in the total area of Germany declined in the period 2000 to 2015 (Figure 2).

The transport network in Germany is one of the densest in Europe. The total length of all highways in Germany has grown by almost 25% since reunification (BMVI 2021). Numerous roads have been widened due to increasing traffic densities. This also increases the barrier and isolation effects for species and habitats (BfN 2017). Around 5% of Germany's total area is sealed by traffic (UBA 2020b).

**Figure 2: Share of unfragmented areas in the land area of Germany (%)**



Source: (UBA 2019b). Proportion of undissected low-traffic areas (UZVR) with 100 km<sup>2</sup> or more.

Roads also change the microclimate in their immediate surroundings; temperature and light conditions

change. Among other things, this promotes the spread of alien species and thus the displacement of native species, which leads to a destabilization of ecosystems. Motorized traffic pollutes the adjacent ecosystems with pollutants, light and noise.

- In addition to **CO<sub>2</sub> emissions, nitrogen oxide emissions** are also problematic, contributing to large-scale eutrophication of habitats. Road drainage pollutes soils and water bodies in the vicinity of roads with heavy metals and microplastics from tire abrasion (Gubler et al. 2020).
- **Light and noise emissions** have a negative impact on populations in adjacent ecosystems: noise disrupts communication within species and causes stress reactions. This limits reproductive success, which can weaken entire populations (Gubler and others 2020). Light emissions further increase the separating effect of adjacent habitats due to the avoidance behavior of many species.
- Another negative consequence of traffic is mortality, a serious threat especially for rare species with small populations. The most endangered species are amphibians that migrate seasonally (Gubler et al. 2020).

But **air traffic** also has a negative impact on biodiversity:

- Airports contribute to **sealing** and thus habitat loss.
- Air traffic also causes **greenhouse gas emissions and pollutant emissions**, which contribute to large-scale eutrophication and acidification of habitats and to climate change.
- **Noise emissions** cause stress for many species.

**Shipping** also causes damage to biodiversity through air pollutants and indirectly through the straightening or deepening of rivers.

Compared to private motorized transport, **rail transport and local public transport** have a significantly lower negative impact on biodiversity per person-kilometer traveled. In addition, they are much more climate-friendly means of transport. Therefore, subsidies for railroads and buses are not counted as environmentally harmful subsidies and are not included in this analysis.

#### Important environmentally harmful subsidies

The transport sector is home to a particularly large number of environmentally harmful subsidies. In road transport, these include:



- **Diesel energy tax concessions (diesel privilege):** According to Section 2(2) of the EnergieStG, diesel is subject to a **lower energy tax rate** than gasoline, even though **diesel** is the more climate-damaging and energy-rich fuel (FÖS/IKEM 2016). Converted, the tax rate for diesel is 179 euros/tCO<sub>2</sub>, while that for gasoline is 288 euros/tCO<sub>2</sub>. The concession in terms of energy tax is not offset by the higher vehicle tax rate on diesel cars (FÖS 2019). This creates an incentive to purchase environmentally harmful new vehicles and to engage in environmentally harmful mobility behavior. The **tax subsidy** amounted to **8.19 billion euros in 2019** (own calculation, according to UBA (2016a) based on Destatis 2020). The subsidy volume is calculated as the difference between the tax rates on diesel and gasoline, multiplied by the sales of taxed diesel fuel.
- **Travelling allowance:** According to Section 9 of the German Income Tax Act (EstG), the **travelling allowance** favors employees by allowing them to claim their travel expenses as income-related expenses in their income tax return at a rate of **30 ct per kilometer**, regardless of the means of transport. This reduces taxable income, provided that the lump sum for income-related expenses of 1,000 euros per year is exceeded. Furthermore, the actual reduction in the tax burden depends on the level of the personal tax rate. As part of the climate protection program, the flat rate has been increased from 30 to 35 ct from the 21st distance kilometer since the beginning of 2021, and from 2024 to 2026 the amount will be increased by a further 3 ct. This is intended to cushion the costs of the CO<sub>2</sub> price introduced in 2021 for commuters with long commutes. According to various estimates, the travelling allowance cost the state between **4 and 5.6 billion euros annually** between 2012 and 2017 (IfW Kiel 2018; Jacob et al. 2016; UBA 2016). The increases envisaged in the climate protection program are expected to cost an additional 20, 169, and 212 million euros in 2021, 2022, and 2023, respectively (Bundesregierung 2019)
- **Tax advantages of company cars (company car privilege):** **Company cars** are commercially registered vehicles whose additional private use must be taxed as a non-cash benefit. However, instead of using the actual private use as the basis for taxation (logbook method), a **flat-rate tax** of 1% of the gross list price per month can also be selected. The same applies to running costs such as fuel, repairs and wear and tear. The flat-rate regulation compensates on average less than 40% of the actual benefit (Harding 2014). The regulation makes the use of company cars more favorable than privately purchased vehicles and reduces social security contri-

butions and payroll taxes. At the same time, incentives are provided for the purchase of new cars and the extended use of environmentally harmful means of transport.

The **subsidy volume** is estimated at **4.39 billion euros** (FÖS 2020b). The legal basis for this is provided by Section 6 (1) No. 4 sentences 2 and 3 and Section 8 (2) sentences 2 to 5 EstG.

Air traffic also benefits from subsidies in various areas:

- **Energy tax exemption for kerosene:** **Energy products** used in commercial **domestic air traffic** are **tax-exempt**. In addition, kerosene produced domestically and used in flights to foreign destinations is also tax-exempt under international agreements and represents a competition-distorting tax exemption not mentioned in the German government's subsidy report (UBA 2016). The legal basis for this is Section 27 (2) of the Energy Tax Act. In 2019, the **subsidy volume** amounted to **8.3 billion euros** (FÖS 2020b).
- **VAT exemption for international flights:** In contrast to domestic commercial air traffic, **cross-border air traffic** in Germany is **exempt from VAT** on the basis of international agreements. The legal basis is provided by § 8 para. 2 no. 1 UstG. The VAT exemption amounts to just under **4.2 billion euros** (2017) (FÖS 2020b).

**Subsidies for regional airports** consist of operating subsidies, loss absorption and investment grants from the public sector. Operating subsidies help to finance day-to-day operations and appear in the income statements as operating income. Six of the 14 German regional airports have loss absorption or profit transfer agreements with public or publicly owned shareholders, which compensate for possible annual losses. Investment grants are earmarked government subsidies through which major investment activities are usually recognized as special items on the liabilities side and subsequently added to equity and reversed through profit or loss via the income statement. Between 2014 and 2018, the **total of subsidies** in the form of loss transfers and operating and investment grants fluctuated between **39 and 43 million euros** (FÖS 2020c).

In the case of shipping, the following environmentally harmful subsidies are significant:

- **Energy tax exemption for inland shipping:** **Energy products** used in **inland shipping** are **tax-exempt** under sections 27(1) and 52(1) of the Energy Tax Act. The tax exemption of the diesel fuel used does not provide any incentives for the low-emission and energy-efficient use of resources. In 2018, the **tax exemption** amounted to **141 million euros**.

- Energy tax subsidy for working machines in seaports:** According to Section 3a of the Energy Tax Act, **working machines and vehicles** used exclusively for cargo handling in **seaports** are not subject to the tax rate for fuels, but to the **lower tax rate for heating fuels**. The subsidy serves the competitiveness of seaport operations, but is counterproductive in terms of environmental protection. In 2018, the federal government recorded **tax revenue losses of 25 million euros** (BMF 2019).

In addition, maritime shipping is supported by the Financial Contribution to Maritime Shipping (€47 million in 2018), from which deep-sea fishing, among others, receives funding (BMF 2019; Schmidt 2020).

### 3.4 Construction and housing

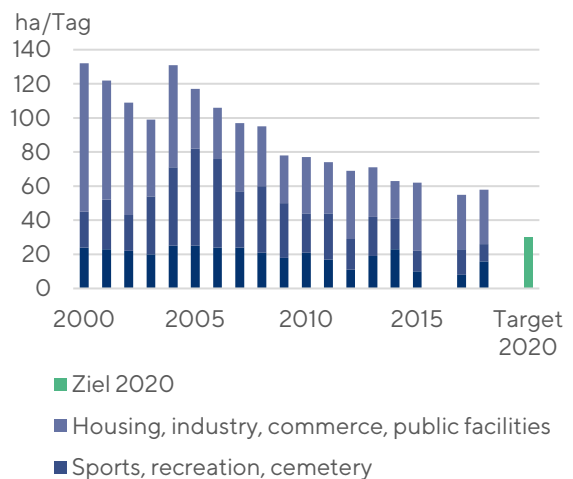


#### Impact on biodiversity

Residential construction leads to land consumption and increasing urban sprawl, which directly and indirectly has multiple negative effects on biodiversity. On the one hand, habitats for species are lost. On the other hand, urban sprawl leads to further traffic generation, landscape fragmentation and soil sealing. This in turn leads to the pollution of climate, water, soil and air, with consequences for biodiversity.

The destruction and fragmentation of habitats as a result of the expansion of settlement and traffic areas are important causes of the decline in biodiversity (cf. chapter 3.3).

**Figure 3: Land consumption in Germany (ha/day)**



Source: UBA 2020

The living space in Germany is continuously increasing. It increased by 16.3% between 2000 and 2016, while the population remained virtually unchanged and the number of households increased by only 8.3%. While the average living space was 39.5 m<sup>2</sup> in 2000, it was already 46.5 m<sup>2</sup> in 2016 (BfN 2019). Accordingly, land consumption for buildings remains high (Figure 3). At 56 ha in 2018, it is still above the target that the German government proclaimed in the German Sustainability Strategy for the year 2020 for all settlement and transport areas, namely a limit of 30 ha per day. Overall, settlement and transport areas covered just under 14% of Germany's land area in 2016 (BfN 2019).

The growth takes place at the expense of the habitats of wild species and means a loss of landscape for recreation.

The unsealed areas in the settlement area and along traffic routes are also affected, e.g. by scaring effects, noise and impairment of the landscape (BfN 2019).

#### Important environmentally harmful subsidies

##### “Baukindergeld“

The **Baukindergeld** subsidy supports **families and single parents with children** in the initial purchase of owner-occupied housing. KfW subsidizes the construction or purchase of owner-occupied housing with 12,000 euros per child up to a household income of 90,000 euros. Thus, the Baukindergeld reduces the individual financing burden, **facilitates the step into home ownership** and thus increases the demand for housing. The program started in 2018, which is why the subsidy report for this year only shows 11 million euros. In the budget for 2020, more than **€861 million** has already been earmarked for the Baukindergeld (BMF 2019).



### Housing construction subsidy (“Wohnungsbauprämie”)

The state promotes home savings through, among other things, the housing construction premium. According to the 5th Housing Construction Premium Act, home savings contracts are eligible for a premium if they are used for housing purposes. The housing construction premium amounts to 8.8% of the expenditure of a maximum of 512 euros or 1,024 euros up to an income limit of 26,600 euros or 51,200 euros (single or married). In 2018, **housing construction premiums of 162 million euros** were awarded (BMF 2019).

In addition to the housing construction premium, the employee savings allowance and the Home Ownership Pension Act are other subsidy measures that encourage people to build their own homes.

In addition to the above-mentioned subsidies, there are other subsidies in the construction sector, some of which have a negative impact on biodiversity:

- The joint expenditure **“Improvement of the economic structure”** (“Verbesserung der Wirtschaftsstruktur”) is intended to compensate for the locational disadvantages of structurally weak regions, promote general economic development and reduce regional development disparities. The federal government earmarked approximately **320 million euros** for the community expenditure in 2018 (BMF 2019). The funds for the support measures are borne equally by the federal government and the states at 50% each. Furthermore, the EU participates with funding from the EU Structural Fund for Regional Development (ERDF). In 2012, three quarters of the total 1.4 billion euros in funding (including EU funds) went to **industry** and one quarter to **infrastructure** (UBA 2016). Negative impacts on biodiversity occur when environmentally harmful infrastructure measures or commercial settlements are promoted as a result (BfN 2019).
- **Subsidies for fossil-fuelled heating systems:** the early subsidy programs for modernizing heating systems, which also supported the conversion of old oil and gas heating systems to modern heating systems of the same type, have expired. However, subsidies from the “Heating with Renewable Energies” program are still flowing into gas hybrid heating systems and gas heating systems that can basically be operated with renewable energy sources (“Renewable Ready”). The current operation can still be carried out to 75% (gas hybrid) or completely (Renewable Ready) with natural gas. In 2020, subsidies of at least **350 million euros** will have flowed into these heating variants (DUH 2021).

## 3.5 Tourism



### Impact on biodiversity

The impact of tourism on biodiversity depends on the type and design of tourism infrastructure. In general, the promotion of tourism development causes habitat loss and fragmentation as well as disturbance of flora and fauna. Besides the infrastructure of the tourist offers, the induced leisure traffic as well as the high energy and water demand are also problematic. Ski resorts (see box), biking trails, bathing facilities at water bodies, fitness and leisure parks as well as golf courses have a particularly negative impact, especially in the Alpine region and in cultural landscapes (Gubler et al. 2020). However, there are local tourism offers that contribute to the conservation or, in individual cases, the preservation and improvement of natural areas (Siegrist et al. 2015).

**Winter sports facilities** often cause animals to retreat over large areas. Snowmaking facilities and ski slopes have a variety of negative impacts:

- Reservoirs for snowmaking equipment can destroy wetlands and lead to water shortages in streams (de Jong, 2012). Artificial snow can cause water pollution and alters vegetation. Underground water pipelines also cause ground scars.
- Slope grading destroys native vegetation (de Jong, 2012). The use of snow groomers causes soil compaction, which promotes surface runoff and erosion.
- Avalanche blasting causes disturbance to wildlife and damage to vegetation.
- Summer activities such as bike trails, climbing gardens, via ferrata, summer toboggan runs, etc. can extend the pressure on biodiversity to the whole year.

Source: (Gubler u. a. 2020).

## Important environmentally harmful subsidies

### Sales tax reduction for overnight stays

According to Section 12 (2) No. 11 UstG, the **reduced tax rate of 7%** applies to **accommodation services**. In 2018, the **tax concessions** totaled **1.43 billion euros** (BMF 2019). This tax concession also stimulates tourism in regions whose environment is heavily polluted by tourism.

Further subsidies in the tourism sector:

- At the European level, funding for the tourism sector is provided in particular by **the European Regional Development Fund (ERDF)**. Other funding opportunities exist through the **European Social Fund (ESF)** and **the European Agricultural Fund (EAFRD)** (see chapter 3.2).
- The federal government supports investments in the culture and tourism sector with the joint expenditure **"Improvement of the regional economic structure"** (see chapter 3.4). In the years 2015 to 2017, the tourism sector accounted for 34% of the total funding volume. In the years 2015 to 2019, the accommodation sector received almost **250 million euros** in funding (BMWi 2021).

## 3.6 Energy



### Impact on biodiversity

Energy production impacts biodiversity to different extents depending on the energy source and technology. In addition to the extraction of raw materials for fossil fuels (see chapter 3.1), energy production also has an impact on biodiversity. The conversion of fossil fuels into energy, as well as energy consumption, produces air pollutants that acidify or eutrophicate habitats, and greenhouse gases that contribute to **global climate change** (Gubler et al. 2020). Subsidies for fossil energies as well as subsidies that favor energy consumption in individual sectors thus intensify climate change and its negative effects on biodiversity (cf. BfN 2019):

- Temperature increases and changes in rainfall patterns affect species' annual rhythms, reproduction, competitive ability, and feeding relationships.
- Climate change is causing habitats to shift. This changes the geographical distribution of species. Species that are particularly at risk are those that have a low adaptive capacity because, for example, they already occur only rarely, have a low ecological amplitude, have a low reproductive rate, are not very mobile, or occur in isolated climatic zones (e.g. in mountainous regions) (BfN 2019).
- Climate change is also increasing the threat posed by alien species (BfN 2019).

**Power generation from renewable energies**

Energy generation from renewable sources is less harmful to the environment or biodiversity than that from conventional sources (fossil fuels and nuclear energy). However, it is not without its problems. Particularly noteworthy are:

- Energy crops from intensive agriculture are used for energy production from biogas, with negative consequences for biodiversity (see chapter 3.2)
- hydropower interferes with aquatic habitats and can cause a wide range of ecological damage..
- Wind energy development particularly affects birds and bats through collision risk, avoidance behavior, and habitat loss.

However, the promotion of renewable energies, in particular the Renewable Energy Sources Act (EEG), helps to replace fossil fuels and thus curb global warming. This has an overall positive effect on biodiversity.

**Important environmentally harmful subsidies**

As with transport, there are numerous subsidies for energy production and consumption that have a negative impact on biodiversity.

**Power generation from fossil fuels**

Operators of stationary power generation plants (e.g. coal-fired power plants) can be **exempted from energy tax** under sections 37 and 53 of the EnergieStG. The prerequisite for this is a nominal electrical output of more than two megawatts. Cogeneration plants can also be exempted if their monthly and annual utilization rate is at least 70%. Section 3 of the Energy Tax Act also provides relief for energy products used to drive gas turbines and internal combustion engines in plants already eligible for tax relief (CHP, power generation, gas transmission and storage). In 2019, tax revenue reductions due to energy tax concessions amounted to **1.8 billion euros**.

This tax concession is granted to avoid double taxation of electricity generation and consumption on the basis of EU regulations. However, a deviation from the prohibition of double taxation would be explicitly possible under EU law for reasons of environmental protection (cf. FÖS 2020a)..

**Electricity consumption: exceptions for industry**

Industry receives a variety of electricity price reductions and thus pays significantly lower electricity prices than private consumers. The total subsidy volume amounts to approximately **17.8 billion euros per year** (see FÖS 2020b). The subsidies reduce efficiency incentives, which leads to higher electricity consumption and thus indirectly favors fossil fuels. Climate change in turn has a negative impact on biodiversity. Important exceptions are:

- **Special equalization scheme of the EEG (BesAR)** according to § 63ff. Renewable Energy Sources Act (EEG): Companies whose share of electricity costs in gross value added exceeds the thresholds of 14, 17, or 20 % pay a reduced EEG levy, the amount of which is graded according to electricity intensity and electricity procurement. The number of companies taking advantage of the BesAR has increased since its introduction in 2012 from 734 (BMW/BAFA 2014) to 2,156 in 2018 (BMW and BAFA 2019). The scheme benefits companies in a wide range of sectors, from agriculture and forestry to mining, including the quarrying and quarrying sector, to manufacturing, in particular the paper industry, the chemical industry, the steel and metal industry, glass and ceramics, and the production of building materials.
- **Own power privilege of the EEG** according to § 61 Erneuerbare-Energien-Gesetz (EEG) (Renewable Energy Sources Act): For plants that serve to supply own power and were commissioned before 2014, grandfathering rules still apply, which reduce the EEG levy to zero. This continues to promote the use of fossil fuels, as most existing plants use fossil fuels.
- **Peak compensation for electricity tax** in accordance with § 10 StromStG: Companies in the manufacturing sector are exempt from part of the electricity tax if the tax burden as the sum of the electricity tax in a calendar year is higher than the reduced employer's share of pension insurance contributions. Companies then receive a refund of 90% of the excess electricity tax above a defined threshold.
- **Electricity tax concessions for companies in the manufacturing sector and agriculture and forestry** under Section 9b of the Electricity Tax Act: Companies in these sectors pay only 75% of the electricity tax rate for electricity that is demonstrably consumed for business purposes from an annual electricity tax burden of 1,000 euros (basic amount).
- **Electricity tax exemption for certain processes and procedures** according to § 9a StromStG: Electricity-intensive processes and procedures such as electrolysis, chemical reduction processes, metal

production and processing, and the manufacture of glass (wares) and ceramic products are exempt from electricity tax.

Further benefits are granted in the form of concession fees, electricity grid fees, CHP levy and electricity price compensation. A detailed description can be found in (FÖS 2020a).

#### **Energy consumption: exemptions for industry**

In addition to the indirect subsidization of fossil fuels via misaligned incentives in the electricity price, the direct subsidies for the use of fossil fuels in industry are also significant. They amount to 1.14 billion euros per year (see FÖS 2020a).

- **Energy tax exemption for certain processes and procedures:** Certain energy-intensive processes and procedures are exempt from the energy tax, such as the production of glass(ware), ceramic products, cement, lime, metal production and processing, or chemical reduction processes. In addition, energy products are exempt from energy tax if they are used simultaneously for heating purposes and for purposes other than heating or fuel, or for thermal waste or exhaust air treatment.
- **Producer's privilege:** Energy sources that are used directly for the production of energy products, e.g. in refineries or coal plants, are also exempt from energy tax.
- **Peak compensation for energy tax** (for companies in the manufacturing sector): As with the electricity tax, companies are exempt from the eco-tax portion of the energy taxes if the tax burden as the sum of the energy taxes in the calendar year is higher than the reduced employer's share of the pension insurance contributions. Above a certain threshold, companies are thus refunded 90% of the excess energy tax.
- **Energy tax concessions for companies in the manufacturing sector and companies in agriculture and forestry:** As with the electricity tax, companies in these sectors only pay 75% of the tax rate for heating oil, natural gas and liquid gas if they can prove that they are used for business purposes, starting at an annual energy tax burden of 250 euros (basic amount).

## 4 Four subsidies in focus

Following the overview of environmentally harmful subsidies in chapter 3, four subsidies that have a major impact on biodiversity are presented in detail and evaluated below.

### Approach to assessing the biodiversity damaging effect

When considering the extent to which subsidies are harmful to biodiversity, it is first important whether the subsidy is classified as harmful to biodiversity in its entirety or only in part:

- **Completely damaging to biodiversity:** The subsidy as a whole has a negative impact on biodiversity and should therefore be completely dismantled. Accordingly, the entire subsidy volume is considered to be harmful to biodiversity.
- **Partially harmful to biodiversity:** Certain portions of the subsidy are harmful to biodiversity. Accordingly, these harmful portions should be eliminated or redirected. Only this portion of the subsidy volume is considered to be harmful to biodiversity. Where possible, this proportion is quantified.
- **Subsidy is harmful to biodiversity depending on implementation:** The subsidized activity can have a neutral or even positive effect on biodiversity if it is applied/implemented in a biodiversity-friendly manner. If this is not the case, the subsidy should be classified as harmful to biodiversity.

In addition to the **amount of the subsidy**, the extent of **damage to biodiversity** is also central to the question of how harmful a subsidy is. For example, a subsidy can have a comparatively small negative impact on biodiversity despite a high subsidy volume; conversely, smaller subsidy volumes can have a large impact if they favor activities that have a particularly negative impact on biodiversity. However, it is difficult to calculate the monetary damage to biodiversity caused by economic activity. One reason is that there are rarely clear cause-and-effect relationships. In addition, there are methodological pitfalls in monetization (Seidl/Gowdy 1999). Following Gubler et. al (2020), the impact on biodiversity is therefore assessed qualitatively. According to this, the extent of damage depends on the following factors:

- **Causality:** Does the subsidy have a direct or an indirect effect on biodiversity? A primary effect (direct effect) exists if biodiversity damage is a direct consequence of the subsidy, i.e. the subsidy favors activities that trigger the damage to biodiversity (cf. UBA 2016). An example is the fragmentation of ecosystems through road construction. Indirect effects (secondary effects) are biodiversity damages

that the subsidy triggers indirectly via impact chains. These are so-called second-round effects or feedback effects that transfer the primarily damaged environmental goods to other environmental goods (UBA 2016). Of particular relevance here is the climate impact of fossil energy production and agriculture.

- **Area effect:** how many and which areas are affected by the activity benefiting from the subsidy? Does the subsidy only have a local effect on individual habitats or a broad effect on a large number of habitats?
- **Impact intensity:** How severely is biodiversity damaged? For example, are rare species threatened with extinction by the activity favored by the subsidy?
- **Duration of the intervention:** Over what period of time does the biodiversity damage occur due to the activity benefiting from the subsidy? In this context, repetitions or the irreversibility of the effect (e.g. in road construction) must also be taken into account.

These factors are analyzed for the subsidies presented below. The result is a qualitative assessment of the extent of the damaging effect on biodiversity based on the categories low - medium - high.

### 4.1 Discount from the extraction levy

The **extraction fee** is levied on the extraction of **non-minable mineral resources**. According to Section 31 of the Federal Mining Act (BBergG), it amounts to **10% of the market value** and can be increased to up to 40% by the federal states, which regulate the details of collection and payment by ordinance. The extraction fee is payable to the federal state in which the mineral resource is extracted. Unlike mineral resources, **non-mined mineral resources** are initially "ownerless" and are transferred by the state to companies. These include the raw materials listed in Section 3 (3) of the BBergG, including all **fossil fuels** (coal, oil and gas) and **metallic raw materials**.

However, extraction fees are only levied in connection with mining rights granted under the scope of the BBergG, i.e. after the BBergG 1982 came into force. **Holders of so-called old rights**, i.e. mining rights granted before the current Federal Mining Act of 1982 came into force, are **exempt** from extraction fees under Section 151 (2) No. 2 BBergG. In practice, this mainly affects **lignite mining** and, until the end of mining in Germany in 2018, also **hard coal** (see GIZ 2019). **Oil and gas extraction** in Germany, on the other hand, has so far been subject to extraction levies, with levy rates exceeding the standard levy rate of 10%. However, in January 2021, the state of Lower Saxony decided to fully



repay the production levy in 2020 for the companies concerned and to levy only 5% of the market value in 2021. In subsequent years up to 2030, the extraction levy for natural gas is to be reduced from the previous regular rate of 27% on natural gas and 18% on crude oil to the standard levy rate of 10%. According to the state government's estimates, the state will thus forego revenue of 250 million euros by 2030 (Lower Saxony Ministry of Finance 2021).

**Building materials** such as sands, gravels and natural stones are natural mineral resources and therefore **not subject to tax**. Only in the new federal states, due to the Unification Treaty, are gravels, sands and natural stones classified as non-minable mineral resources until 1996. In this respect, the extraction fee can also be levied for these mineral resources, provided that the mining rights already existed at that time (FÖS 2016).

According to § 32 BBergG, the federal states can also set different amounts or exemptions for certain mineral resources or extraction sites. Possible justifications are threats to the competitive situation, disturbances of the overall economic balance and securing the supply of raw materials (FÖS 2011). The federal states have made extensive use of this, particularly with regard to the exemption for individual mineral resources (e.g. rock salts, peat) and the setting of a reduced level of extraction levy (e.g. tree minerals in the new federal states) (cf. GIZ 2019).

### Quantification of the biodiversity damaging fraction

The preferential treatment of the extraction fee is a financial incentive for the extraction of raw materials. Raw material extraction has a negative impact on biodiversity. The German Federal Nature Conservation Act (BNatSchG) stipulates that the polluter must compensate for the impact by, for example, renaturation, recultivation or near-natural design of the affected area (FÖS/FUE 2021). Valuable habitats for species (e.g., in disused quarries) are also created in some places after mining activities have ceased (LBV 2021). Nevertheless, mining is accompanied by an irreversible intervention in soils and landscapes. Moreover, areas valuable for nature conservation could have been secured for nature conservation even without mining activities. The preferential treatment in the extraction levy is thus **completely** detrimental to biodiversity.

Due to the restriction of the levy to non-mining mineral resources and the exemption of individual raw materials due to "old rights" as well as possibilities of the federal states to create exemptions and tax relief, **the revenues from the extraction levy are negligible** in most federal states (FÖS 2016). In 2018, they amounted to approximately 240 million (GIZ (ed.) 2021). The lost revenue is to be considered a **subsidy**. If revenue is taken as the market value, the subsidy volume in 2019

was up to **629 million euros**, of which approx. **180 million euros** were for **lignite** alone.

**Table 3: Subsidy volume in the subsidy levy (million euros, 2019)**

Industry branch	Revenue (Mio. Euro)
Extraction of natural stone, limestone, gypsum, chalk, etc.	1.902,9
Extraction of gravel, sand, clay and kaolin	2.488,7
Other quarrying	101,2
Coal mining	1.800,3
Total	6.293,1
<b>Promotion levy (standard rate)</b>	<b>10 %</b>
<b>Subsidy (Mio. Euro)</b>	<b>629,3</b>

Source: (BBS 2020) (Federal Statistical Office 2020), own calculations. Sales of coal mining and the extraction of natural stone, limestone, gypsum, chalk, gravel, sand, clay and other minerals. Excluding services in the sectors concerned. Including foreign sales and sales by companies in the new federal states which may pay extraction taxes. The total is thus somewhat overestimated.

### Extent of biodiversity degradation

The extraction tax has a **medium level** of harmful effect:

- The subsidy has a **direct impact** on biodiversity, as the extraction of raw materials at the location of the subsidy leads to impairments such as landscape destruction and damage to animal and plant species (see chapter 3.1). Indirect effects on biodiversity arise from climate change. In the case of the extraction levy, this relates in particular to lignite, which is fully exempt from the extraction levy (UBA 2016).
- **Medium area impact:** even though the interventions at the respective site are often serious, the total area affected by raw material extraction in Germany is limited. In 2017, about 1,527.75 km<sup>2</sup> of the area in Germany was occupied by raw material extraction. This corresponds to about 0.4% of the total area of Germany (UBA 2019a).
- **Impact intensity and duration:** However, the impact intensity of raw material extraction is often very high. For example, lignite mining in North Rhine-Westphalia will destroy the Hambach Forest,



one of the last undestroyed natural areas in the Lower Rhine Bay (BUND 2021). Raw material mining often reshapes landscapes for decades. Mining damage, such as landslides, occurs particularly in opencast lignite mining and in some cases leads to significantly restricted subsequent use (FÖS 2015).

## 4.2 Reduced VAT on animal products

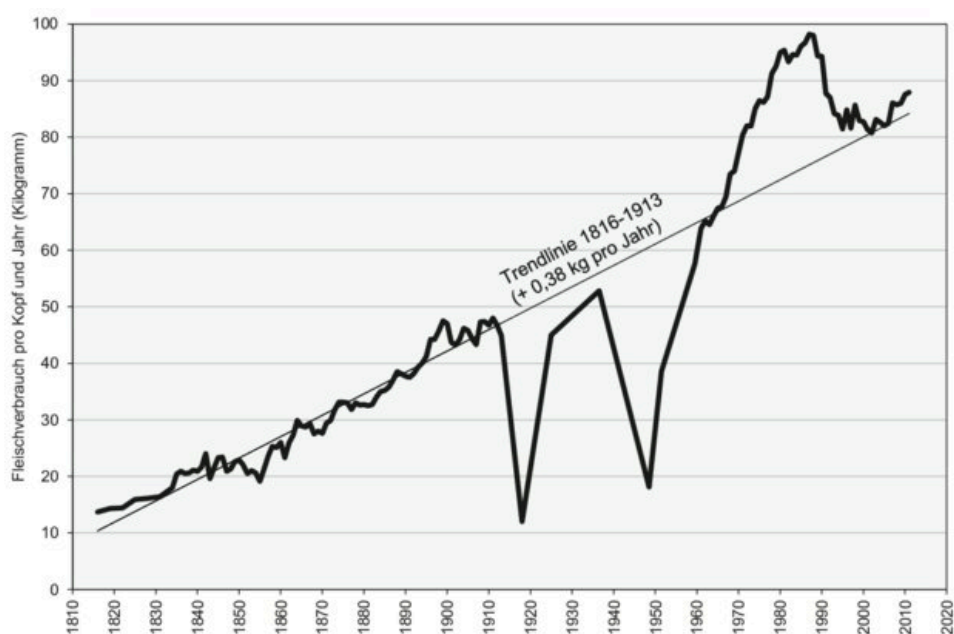
Value added tax was introduced in Germany in its current form in 1968. It is a form of sales tax that is levied on sales to end customers. The standard VAT rate has been 19% since 2007 (with the exception of a temporary reduction in 2020 to ease the burden on consumers during the Corona pandemic), and Germany also has a reduced VAT rate of 7% which is levied on some

everyday goods (a list of products can be found in Annex 2 of the Value Added Tax Act (UStG)). The reduced tax burden is intended to guarantee that all citizens can afford these products, which include most foodstuffs, but also books, firewood or, more recently, period products.

With a few exceptions, most animal foods such as meat, fish, milk (products) and eggs are also subject to the reduced value-added tax rate. The total volume of subsidies amounts to approximately **5.2 billion euros** in 2012 (UBA 2016).

At the time of the introduction of the sales tax, a reduction for animal products was still justifiable, since for parts of the population animal products were a rarely affordable commodity and thus nutrients such as proteins, iron or calcium were not always covered.

**Figure 4: Meat consumption per capita (in kg) in Germany 1816–2011 (excluding fishery products)**



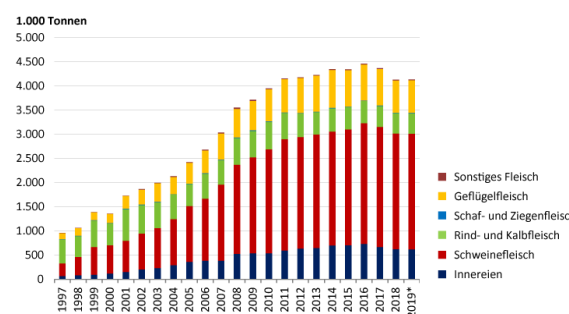
Source: (Langthaler 2016)

As Figure 4 shows, however, meat consumption in Germany has risen sharply since then and, at an average of 60 kg of meat(goods) per capita and year, is now about two to four times higher than the amount recommended by the German Nutrition Society (FÖS 2020d). In addition, the year-round variety of food available today makes it much easier to substitute animal proteins with plant proteins, for example. For this reason, subsidizing animal foods is no longer necessary today. Milk substitutes such as oat milk, on the other hand, are subject to the standard tax rate. This increases the incentive to choose an animal product instead of a plant-based alternative.

The production of animal foods in Germany has also increased significantly in recent years. For example, meat

production has increased in the past and milk production also rose by almost 40% between 1990 (23.7 million tons) and 2019 (33.1 million tons) (Statista 2020).

**Figure 5: Meat production in Germany**



Source: (Thünen-Institut 2020)

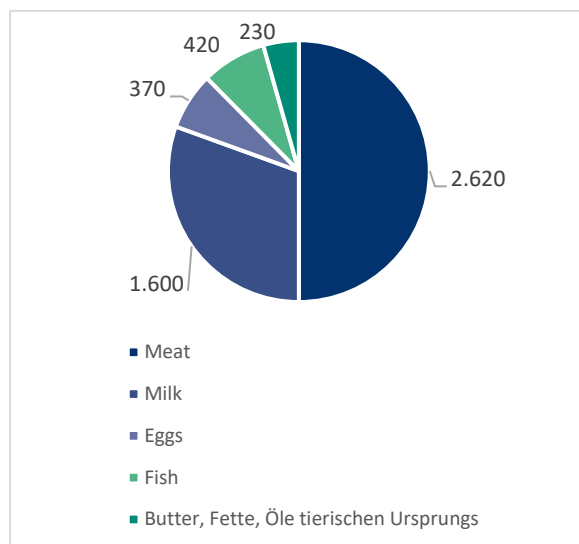
The negative environmental and climate impacts of this mass production of animal-based foods are grave. A large proportion of greenhouse gas emissions from agriculture are attributable to livestock farming. The cultivation of animal feed takes up about 60 % of the agriculturally used area. In regions with intensive livestock farming, the application of farm manure leads to high nitrate surpluses, which pollute soils and waters. Air pollutants such as ammonia endanger humans and the environment, and pollutants such as pesticides and pharmaceuticals used in livestock farming end up in soils and waters. The use of pesticides endangers insects and other animals, and the use of large agricultural machinery leads to soil compaction (for a detailed description, see (FÖS 2020d).

Thus, animal food production is an important driver of biodiversity loss in Germany.

#### Quantification of the biodiversity-damaging share

Since the reduction of VAT on animal-based foods encourages overconsumption of meat, fish, milk and eggs and gives them a tax advantage over plant-based alternatives, this subsidy must be seen as **completely damaging to biodiversity**. A complete abolition of this tax privilege would therefore be desirable.

**Figure 6: Subsidy volume by product group (Mio. Euro)**



Source: (BMEL 2016); own calculation

As shown in Figure 6, a large part of the subsidy volume concerns meat and dairy. These are a key driver of biodiversity loss due to the large amount of land used for feed production and the associated greenhouse gas emissions.

#### Extent of biodiversity degradation

The biodiversity-damaging components of the VAT reduction on animal foodstuffs can be assumed to have a **high degree of damaging effects**.

- The subsidy has a **direct impact** on biodiversity by reducing the purchase price of animal foods, thus incentivizing the mass production of animal foods while making some plant-based alternatives less fiscally viable. In addition, the reduction in VAT has an indirect impact on biodiversity through the **high greenhouse gas emissions** of animal agriculture.
- The subsidy has a **strong area effect**, as more than half of the agricultural land used for animal food production must be used to grow feed. This includes greenhouse gas-intensive land such as drained peatlands.
- The subsidy contributes to a **permanent overloading of soils and waters** with nitrates and trace substances, especially in regions with high livestock density.

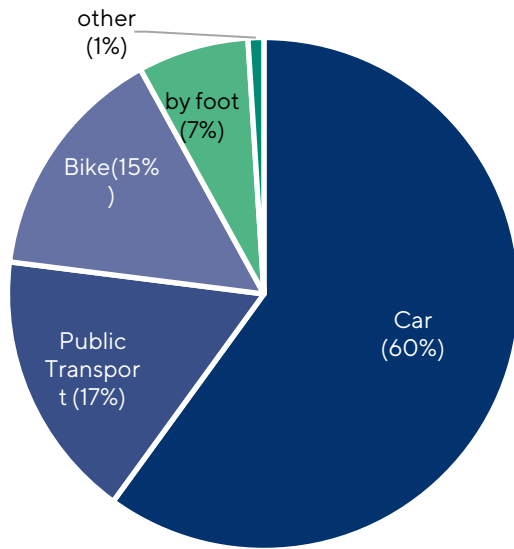
In addition, it must be mentioned that the abolition of the VAT reduction on animal foodstuffs can only be one aspect of reducing the threat to biodiversity posed by livestock farming in Germany, since the export volume of animal products has increased significantly in recent years, and incentives for biodiversity-damaging production methods must be reduced not only on the consumption side, but also on the production side.

### 4.3 Travelling allowance

According to various estimates, the **travelling allowance** costs the state **4 to 5.6 billion euros annually** (IfW Kiel 2018; Jacob et al. 2016; UBA 2016). The travelling allowance subsidizes commuting and thus promotes the trend toward longer commutes and urban sprawl. This is accompanied by higher traffic volumes, road construction and land consumption, which contribute to the fragmentation of habitats (landscape fragmentation) and direct and indirect damage to ecosystems.

With the commuting allowance, employees can deduct their **travel expenses** from their taxable income (Section 9 EstG). To this end, **30 ct per kilometer** of the single distance between the place of residence and the place of work are claimed as income-related expenses in the income tax return. Although the travelling allowance is independent of the mode of transport, 60% of all journeys to work were made by car in the period 2010-2019 (see Figure 7; Karlsruhe Institute of Technology 2020). According to the German Federal Statistical Office (Destatis o. J.), in 2016 as many as 68% of commuters used cars and 14% public transport.

**Figure 7: Share of transport modes in the traffic volume of direct commutes to work (2010-2019)**



Source: own representation based on the German Mobility Panel (Karlsruhe Institute of Technology 2020).

**Income-related expenses** (which, in addition to travel expenses, include e.g. costs for work equipment, entertainment expenses, business trips, training costs) can be claimed as a lump sum up to 1,000 euros per year. The commuting allowance therefore only has an effect if the lump sum is exceeded/exhausted. The tax relief effect of the travelling allowance also depends on the level of the personal marginal tax rate. The higher the tax rate, the greater the absolute reduction in income tax payable. According to calculations by the IMK (2019), the relief for a married couple with a gross income of 25,000 euros amounts to 246 euros per year (a commute of 25 km on 220 working days per year was assumed). With a gross income of 80,000 euros, the relief amounts to 565 euros, more than twice as much (assuming otherwise the same parameters). **The relief effect therefore increases with income**, although the actual/absolute costs of a rail ticket or fuel are the same for everyone.

**High-income households** tend to have higher income-related expenses, longer commutes and a higher tax rate, which is why they benefit more strongly and disproportionately from deductibility in absolute terms (Jacob et al. 2016). Almost 40% of the subsidy volume benefits the highest-income 20% of the population; the poorest 20% receive far less than 10% (FÖS 2021).

As part of the **2030 climate protection program**, the flat rate has been increased from **30 to 35 ct** from the 21st distance kilometer since the beginning of 2021. From 2024 to 2026, the amount will be increased by a further 3 ct. This is intended to cushion costs arising from the CO<sub>2</sub> price introduced in 2021 for commuters

with long commutes. The proposed increase will cost an additional 20 million, 169 million and 212 million euros in 2021, 2022 and 2023, respectively, according to the federal government (2019). According to the government's plans, low-income earners who do not pay income tax and therefore cannot claim any commuting expenses will receive a "mobility bonus" amounting to 14% of the commuting allowance.

In an **international comparison**, Germany is one of the few countries in which travel costs by car can be claimed unconditionally. In many other countries, travel expenses are generally not tax-deductible (FÖS/GWS n.a.).

#### Quantification of the biodiversity-damaging share

The distance subsidy is partially harmful to biodiversity. A large part of the subsidy benefits car traffic, which is used by the vast majority of commuters. Significantly smaller proportions use public transport or the bicycle (see Figure 7). While public transportation is significantly less polluting, it also contributes to landscape fragmentation and land consumption, as well as other environmental damage. Even commuting by bicycle or on foot requires appropriate infrastructure. Compared to the status quo, however, a modal shift away from cars would have a positive effect on biodiversity and the environment in general. The biodiversity-damaging share of the subsidy is therefore estimated to be at least 60% (cf. Figure 7), i.e. around 2.4 to 3.36 billion euros per year.

Commuting by car accounts for an estimated 14% of total car road traffic (FÖS 2020b): The 18.4 million employed persons in Germany have an average commuting distance of 36.2 km (outward and return journey) (Karlsruhe Institute of Technology 2020) on an assumed 225 working days per year. The total transport effort thus amounts to 149.9 billion person-kilometers. With a share of 60%, the distance traveled by car amounts to 89.9 billion passenger kilometers, or around 14% of the 642 billion kilometers of total mileage (UBA 2020c).

#### Extent of biodiversity degradation

In the case of the biodiversity-damaging components of the travelling allowance, a high degree of direct and indirect damaging effect is to be assumed:

- **Causality:** Due to the induced additional traffic, the subsidy has a direct impact on biodiversity through noise and light emissions, pollutant inputs (fossil fuel combustion, brake and tire abrasion) as well as direct killing of animals. Car traffic contributes directly to insect mortality (and thus indirectly to further species extinction). According to our own estimates (see above), car commuting accounts for

around 95 billion person-kilometers per year. A further **direct effect** of the travelling allowance results from the fragmentation and destruction of ecosystems through landscape fragmentation and the sealing off of habitats in connection with urban sprawl and road construction. **Secondary effects** result from the climate-damaging impact of traffic. Road transport (passenger cars only) emitted nearly 100 million tCO<sub>2</sub> in 2018 (BMU 2018), of which an estimated 15 million tCO<sub>2</sub> are attributable to commuting (assuming a 14% share of commuting, see above). At a cost rate of 195 euros/t CO<sub>2</sub>e (UBA 2020d), the climate damage caused by this amounts to around 2.9 billion euros.

- The travelling allowance has a **strong area effect** because it encourages the trend toward urban sprawl and thus affects a wide range of living spaces across the board. In turn, new construction outside of cities encourages additional road construction due to, among other things, additional trips to work, shopping, and recreational activities. Land consumption for transport purposes has been increasing in Germany for many years and, at over 18,000 square kilometers (UBA 2020b), accounts for around 5% of Germany's total land area.
- **Impact intensity and duration:** Habitats for species are permanently and irreversibly lost due to sealing of surfaces and fragmentation of landscapes as a result of urban sprawl.

#### 4.4 "Baukindergeld"

The Baukindergeld program provides subsidies for the purchase of owner-occupied residential property for families with children. The program has been running since September 2018 and provides for a total **funding volume** of almost **10 billion euros** (BMI 2019). The federal subsidy will be selectively increased by individual states (e.g., Bavaria) and municipalities (BMI 2021). By the end of December 2020, just under 310,000 families had applied for the Baukindergeld, which has already committed funds amounting to **6.15 billion euros**, i.e., more than half of the available funding volume (KfW (2018), KfW (2019), KfW (2020)). According to the current status, only properties with a purchase contract or building permit will be subsidized until March 31, 2021 (BMI 2021). The application for Baukindergeld can still be submitted until 31.12.2023.

Owners of owner-occupied housing who are themselves entitled to child benefits or live in a household

with a person entitled to child benefits and whose annual taxable household income does not exceed 90,000 euros are eligible to apply. For each additional child, the household income limit may be increased by 15,000 euros. Children must not have reached the age of 18 at the time of application. The subsidy amount is then 12,000 euros per child over a subsidy period of 10 years (1,200 euros per year).

62% of all applications for Baukindergeld that received a positive decision between the start of the program in September 2018 and March 2020 were submitted by families with an annual taxable income of less than 40,000 euros (Federal Government 2020).

The Baukindergeld is intended to increase the home ownership rate of families in Germany, which is low in comparison with the rest of the EU. The German government plans to evaluate the effects of the Baukindergeld on the development of the home ownership rate, which was 46.5% in 2018, in the summer of 2021.

#### Quantification of the biodiversity damaging fraction

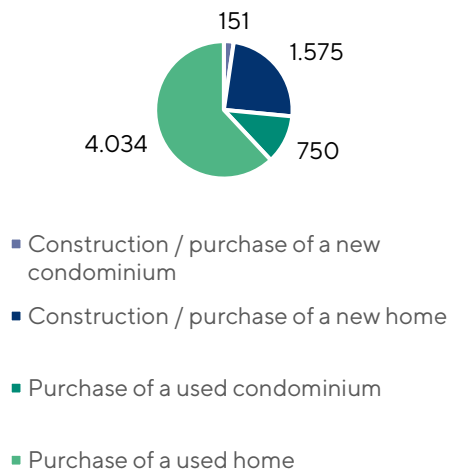
The Baukindergeld can be claimed for existing properties as well as for new buildings. Existing properties have no additional negative impact on biodiversity, whereas this is the case for new buildings - especially "on greenfield sites". The subsidy is therefore **partially harmful to biodiversity**.

Slightly more than a quarter of the funding volume of EUR 6.51 billion committed to date (as of December 31, 2020) will be granted as a subsidy for the purchase or construction of new owner-occupied apartments or homes<sup>5</sup>.

<sup>5</sup> The data do not contain a further breakdown by location ("greenfield" or inner-city as redensification). However, new owner-occupied homes are promoted more than new owner-occupied apartments. Owner-

occupied homes tend to be built more frequently in new housing developments on the urban fringes or in rural areas.

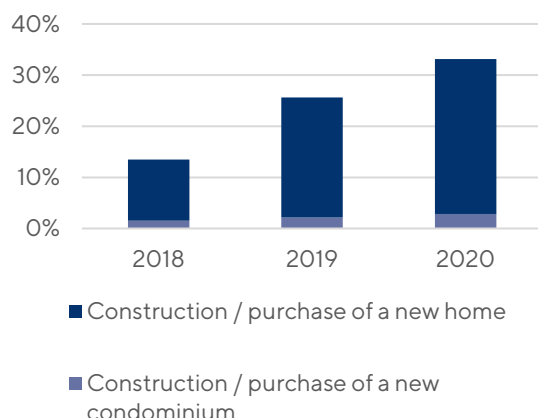
**Figure 8: Funding commitments for new and existing properties 2018-2020 (million euros)**



Source: KfW (2018), KfW (2019), KfW (2020)

The share of commitments for new buildings has increased from year to year. In 2020, every third funding commitment was made for a new building (Figure 9). This is due to the fact that only new buildings with a building permit after January 1, 2018 were eligible for subsidies and, at the same time, the application can only be submitted after moving in. Due to the time lag between the building permit and moving in, there were initially comparatively few applications for the Baukindergeld for new construction.

**Figure 9: Share of new buildings in funding commitments 2018-2020 (in %)**



Source: KfW (2018), KfW (2019), KfW (2020)

It can be assumed that the share of new construction in the funding commitments will continue to increase until the total planned funding volume of 10 billion euros is reached. Conservatively, the current share of the total volume is assumed here. The biodiversity-damaging share of the funding volume thus amounts to at least **2.65 billion euros** over the entire term of the disbursements.

In this context, however, it should be noted that **high deadweight losses** can be assumed for the building subsidy, i.e. the subsidies are claimed by families who want to build or buy anyway (IW Köln 2018). This particularly affects households with higher incomes (DIW 2018). If the subsidized activity would have taken place even without a subsidy, the subsidy itself has no additional negative effect on biodiversity (Gubler et al. 2020).

### Extent of biodiversity degradation

The biodiversity-damaging components of the Baukindergeld can be assumed to have a **high degree** of damaging effects:

- The subsidy has a **direct impact** on biodiversity by favoring new construction and thus land sealing. This was already a source of criticism from numerous stakeholders before the introduction of the Baukindergeld in 2018 (see e.g. DIW 2018).
- The building subsidy has a **strong area effect**, since new construction leads to urban sprawl and thus has a broad impact on a variety of habitats. Agricultural land is often converted into residential land. It can be assumed that a large part of the new construction induced by the Baukindergeld takes place on the outskirts of cities and in rural areas. Most of these are single-family homes, which are particularly land- and resource-intensive. An indication of this is the distribution of applications across urban and community types. It shows that a disproportionately large number of applications are submitted in rural communities and small towns (up to 20,000 inhabitants). More than half of the applications come from these categories, even though they account for only about 25% of the total population. Particularly few applications are submitted in large cities (Federal Government 2020). This is due to the fact that more vacant building sites are available in rural areas and prices are moderate. The building allowance thus noticeably lowers the cost of buying property in rural areas, whereas in cities it is of little consequence in view of the high property prices. As a result, the Baukindergeld becomes a "lead premium for rural areas" (DIW 2018). This is also problematic insofar as newly built single-family home areas in areas with a high age structure could then stand empty again in two to three decades (IW Köln 2018). New construction outside of cities, in turn, promotes additional road construction and motorized individual traffic, among other things, due to further routes to work, shopping, and leisure activities. This in turn has far-reaching negative impacts on biodiversity through land fragmentation, pollutant and CO<sub>2</sub> emissions (see chapter 3.4).
- **Impact intensity and duration:** Habitats for species are permanently and irreversibly lost due to

land sealing and the fragmentation of landscapes  
as a result of urban sprawl.



## 5 Conclusion and findings

In Germany, biodiversity is declining at an ever-increasing rate. Climate change, intensive agriculture, habitat destruction and fragmentation, and increasing soil sealing are key drivers of biodiversity loss.

Environmentally harmful subsidies contribute to the loss of biodiversity by creating economic incentives to reward behavior that is harmful to nature. Such subsidies can be found in all sectors. In this analysis, **a total of 29 subsidies** were identified, with a total annual volume of more than **67 billion euros**. However, not all subsidies have a biodiversity-damaging effect as a whole, so that the total volume cannot be equated with the biodiversity-damaging volume. The total amount of the biodiversity-damaging share could not be quantified within the scope of this study. Important examples of subsidies are:

- In the mining of **raw materials**, many mineral resources are exempt from extraction fees and water extraction charges. This does not provide any incentives for resource conservation.
- In **agriculture**, the first pillar of the EU's agricultural policy still consists mainly of area-based direct payments, from which intensive farming in particular benefits. The reduced VAT rate on animal foodstuffs promotes the consumption of meat, fish, milk and eggs. Livestock farming is particularly responsible for the loss of biodiversity.
- **Traffic**, especially road transport, contributes significantly to the loss of biodiversity through fragmentation of ecosystems, air pollutants and GHG emissions. The traveling allowance creates incentives for long commuting distances, company car and diesel privileges promote motorized individual transport.

- The "Eigenheimzulage", which was actually abolished, was reintroduced with the "**Baukindergeld**", which has been in effect since 2018. Against the backdrop of land and resource intensity, the construction of new single-family homes in particular must be viewed critically. Indirectly, the "Baukindergeld" also provides incentives for new construction on greenfield sites.
- In the **energy sector**, there are numerous exemptions for industry that directly favor the consumption of fossil fuels or reduce efficiency in electricity consumption.

Some subsidies could be redesigned to minimize the negative impact on biodiversity, such as agricultural subsidies, electricity price exemptions, or the traveling allowance.

Other subsidies are completely detrimental to biodiversity, such as the preferential taxation of subsidies and the reduction in VAT for animal-based foodstuffs. They should be abolished altogether. In the case of the extraction levy, this would require amendments to the Federal Mining Act and the adaptation of the state ordinances (FÖS 2016). The increase in VAT on animal foodstuffs would be in line with the EU-VAT directives and could therefore be implemented quickly and easily. For reasons of acceptance and to avoid hardship cases, however, the basic social security benefits should be raised at the same time and time should be allowed for informing citizens (FÖS 2021).

For selected subsidies, the study quantified the biodiversity-damaging share and assessed the extent of the damaging effect according to the categories low, medium and high (Table 4) Criteria for this were the causality between subsidy and biodiversity loss, the area effect, the effect intensity and the duration of the intervention.

**Table 4: Assessment of the biodiversity-damaging effect of selected subsidies**

Subsidy	Subsidy volume	Biodiversity damaging share		Extent of the damaging effect
	Billion euros p.a.		Billion euros p.a.	
Discounts from the extraction levy	0.63	completely	0.63	medium
Common Agricultural Policy (CAP), first pillar*	4.85	predominantly	3.39 – 4.85*	high
Reduced VAT rate on animal-based products	5.2	completely	5.20	high
Travelling allowance	4.8	partially	2.40 – 3.36	high
"Baukindergeld"	1.0	partially	0.265**	high

Source: own illustration \*The environmental and nature-damaging effects of CAP subsidies, especially of the first pillar, have repeatedly been the subject of numerous studies and are therefore not considered in detail here. The biodiversity-damaging share is given as a range without and with greening measures (no own quantification) \*\*Proportionate subsidy volume divided by duration (10 years).

It can be seen that the **VAT reduction on animal-based foods** scores poorly in all categories: it has a high

annual subsidy volume and a high degree of damaging effect on biodiversity. The subsidy volume could in-

stead be used to promote healthy and sustainable nutrition, especially for low-income households, or complementary measures such as school and club sports (FÖS 2021).

Changes to the travelling allowance are also urgently needed from the perspective of biodiversity protection. In the past, several reforms have shown that they can be justified in terms of environmental policy and constitutional law, e.g. if they are justified in terms of traffic, settlement and environmental policy<sup>6</sup>. With a reform, e.g. in the form of a conversion into an "income-independent mobility fee" for public transport, both social hardships could be cushioned and the biodiversity-damaging effect greatly reduced (FÖS 2021).

Alternative instruments should also be considered for the **Baukindergeld**, which increases the demand for housing, in order to achieve the goal pursued with the Baukindergeld of promoting low-income families while minimizing the negative effects on nature. It is conceivable, for example, to grant the subsidy only for the purchase of existing properties (IW Köln 2018) or to increase housing or child benefits, especially for low-income families, and to provide additional support for social housing (BfN 2019). This could also be focused on the use of existing buildings.

Last but not least, the **preferential treatment of the extraction levy for mineral resources** should be abolished, even if the subsidy is not quantitatively as significant as, for example, the traveling allowance or the VAT reduction for animal foodstuffs. This is because, in addition to its function of skimming commodity rents, the extraction levy is also intended to internalize external costs and create efficiency incentives (FÖS 2016). This will not be achieved if most mineral resources are exempt from it. It would make even more sense to replace the value-based extraction levy with a quantity-based tax (primary building materials tax) in order to better reflect the damage effect, which is usually linked to the extraction volume (cf. (FÖS et al. 2021).

Despite numerous commitments and declarations by Germany at national and international level on biodiversity protection and the reform of environmentally harmful subsidies, there has been little progress in reducing them in recent years; on the contrary, new benefits, such as the Baukindergeld, have been introduced. In view of the dramatically progressing climate and biodiversity crisis, the next federal government should give high priority to the reduction of environmentally harmful subsidies and finally turn words into deeds.

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<sup>6</sup> BVerfGE from 09.12.2008  
[http://www.bverfg.de/entscheidungen/ls20081209\\_2bvl000107.html](http://www.bverfg.de/entscheidungen/ls20081209_2bvl000107.html) = NJW 2009, 48 f

## LITERATURE

- Bär, H., Jacob, K., Meyer, E., Schlegelmilch, K. (2011): Wege zum Abbau umweltschädlicher Subventionen. Abrufbar unter: [http://www.foes.de/pdf/Studie\\_Subventionsabbau\\_fin.pdf](http://www.foes.de/pdf/Studie_Subventionsabbau_fin.pdf). Letzter Zugriff am: 27.7.2015.
- BBS (2020): bbs-Zahlenspiegel 2020. Daten und Fakten zur Baustoff-Steine-Erden-Industrie. Abrufbar unter: [https://www.baustoffindustrie.de/fileadmin/user\\_upload/bbs/Dateien/Downloadarchiv/Konjunktur/2020-06-11\\_BBS\\_Zahlenspiegel.pdf](https://www.baustoffindustrie.de/fileadmin/user_upload/bbs/Dateien/Downloadarchiv/Konjunktur/2020-06-11_BBS_Zahlenspiegel.pdf). Letzter Zugriff am: 14.1.2021.
- BfN (2017): Zerschneidung - Wiedervernetzung. Abrufbar unter: <https://www.bfn.de/themen/planung/eingriffe/wirkungsprognosen/zerschneidung-wiedervernetzung.html>. Letzter Zugriff am: 15.3.2021.
- BfN (2019): Abbau naturschädigender Subventionen und Kompensationszahlungen auf stoffliche Belastung. Abrufbar unter: [https://www.bfn.de/fileadmin/BfN/oekonomie/Dokumente/Abbau\\_naturschaedigender\\_Subventionen.pdf](https://www.bfn.de/fileadmin/BfN/oekonomie/Dokumente/Abbau_naturschaedigender_Subventionen.pdf). Letzter Zugriff am: 7.1.2021.
- BMEL (2016): Klimaschutz in der Land- und Forstwirtschaft sowie den nachgelagerten Bereichen Ernährung und Holzverwendung. Abrufbar unter: [https://www.bmel.de/SharedDocs/Downloads/DE/\\_Ministerium/Beiraete/agrarpolitik/Klimaschutzgutachten\\_2016.pdf?\\_\\_blob=publicationFile&v=3](https://www.bmel.de/SharedDocs/Downloads/DE/_Ministerium/Beiraete/agrarpolitik/Klimaschutzgutachten_2016.pdf?__blob=publicationFile&v=3). Letzter Zugriff am: 16.3.2021.
- BMEL (2019): Grundzüge der Gemeinsamen Agrarpolitik (GAP) und ihrer Umsetzung in Deutschland. Abrufbar unter: <https://www.bmel.de/DE/themen/landwirtschaft/eu-agrarpolitik-und-foerderung/gap/gap-nationale-umsetzung.html>. Letzter Zugriff am: 15.3.2021.
- BMF (2019): 27. Subventionsbericht des Bundes: Bericht der Bundesregierung über die Entwicklung der Finanzhilfen des Bundes und der Steuervergünstigungen für die Jahre 2017 bis 2020. Abrufbar unter: [https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren\\_Bestellservice/2019-11-06-Subventionsbericht.pdf?\\_\\_blob=publicationFile&v=7](https://www.bundesfinanzministerium.de/Content/DE/Downloads/Broschueren_Bestellservice/2019-11-06-Subventionsbericht.pdf?__blob=publicationFile&v=7). Letzter Zugriff am: 5.10.2020.
- BMI (2019): Ein Jahr Baukindergeld. Pressemitteilung. Abrufbar unter: <https://www.bmi.bund.de/SharedDocs/pressemitteilungen/DE/2019/09/ein-jahr-baukindergeld.html>. Letzter Zugriff am: 26.2.2021.
- BMI (2021): Baukindergeld. Abrufbar unter: <https://www.bmi.bund.de/DE/themen/bauen-wohnen/stadt-wohnen/wohnraumfoerderung/baukindergeld/baukindergeld-node.html>. Letzter Zugriff am: 26.2.2021.
- BMU (2018): Klimaschutz in Zahlen – Fakten, Trends und Impulse deutscher Klimapolitik Ausgabe 2018. Abrufbar unter: [https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahU-KEwjWsLKw\\_NbgAhXtMewKHS32DbAQFjABegQIB-BAC&url=https%3A%2F%2Fwww.bmu.de%2Ffileadmin%2FDaten\\_BMU%2FPools%2FBroschueren%2Fklimaschutz\\_in\\_zahlen\\_2018\\_bf.pdf&usq=AOvVawO3FHqUZ5Y9WWd7YaYED6SW](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahU-KEwjWsLKw_NbgAhXtMewKHS32DbAQFjABegQIB-BAC&url=https%3A%2F%2Fwww.bmu.de%2Ffileadmin%2FDaten_BMU%2FPools%2FBroschueren%2Fklimaschutz_in_zahlen_2018_bf.pdf&usq=AOvVawO3FHqUZ5Y9WWd7YaYED6SW). Letzter Zugriff am: 25.2.2019.
- BMUB (2015): Nationale Strategie zur biologischen Vielfalt. Kabinettsbeschluss vom 7. November 2007. Abrufbar unter: [https://www.bfn.de/fileadmin/BfN/biologischevielfalt/Dokumente/broschuere\\_biolog\\_viel\\_falt\\_strategie\\_bf.pdf](https://www.bfn.de/fileadmin/BfN/biologischevielfalt/Dokumente/broschuere_biolog_viel_falt_strategie_bf.pdf). Letzter Zugriff am: 17.3.2021.
- BMVI (2021): Entwicklung der Autobahnen in Deutschland seit der Wiedervereinigung 1990. Abrufbar unter: <https://www.bmvi.de/SharedDocs/DE/Artikel/StB/entwicklung-der-autobahnen-in-deutschland-seit-der-wiedervereinigung.html>. Letzter Zugriff am: 12.1.2021.
- BMW i (2021): Förderprogramme auf EU-Ebene. Abrufbar unter: <https://www.bmwi.de/Redaktion/DE/Artikel/Mittelstand/europaeische-mittelstandspolitik3.html>. Letzter Zugriff am: 15.3.2021.
- BUND (2021): Braunkohle und Landschaftszerstörung. Das Beispiel des Hambacher Waldes. Abrufbar unter: <https://www.bund-nrw.de/themen/braunkohle/hintergruende-und-publikationen/braunkohle-und-umwelt/braunkohle-und-landschaftszerstoerung-das-beispiel-hambacher-wald/>. Letzter Zugriff am: 4.3.2021.
- Bundesregierung (2019): Eckpunkte für das Klimaschutzprogramm 2030. Abrufbar unter: <https://www.bundesregierung.de/resource/blob/975232/1673502/768b67ba939c098c994b71c0b7d6e636/2019-09-20-klimaschutzprogramm-data.pdf?download=1>. Letzter Zugriff am: 7.11.2019.
- Bundesregierung (2020): Antwort der Bundesregierung auf die Kleine Anfrage der Abgeordneten Daniel Föst, Frank Sitta, Grigorios Aggelidis, weiterer Abgeordneter und der Fraktion der FDP – Drucksache 19/19766 – Verlängerung des Baukindergelds. Abrufbar unter: <https://dipbt.bundes-tag.de/doc/btd/19/201/1920123.pdf>. Letzter Zugriff am: 26.2.2021.
- Bundesregierung (o.J.): Bundeshaushaltsplan 2020. Einzelplan 10. Abrufbar unter: [https://www.bundeshaus-halt.de/fileadmin/de.bundeshaushalt/content\\_de/dokumente/2020/soll/epl10.pdf](https://www.bundeshaus-halt.de/fileadmin/de.bundeshaushalt/content_de/dokumente/2020/soll/epl10.pdf). Letzter Zugriff am: 21.4.2021.

- Dasgupta, P. (2021): The Economics of Biodiversity: The Dasgupta Review – Full Report. Abrufbar unter: <https://www.gov.uk/government/publications/final-report-the-economics-of-biodiversity-the-dasgupta-review>. Letzter Zugriff am: 16.3.2021.
- Destatis (2020): Energiesteuerstatistik – Fachserie 14 Reihe 9.3 – 2019. Abrufbar unter: <https://www.destatis.de/DE/Themen/Staat/Steuern/Verbrauchssteuern/Publikationen/Downloads-Verbrauchssteuern/energiesteuer-2140930197004.html>. Letzter Zugriff am: 5.10.2020.
- Destatis (o. J.): Pendeln in Deutschland: 68 % nutzen Auto für Arbeitsweg. Abrufbar unter: <https://www.destatis.de/DE/Themen/Arbeit/Arbeitsmarkt/Erwerbstaetigkeit/im-Fokus-Pendler.html>. Letzter Zugriff am: 16.2.2021.
- DIW (2018): Baukindergeld: Einkommensstarke Haushalte profitieren in besonderem Maße. Abrufbar unter: [https://www.diw.de/documents/publikationen/73/diw\\_01.c.593679.de/diw\\_aktuell\\_14.pdf](https://www.diw.de/documents/publikationen/73/diw_01.c.593679.de/diw_aktuell_14.pdf). Letzter Zugriff am: 26.2.2021.
- DUH (2021): Bundesregierung fördert unter dem Deckmantel des Klimaschutzes fossile Gasheizungen. Pressemitteilung. Abrufbar unter: <https://www.duh.de/presse/pressemitteilungen/pressemitteilung/bundesregierung-foerdert-unter-dem-deckmantel-des-klimaschutzes-fossile-gasheizungen/>. Letzter Zugriff am: 11.3.2021.
- Eichenberg, D., Bowler, D. E., Bonn, A., Bruehlheide, H., Grescho, V., Harter, D., Jandt, U., May, R., Winter, M., Jansen, F. (2020): Widespread decline in Central European plant diversity across six decades. Abrufbar unter: <https://onlinelibrary.wiley.com/doi/epdf/10.1111/gcb.15447>. Letzter Zugriff am: 25.1.2021.
- Europäische Kommission (2011): Die Biodiversitätsstrategie der EU bis 2020. Abrufbar unter: [https://ec.europa.eu/environment/nature/info/pubs/docs/brochures/2020%20Biod%20brochure\\_de.pdf](https://ec.europa.eu/environment/nature/info/pubs/docs/brochures/2020%20Biod%20brochure_de.pdf). Letzter Zugriff am: 15.3.2021.
- FiFo Köln (2019): Evaluierung von Steuervergünstigungen. Evaluierungsgruppe A: Energie- und Stromsteuer. Abrufbar unter: [http://www.fifo-koeln.org/images/stories/fifo-bericht%2028-a%20bmf-fe10-16\\_stv-eval\\_a.pdf](http://www.fifo-koeln.org/images/stories/fifo-bericht%2028-a%20bmf-fe10-16_stv-eval_a.pdf). Letzter Zugriff am: 10.1.2020.
- FNR (2019): Maisanbau in Deutschland. Abrufbar unter: <https://mediathek.fnr.de/grafiken/daten-und-fakten/bioenergie/biogas/maisanbau-in-deutschland.html>. Letzter Zugriff am: 21.4.2021.
- FNR (2021): Entwicklung der Anbaufläche für nachwachsende Rohstoffe. Abrufbar unter: <https://mediathek.fnr.de/anbauflaeche-fur-nachwachsende-rohstoffe.html>. Letzter Zugriff am: 19.3.2021.
- FÖS (2008): Schädliche Subventionen gegen die biologische Vielfalt. München.
- FÖS (2011): Das Potential der bergrechtlichen Förderabgabe für Ressourcenschutz und Länderfinanzen. Berlin.
- FÖS (2013): Vorschlag für die zukünftige Rolle von Biogas im EEG. Abrufbar unter: [http://www.foes.de/pdf/2013-10-Diskussionspapier-Biogas\\_im\\_EEG.pdf](http://www.foes.de/pdf/2013-10-Diskussionspapier-Biogas_im_EEG.pdf). Letzter Zugriff am: .
- FÖS (2015): Gesellschaftliche Kosten der Braunkohle. Studie im Auftrag von Greenpeace. Abrufbar unter: <http://www.foes.de/pdf/2015-11-FOES-Gesellschaftliche-Kosten-der-Braunkohle.pdf>. Letzter Zugriff am: 15.7.2016.
- FÖS (2016): Die bergrechtliche Förderabgabe als Instrument für Ressourcenschutz. Abrufbar unter: <http://www.foes.de/pdf/2016-11-FOES-Kurzanalyse-Foerderabgabe-Ressourcenschutz.pdf>. Letzter Zugriff am: 16.3.2017.
- FÖS (2017a): Subventionen für fossile Energien in Deutschland – Beitrag für eine transparente Berichterstattung im Rahmen der G20. Abrufbar unter: <http://www.foes.de/pdf/2017-05-FOES-Studie-Subventionen-fossile-Energien-Deutschland.pdf>. Letzter Zugriff am: 11.8.2017.
- FÖS (2017b): Nachhaltigkeitsprüfung im 26. Subventionsbericht. Bisherige Umsetzung und Ansätze zur Verbesserung. Abrufbar unter: <https://foes.de/publikationen/2017/2017-11-FOES-Briefing-Nachhaltigkeitspruefung-Subventionsbericht.pdf>. Letzter Zugriff am: 30.1.2020.
- FÖS (2018): Was Braunkohlestrom wirklich kostet. Abrufbar unter: <http://www.foes.de/pdf/2018-06-25-GPE-Studie-Braunkohle.pdf>. Letzter Zugriff am: 18.9.2019.
- FÖS (2019): Elektroautos und Verbrenner im Gesamtkostenvergleich. Abrufbar unter: [http://www.foes.de/pdf/2019-12\\_FOES\\_Autovergleich.pdf](http://www.foes.de/pdf/2019-12_FOES_Autovergleich.pdf). Letzter Zugriff am: 17.3.2021.
- FÖS (2020a): Umlenken! Subventionen abbauen, Strukturwandel gestalten, Klima schützen. Abrufbar unter: [https://foes.de/publikationen/2020/2020-07\\_FOES\\_Umlenken\\_FES.pdf](https://foes.de/publikationen/2020/2020-07_FOES_Umlenken_FES.pdf). Letzter Zugriff am: 4.9.2020.
- FÖS (2020b): Zehn klimaschädliche Subventionen im Fokus – Wie ein Subventionsabbau den Klimaschutz voranbringt und den Bundeshaushalt entlastet. Abrufbar unter: [https://foes.de/publikationen/2020/2020-11\\_FOES\\_10\\_klimaschaedliche\\_Subventionen\\_im\\_Fokus.pdf](https://foes.de/publikationen/2020/2020-11_FOES_10_klimaschaedliche_Subventionen_im_Fokus.pdf). Letzter Zugriff am: 26.11.2020.

- FÖS (2020c): Regionalf Flughäfen: Ökonomisch und klimapolitisch unverantwortliche Subventionen. Abrufbar unter: [https://foes.de/publikationen/2020/2020\\_07\\_FOES\\_Regionalflyghaefen.pdf](https://foes.de/publikationen/2020/2020_07_FOES_Regionalflyghaefen.pdf). Letzter Zugriff am: 15.3.2021.
- FÖS (2020d): Tierwohl fördern, Klima schützen. Abrufbar unter: [https://foes.de/publikationen/2020/2020-01\\_FOES\\_Tierwohl-foerdern-Klima-schuetzen.pdf](https://foes.de/publikationen/2020/2020-01_FOES_Tierwohl-foerdern-Klima-schuetzen.pdf). Letzter Zugriff am: 11.12.2020.
- FÖS (2021): Zehn klimaschädliche Subventionen sozial gerecht abbauen – ein Zeitplan. Abrufbar unter: [https://foes.de/publikationen/2021/2021-02\\_FOES\\_Klimaschaedliche\\_Subventionen\\_sozial\\_gerecht\\_abbauen.pdf](https://foes.de/publikationen/2021/2021-02_FOES_Klimaschaedliche_Subventionen_sozial_gerecht_abbauen.pdf). Letzter Zugriff am: 2.3.2021.
- FÖS, Fraunhofer ISI, FFU Berlin (2021): Optionen für ökonomische Instrumente des Ressourcenschutzes. Abschlussbericht. Abrufbar unter: [https://foes.de/publikationen/2021/2021-03\\_FOES\\_UBA\\_Options\\_oeconomische\\_Instrumente\\_Ressourcenschutz.pdf](https://foes.de/publikationen/2021/2021-03_FOES_UBA_Options_oeconomische_Instrumente_Ressourcenschutz.pdf). Letzter Zugriff am: 16.3.2021.
- FÖS, FUE (2021): Was nützt (D-)EITI? Die Transparenzinitiative über Rohstoffabbau in Deutschland auf dem Prüfstand. Abrufbar unter: [https://foes.de/publikationen/2021/2021-01\\_FOES\\_FUE\\_Was\\_nuetzt\\_die\\_D-EITI\\_web.pdf](https://foes.de/publikationen/2021/2021-01_FOES_FUE_Was_nuetzt_die_D-EITI_web.pdf). Letzter Zugriff am: 4.3.2021.
- FÖS, GWS (n.V.): Reform und Abbau umweltschädlicher Subventionen. Teilbericht im Rahmen des Vorhabens „Ansätze für eine ökologische Fortentwicklung der öffentlichen Finanzen“. Umweltforschungsplan des Bundesministeriums für Umwelt, Naturschutz, Bau und Reaktorsicherheit.
- FÖS, IKEM (2016): Umweltwirkungen von Diesel im Vergleich zu anderen Kraftstoffen. Bewertung der externen Kosten der Dieseldieseltechnologie im Vergleich zu anderen Kraftstoffen und Antrieben. Abrufbar unter: <http://www.foes.de/pdf/2016-05-FOES-IKEM-Studie-Umweltwirkungen-Diesel.pdf>. Letzter Zugriff am: 29.6.2016.
- FUE (2019): Stellungnahme an die Bundesregierung zum Entwurf einer Nationalen Bioökonomiestrategie. Abrufbar unter: <https://www.forumue.de/wp-content/uploads/2019/07/Stellungnahme-Bio%C3%B6konomie.pdf>. Letzter Zugriff am: 19.3.2021.
- GIZ, (Hrsg.) (2019): D-EITI Bericht für 2017. Abrufbar unter: [https://d-eiti.de/wp-content/uploads/2020/06/D-EITI\\_Bericht\\_f%C3%BCr\\_2017\\_Dez.-2019.pdf](https://d-eiti.de/wp-content/uploads/2020/06/D-EITI_Bericht_f%C3%BCr_2017_Dez.-2019.pdf). Letzter Zugriff am: 14.1.2021.
- GIZ (Hrsg.) (2021): D-EITI-Bericht für 2018. Abrufbar unter: <https://d-eiti.de/wp-content/uploads/2021/02/3.-DEITI-Bericht-Bericht-f%C3%BCr-2018.pdf>. Letzter Zugriff am: 4.3.2021.
- Gubler, L., Ismail, S. A., Seidl, I. (2020): Biodiversitätsschädigende Subventionen in der Schweiz. Swiss Academies Factsheet 15 (7). Abrufbar unter: [https://www.wsl.ch/fileadmin/user\\_upload/WSL/Projekte/biodiversitaetsrelevante\\_fehlanreize\\_111/Factsheet\\_Subventionen\\_D\\_Druck.p1.pdf](https://www.wsl.ch/fileadmin/user_upload/WSL/Projekte/biodiversitaetsrelevante_fehlanreize_111/Factsheet_Subventionen_D_Druck.p1.pdf). Letzter Zugriff am: 17.3.2021.
- Handelsblatt (2021): Verteilung von Milliardensummen – Das soll die Landwirtschaft für ihr Steuergeld leisten. Abrufbar unter: <https://www.handelsblatt.com/politik/deutschland/agrarpolitik-verteilung-von-milliardensummen-das-soll-die-landwirtschaft-fuer-ihr-steuergeld-leisten-/26793376.html?ticket=ST-1038104-rdKk1xLwfdxHVGUzJSlc-ap4>. Letzter Zugriff am: 15.3.2021.
- Harding, M. (2014): Personal Tax Treatment of Company Cars and Commuting Expenses. Abrufbar unter: [http://www.oecd-ilibrary.org/taxation/personal-tax-treatment-of-company-cars-and-commuting-expenses\\_5jz14cg1s7vl-en](http://www.oecd-ilibrary.org/taxation/personal-tax-treatment-of-company-cars-and-commuting-expenses_5jz14cg1s7vl-en). Letzter Zugriff am: 19.11.2014.
- IfW Kiel (2018): Kieler Subventionsbericht und die Kieler Subventionsampel: Finanzhilfen des Bundes und Steuerergünstigungen bis 2017 –eine Aktualisierung. Abrufbar unter: [https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/-ifw/Kieler\\_Beitraege\\_zur\\_Wirtschaftspolitik/wipo\\_14.pdf](https://www.ifw-kiel.de/fileadmin/Dateiverwaltung/IfW-Publications/-ifw/Kieler_Beitraege_zur_Wirtschaftspolitik/wipo_14.pdf). Letzter Zugriff am: 5.10.2020.
- IMK (2019): Wirtschaftliche Instrumente für eine klima- und sozialverträgliche CO<sub>2</sub>-Bepreisung. LOS 2: Belastungsanalyse. Abrufbar unter: [https://www.boeckler.de/pdf/p\\_imk\\_bmu\\_gutachten\\_co2.pdf](https://www.boeckler.de/pdf/p_imk_bmu_gutachten_co2.pdf). Letzter Zugriff am: 25.11.2019.
- IW Köln (2018): Setzt die Wohnungspolitik die richtigen Anreize für den Wohnungsbau? Bewertung des Koalitionsvertrags von CDU, CSU und SPD. Abrufbar unter: [https://www.iwkoeln.de/fileadmin/user\\_upload/Studien/Gutachten/PDF/2018/IW-Gutachten\\_Bewertung\\_KoaV2018.pdf](https://www.iwkoeln.de/fileadmin/user_upload/Studien/Gutachten/PDF/2018/IW-Gutachten_Bewertung_KoaV2018.pdf). Letzter Zugriff am: 26.2.2021.
- Jacob, K., Range, C., Guske, A. L., Weiland, S., Pestel, N., Sommer, E. (2016): Verteilungswirkungen umweltpolitischer Maßnahmen und Instrumente. Abrufbar unter: [https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2018-01-11\\_texte\\_73-2016\\_abschlussbericht\\_verteilungswirkungen\\_final.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2018-01-11_texte_73-2016_abschlussbericht_verteilungswirkungen_final.pdf). Letzter Zugriff am: 17.4.2019.
- Karlsruher Institut für Technologie (2020): Deutsches Mobilitätspanel (MOP) – Wissenschaftliche Begleitung und Auswertungen Bericht 2019/2020: Alltagsmobilität und Fahrleistung. Abrufbar unter: <https://publikationen.bibliothek.kit.edu/1000126557>. Letzter Zugriff am: 4.3.2021.



- KfW (2018): Förderreport KfW Bankengruppe. Stichtag 31. Dezember 2018. Abrufbar unter: [https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport\\_2018.pdf](https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport_2018.pdf). Letzter Zugriff am: 26.2.2021.
- KfW (2019): Förderreport KfW Bankengruppe. Stichtag 31. Dezember 2019. Abrufbar unter: [https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport\\_2019.pdf](https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport_2019.pdf). Letzter Zugriff am: 26.2.2021.
- KfW (2020): Förderreport KfW Bankengruppe. Stichtag 31. Dezember 2020. Abrufbar unter: [https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport\\_2020.pdf](https://www.kfw.de/Presse-Newsroom/Pressematerial/F%C3%B6rderreport/KfW-F%C3%B6rderreport_2020.pdf). Letzter Zugriff am: 26.2.2021.
- Langthaler, E. (2016): Tiere mästen und essen: Die Fabrikation des globalen Fleisch-Komplexes. Abrufbar unter: [https://www.researchgate.net/publication/315797322\\_Tiere\\_masten\\_und\\_essen\\_Die\\_Fabrikation\\_des\\_globalen\\_Fleisch-Komplexes](https://www.researchgate.net/publication/315797322_Tiere_masten_und_essen_Die_Fabrikation_des_globalen_Fleisch-Komplexes). Letzter Zugriff am: 16.3.2021.
- LBV (2021): Steinbrüche und Kiesgruben. Ersatzlebensräume für seltene Pflanzen und Tiere. Abrufbar unter: <https://www.lbv.de/naturschutz/massnahmen/lebensraeume-schuetzen/steinbrueche-sand-und-kiesgruben/>. Letzter Zugriff am: 4.3.2021.
- Niedersächsisches Finanzministerium (2021): Antrag: Maßnahmen von finanzieller Bedeutung für den Einzelplan 13. Drucksache 18/8286. Abrufbar unter: [https://www.landtag-niedersachsen.de/drucksachen/drucksachen\\_18\\_10000/08001-08500/18-08286.pdf](https://www.landtag-niedersachsen.de/drucksachen/drucksachen_18_10000/08001-08500/18-08286.pdf). Letzter Zugriff am: 4.3.2021.
- Rave, T. (2005): Umweltorientierte Subventionspolitik in Deutschland. München.
- Schmidt, U. (2020): PM 22/2020: Bund weitet den Finanzbeitrag an die Seeschifffahrt auf die Hochseefischerei aus. Abrufbar unter: <https://www.uwe-schmidt-mdb.de/pm-22-2020-bund-weitet-den-finanzbeitrag-an-die-seeschifffahrt-auf-die-hochseefischerei-aus/>. Letzter Zugriff am: 21.4.2021.
- Seibold, S., Gossner, M. M., Simons, N. K., Blüthgen, N., Müller, J., Ambarli, D., Ammer, C., Bauhus, J., Fischer, M., Habel, J. C., Linsenmaier, K. E., Nauss, T., Penone, C., Prati, D., Schall, P., Schulze, E.-D., Vogt, J., Wöllauer, S., Weisser, W. W. (2019): Arthropod decline in grasslands and forests is associated with landscape-level drivers. Abrufbar unter: <https://www.nature.com/articles/s41586-019-1684-3>. Letzter Zugriff am: 25.1.2021.
- Seidl, I., Gowdy, J. (1999): Monetäre Bewertung von Biodiversität: Grundannahmen, Schritte, Probleme und Folgerungen.
- Siegrist, D., Gessner, S., Ketterer, L. (2015): Naturnaher Tourismus. Qualitätsstandards für sanftes Reisen in den Alpen.
- Statista (2020): Milcherzeugung in Deutschland. Abrufbar unter: <https://de.statista.com/statistik/daten/studie/28726/umfrage/milcherzeugung-in-deutschland/>. Letzter Zugriff am: 16.3.2021.
- Statistisches Bundesamt (2020): Beschäftigte und Umsatz der Betriebe im Verarbeitenden Gewerbe: Deutschland, Jahre, Wirtschaftszweige (WZ2008 2-/3-/4-Steller). Abrufbar unter: [www.destatis.de](http://www.destatis.de). Letzter Zugriff am: 14.1.2021.
- Thünen-Institut (2020): Nutztierhaltung und Fleischproduktion in Deutschland. Abrufbar unter: <https://www.thuenen.de/de/thema/nutztiershyhaltung-und-aquakultur/nutztierhaltung-und-fleischproduktion-in-deutschland/>. Letzter Zugriff am: 12.1.2021.
- UBA (2016): Umweltschädliche Subventionen in Deutschland. Abrufbar unter: [https://www.umweltbundesamt.de/sites/default/files/medien/479/publikationen/uba\\_fachbroschuere\\_umweltschaedliche-subventionen\\_bf.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/479/publikationen/uba_fachbroschuere_umweltschaedliche-subventionen_bf.pdf). Letzter Zugriff am: 12.3.2018.
- UBA (2018): Übersicht über die Länderregelungen zu Wasserentnahmeentgelten. Abrufbar unter: [https://www.umweltbundesamt.de/sites/default/files/medien/2875/dokumente/tabelle\\_wasserentnahmeentgelte\\_der\\_laender\\_stand\\_2018\\_reinfassung.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/2875/dokumente/tabelle_wasserentnahmeentgelte_der_laender_stand_2018_reinfassung.pdf). Letzter Zugriff am: 17.3.2021.
- UBA (2019a): Flächenverbrauch für Rohstoffabbau. Abrufbar unter: <https://www.umweltbundesamt.de/daten/flaeche-boden-land-oekosysteme/flaeche/flaechenverbrauch-fuer-rohstoffabbau#inlandische-rohstoffentnahme>. Letzter Zugriff am: 13.1.2021.
- UBA (2019b): Indikator: Landschaftszerschneidung. Abrufbar unter: <https://www.umweltbundesamt.de/indikator-landschaftszerschneidung#die-wichtigsten-fakten>. Letzter Zugriff am: 12.1.2021.
- UBA (2020a): Beitrag der Landwirtschaft zu den Treibhausgas-Emissionen. Abrufbar unter: <https://www.umweltbundesamt.de/daten/land-forstwirtschaft/beitrag-der-landwirtschaft-zu-den-treibhausgas-emissionen-aus-der-landwirtschaft>. Letzter Zugriff am: 21.12.2020.

UBA (2020b): Siedlungs- und Verkehrsfläche. Abrufbar unter: <https://www.umweltbundesamt.de/daten/flaeche-boden-land-oekosysteme/flaeche/siedlungs-verkehrsflaeche#anhaltender-flachenverbrauch-fur-siedlungs-und-verkehrszwecke->. Letzter Zugriff am: 13.1.2021.

UBA (2020c): Fahrleistungen, Verkehrsaufwand und „Modal Split“. Abrufbar unter: <https://www.umweltbundesamt.de/daten/verkehr/fahrleistungen-verkehrsaufwand-modal-split#fahrleistung-im-personen-und-guterverkehr>. Letzter Zugriff am: 12.10.2020.

UBA (2020d): Methodenkonvention 3.1 zur Ermittlung von Umweltkosten. Kostensätze. Stand 12/2020. Abrufbar unter: [https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-12-21\\_methodenkonvention\\_3\\_1\\_kostensaetze.pdf](https://www.umweltbundesamt.de/sites/default/files/medien/1410/publikationen/2020-12-21_methodenkonvention_3_1_kostensaetze.pdf). Letzter Zugriff am: 24.2.2021.

Zeit (2017): Deutsche pendeln im Schnitt rund 17 Kilometer zur Arbeit. Abrufbar unter: <https://www.zeit.de/mobilitaet/2017-09/pendler-berufspendler-arbeit-zahl-des-tages>. Letzter Zugriff am: 12.10.2020.