

ENVIRONMENTAL REPORT 2012

Responsibility in a finite world

Summary for policy makers

June 2012



Contents

SUMMARY	3
The new growth debate	3
DECOUPLING PROSPERITY FROM RESOURCE USE	4
Metallic and mineral resources	4
Food consumption as a policy issue	5
Freight transport and climate protection	6
Mobility and quality of life in urban agglomerations	7
APPRECIATING THE VALUE OF ECOSYSTEM SERVICES	7
Environmentally sound use of forests	7
Peatlands as carbon sinks	8
Cross-sectoral marine protection	9
REINFORCING INTEGRATED CONCEPTS	10
Integrated environmental protection: the example of industrial permitting	10
Integrated monitoring	11
Environmental and sustainability strategies	11
CONCLUSION	12

SUMMARY

***1.** In future, the environmental policy debate will increasingly be determined by the central concept of environmental limits: unlimited consumption of natural resources is not possible in a finite world. Sustainable economic activity requires that prosperity be decoupled from resource use by making fundamental innovations and appreciating the value of vital ecosystem services.

In this Environmental Report, the German Advisory Council on the Environment (SRU) has deliberately focused on a small number of key topics where it sees a special need for action or guidance, or

where important basic decisions will be needed in the near future. By giving priority to these key issues, the Council aims to stress its mandated task of facilitating judgements by all bodies responsible for environmental policy decisions in Germany. The SRU has identified the key issues in an iterative process on the basis of its own analyses and important reports on the future development of major trends, and has bundled them into three thematic clusters: “Decoupling prosperity from resource use”, “Appreciating the value of ecosystem services” and “Reinforcing integrated concepts”.

The new growth debate

***2.** Both in Germany and at international level, an intensive debate is in progress about the “green economy” and the “post-growth society”. In essence this is a question of whether and how continuous growth can be achieved without exceeding environmental limits in the long term. Environmental limits are already being exceeded in many regions in the areas of climate change, loss of biodiversity, excessive nutrient loads, overfishing, land take for commercial uses, soil erosion or water shortage.

The failure to observe environmental limits can involve the passing of tipping points which could have serious repercussions on the environment, economy and society. Compliance with environmental limits should therefore be seen as a priority in the national, European and international debate on the environment – not only in climate protection issues.

Although the fact that environmental limits exist is undeniable, the task of defining them specifically at the various spatial levels is a very challenging one. In addition to scientific findings, normative judgements about socially acceptable risks and the expected degree of precautionary action must also play an important role.

However, compliance with environmental limits does not necessarily mean the end of growth. The

potential for decoupling prosperity from resource use is far from exhausted, and that applies to energy supply in particular. One indispensable factor for economic activity within environmental limits is an innovation strategy that goes hand in hand with the transformation of major infrastructure and production systems. As a result of various market and government failures, however, market prices are not producing the right signals. In line with their constitutional responsibility (Article 20a of the German Basic Law, Article 191 of the Treaty on the Functioning of the European Union), governmental institutions will have to take regulatory action to bring about a breakthrough in solutions for the future.

Nevertheless, it is possible that long-term limits to economic growth may exist even if all potential for ecological transformation is fully exploited. It is therefore important to make an early start on a debate about how essential societal objectives can remain achievable with little or no economic growth. Central fields of action in this precautionary debate include defusing resource allocation conflicts, safeguarding employment, investments in a growth-independent economy and financing state expenditure and social security systems. Moreover, in the interests of better communication of the achievement of prosperity objectives, fresh thought should be given to the task of measuring prosperity.

DECOUPLING PROSPERITY FROM RESOURCE USE

***3.** The first cluster in this report is concerned with the potential for decoupling and the relevant design options in four fields: metallic and mineral resources, food consumption, freight transport and urban mobility. In all four fields, growth in national income has in the past involved an increase in activities that generate pressures on the environment. Not least for this reason they are currently

facing major ecological challenges. In all these fields, however, there are ways and means of decoupling prosperity from environmental pollution which set out to achieve marked reductions in consumption of the environment as a resource or as a sink for pollutants, without having adverse effects on economic development and on other environmental media.

Metallic and mineral resources

***4.** The present debate about abiotic, non-energy resources focuses on security of supply for a competitive economy. By contrast, it pays relatively little attention to the environmental impacts of resource extraction and processing. Resource extraction in particular gives rise to extensive encroachments on natural systems. Subsequent processing steps often involve the use of potentially harmful chemicals and substantial inputs of energy associated with greenhouse gas emissions.

Environmentally sound resource management aims on the one hand to decouple resource consumption from economic growth by increasing efficiency, and on the other to reduce the environmental impacts of the resource industries. Possible approaches include a marked increase in closed-cycle management of resources and a reduction in environmental pressures along the entire value chain. One special challenge to the resource sector is reducing the environmental impacts of resource extraction, because today these mainly occur outside Germany.

The SRU regards the following approaches as useful means of achieving environmentally sounder resource management:

Closed-cycle management, for example, can be expanded by introducing minimum standards for disposal of end-of-life electrical and electronic equipment, laying down higher recovery rates, requiring

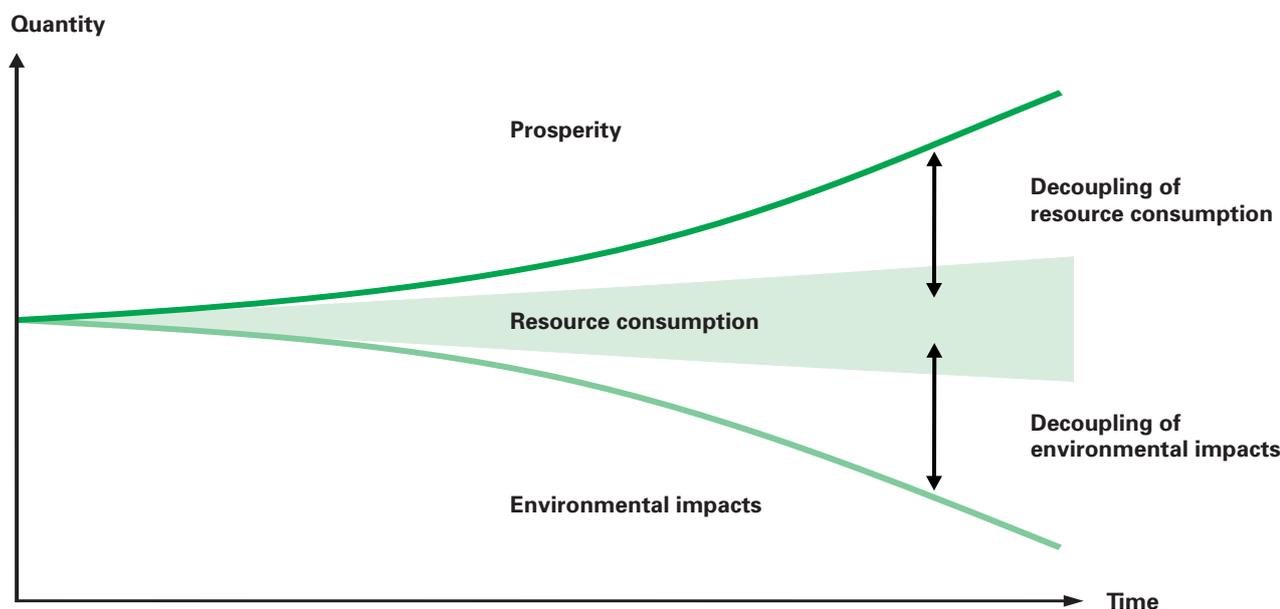
compulsory evidence of the functioning of used equipment for export, and establishing deposit systems for mobile phones and computers.

At national and European level the environmental compliance of resource extraction can be improved by a package of regulatory and economic instruments. For example, the legislation on mining should be reformed with a view to strengthening the position of nature conservation interests. Moreover, introducing a tax on primary construction materials could reduce the pressure to continue extracting mineral resources in Germany and could provide an incentive to make increased use of secondary raw materials in the construction industry. Furthermore, a move away from the present policy of generous allocation of emission allowances to industry could help to reduce the climate impacts of the production of resource-intensive goods.

To this end the sectoral benchmarks to be laid down for the allocation of emission allowances from 2013 onwards need to lead to ambitious emission reduction obligations. Potential carbon-leakage effects must not result in over-allocation of emission allowances in certain sectors, including in particular the resource-intensive industries. Over-allocation endangers the effectiveness of the entire emissions trading scheme. In order to reduce the existing over-allocation of emission allowances, the emission target for 2020 must be stepped up.

The compliance of resource extraction in resource-exporting countries with appropriate environmental and social standards should be embodied through international resource agreements and

certification systems. The German government and the EU could be major driving forces behind an international framework treaty on resources.



The two decoupling objectives of green resource management (source: SRU, 2012)

Food consumption as a policy issue

*5. The consumption of food, through its production, processing and transport, has significant impacts on nature and the environment. This applies above all to meat consumption, and also to consumption of dairy products. In view of the world's growing population and the serious environmental impacts of intensive farming, Germany's high per capita consumption of animal products, which require considerably more land per calorie than plant products, is not capable of global generalisation. This raises the fundamental question of how policy makers can induce consumers to adopt more environmentally aware consumption habits.

It is possible to draw up a number of general guidelines for environment-friendly food consumption: the most pressing of these is to reduce food wastage. A reduction of at least 50 percent by 2025 should be defined as a political goal. Among other things, this should be achieved by reviewing the requirements for "best-before" dates on food packs.

A reduction in consumption of animal products is desirable. The German government is therefore recommended to abolish the reduced rate of value-added tax on animal products. It should also evaluate Danish experience with the introduction of a tax on saturated fatty acids and investigate the possibility of introducing such a tax in Germany if this proves to have positive impacts on the environment.

Preference should also be given to products from extensive grazing and from feeding with extensively produced feeds. One promising means of promoting consumption of goods produced on land which has been managed in line with nature conservation standards is to introduce, in addition to the existing EU eco label, a "nature conservation label". The label should identify products which have been grown on land subject to agro-environmental measures or contract-based nature conservation.

To promote a more environmentally aware style of consumption, there is also a need to step up information campaigns, improve educational offerings and reshape the range of products available to the public in the restaurant and canteen sector. In addition,

more should be done to encourage the establishment of dialogue forums and round tables with the aim of networking private actors, in order to exploit the great potential that non-governmental actors possess in this field.

Freight transport and climate protection

*6. The predicted growth rates for (road) freight traffic are so high that the climate policy targets for 2050 are at risk unless drastic measures are taken. However, transport policy has so far failed to develop viable ideas for sustainable freight traffic.

Current forecasts for the growth of freight transport demand appear too high. Most forecasts assume a dynamic expansion of infrastructures which does not seem realistic in view of sharply rising costs and limited budgets. Infrastructure shortages, marked increases in transport costs and structural changes in the national economy will in all probability bring a considerable reduction in the pace of transport growth.

However, such a decoupling of economic growth from freight traffic growth and other – technical and logistical – efficiency improvements will not be sufficient to achieve the climate protection targets. In the long term, therefore, there is a need to switch freight transport to renewable energy sources. Since biofuels from sustainable cultivation will not be available in sufficient quantities, this primarily requires a changeover to systems based on electricity from renewable sources. Although the potential for shifting from road to rail is widely underestimated, this will not be sufficient either. It therefore needs to be supplemented by “renewables-based electrification of roads”.

Studies to date indicate that overhead-cable systems for heavy goods vehicles (HGVs) are an interesting option. Against this background, the introduction of an overhead-cable system for electric-powered HGVs (“trolley trucks”) should be given thorough examination from a technical and economic point of view and in terms of European law and tested in demonstration projects. The interactions with rail freight traffic should also be investigated.

The technical potential for efficiency improvements in freight traffic should in particular be exploited by laying down binding fuel consumption limits for trucks. Taxing motor fuels on the basis of their carbon content and including external costs in the HGV toll system would create additional incentives for technological innovation, logistical optimisation and shifting to rail transport.

In the field of infrastructure policy there is an urgent need to set new priorities that favour climate-friendly solutions for transport by road and rail. The German federal transport route planning process should therefore be redesigned to create a goal-oriented strategic network planning system geared primarily to climate policy objectives. To this end the procedure should be given a legal foundation which ensures that environmental impact assessment and public involvement take place at an early stage.

Mobility and quality of life in urban agglomerations

*7. The problems of over-use of natural resources and competition between uses of the limited public space are particularly pertinent in urban agglomerations. Here, the impacts of automobile-dominated mobility on urban quality of life are particularly visible: As well as causing noise problems, emissions of atmospheric pollutants and accident risks, car traffic reduces the availability of quiet and green recreation areas and limits the mobility of sections of the population that do not use a car. At the same time, urban agglomerations offer many opportunities for sustainable mobility.

To relieve urban agglomerations of the pressures of car traffic and make traffic generally more environment-friendly, a shift between the different modes of transport is needed. As a medium-term target, efforts should be made to increase the share of the modal split accounted for by the "environmental network" (local public transport, cycle and pedestrian traffic) by 20 percent by 2025 (compared to the status quo in the concerned area), and in the

long term to raise it to between 70 and 80 percent. To achieve such a target, there is a need to step up assistance for and investment in the environmental network. Such measures include a cycle-friendly and pedestrian-friendly infrastructure with a 30 kph speed limit as the standard speed limit for motorised vehicles in inner city areas. The financing of local public transport can only be ensured effectively by means of appropriate federal legislation.

However, there is also a need to correct unjustified and environmentally harmful subsidies for car traffic (e.g. reduced tax rate on diesel fuel and low taxation of privately used company cars).

An integrated traffic development planning system that includes effective cooperation between the city and its surroundings can help to decouple traffic from mobility. Emissions by the remaining car traffic must be kept as low as possible. To this end the system of "environmental zones" should be developed further.

APPRECIATING THE VALUE OF ECOSYSTEM SERVICES

*8. The second key issue, "Appreciating the value of ecosystem services", is concerned with the question of how to revalorise ecosystem services that have been neglected in the past. The SRU discusses this for the examples of peatlands, forests

and seas. In all these fields the question is how to strengthen the position of ecosystems vis-à-vis direct commercial use interests so that they can also provide non-marketable services on a long-term basis.

Environmentally sound use of forests

*9. A wide range of uses compete for forest land: timber is of particular commercial importance as a raw material, a construction material and a source of energy. Another function that is at least equally important, however, is that of forests as a natural habitat and a factor in local and global climate protection. On the one hand, near-natural forests are an important sink for greenhouse gases, while on the other hand they are essential for adaptation to

the extreme weather events which can be expected to result from climate change.

The rise in energy and raw material prices brings with it the threat of commercialisation of forest use, which represents an increasing risk to the non-commercial functions of the forests. When considering possible uses, however, priority must be given to conserving the natural basis of life. Steps

must therefore be taken to conserve it on a sustainable basis.

The forest related targets of the German National Strategy on Biological Diversity must be implemented as a matter of urgency and laid down in corresponding Länder strategies for specific areas. The measures taken in this context must include providing legal safeguards for naturally developing forest on 10 percent of the suitable forest areas belonging to the public sector. A high-quality certification system should be used on at least 80 percent of the area under forest.

There should be minimum ecological standards for the entire area under forest in Germany. This could, for example, be assisted by a more concrete definition of "good forestry practice" in Section 11 subsection 1 of the Federal Forests Act (Bundeswaldgesetz) or secondary legislation powers under the Federal Nature Conservation Act (Bundesnaturschutzgesetz). At the same time these standards would also form the baseline for a payment for ad-

ditional public services going beyond this standard. Assessment of damage caused by game should also include damage to biological diversity. The task of preventing damage due to game should be given priority over financial compensation measures.

In the interests of climate change mitigation in the years ahead, efforts should be made to build up additional carbon stocks in forests by increasing the age of forest stands. High forest age is also the basis for the existence of many endangered forest species. To protect the carbon storage function, the SRU recommends sparing use of biomass from forests. At least 50 percent of the natural timber stocks should be maintained. While having regard to nature conservation and soil protection, the potential of timber from landscape maintenance and residual timber should be exploited. Full carbon accounting must always take account of not only the surface and sub-surface biomass, but also the carbon stored in dead wood, litter and forest soil.

Peatlands as carbon sinks

***10.** Peat soils make an outstanding, but hitherto largely neglected contribution to climate protection. They contain and store large quantities of carbon. This ecosystem service provided by peat soils is destroyed by land drainage, especially for agricultural use. In Germany this is true of some 12,000 km², which account for about 4 percent of the country's annual greenhouse gas emissions and are thus responsible for around one third of greenhouse gas emissions by the agricultural sector.

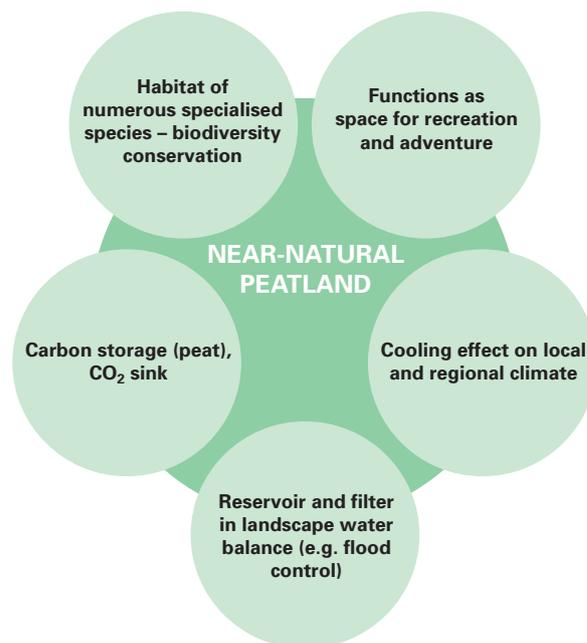
Long-term recovery of degraded peatlands to a near-natural state can therefore make a significant contribution to climate protection, through rewetting, extensification and restoration. In addition to relieving the pressure on the climate, this also gives rise to positive synergies for biodiversity and the water balance. To make it possible to take specific protective measures, it is first necessary to create and harmonise the basic data. The SRU therefore recommends a "Federal Initiative on Peatland Protection" in two phases.

Phase I should collect data about the location, status (use, water level, biodiversity status and potential) and ownership situation of all peatlands by 2017. In parallel with this, a register of current and completed restoration projects should be established, with a platform for sharing the relevant information. Near-natural mires must be safeguarded and their condition improved where necessary.

In Phase II, the water level of all raised bog soils should be increased until they reach a near-natural condition (where possible from a hydrological point of view). In the interests of conserving raised bog soils both inside and outside Germany, a plan for phasing-out peat use should be drawn up. As well as the end of peat cutting in Germany, this should also include research into alternatives and a ban on the use of peat. In the case of fens, their water levels should be raised and their use made more extensive in order to achieve a marked reduction in greenhouse gas emissions from these soils.

Successes and undesirable developments in the field of conservation, extensification and restoration measures must be documented in a monitoring programme.

Furthermore, the services that mires perform for climate protection must be rewarded appropriately. Possible options are to expand the funding resources for peatland conservation, abolish misguided incentives that make drainage attractive, and make payments for the maintenance of restored peat soils and extensification of their use. Moreover, the protection status of peat soils should also be reinforced in the legislation on nature conservation and soil protection, particularly vis-à-vis competing uses.



Ecosystem services of near-natural peatland with high water level (source: SRU, 2012)

Cross-sectoral marine protection

***11.** The North Sea and Baltic Sea are under massive pressure from a large number of uses leading to a wide range of impacts on their ecosystems. Various parties are responsible for this, in particular the fisheries sector, agriculture, international shipping, energy use and resource extraction. Consequences of these impacts include changes in the food web, harmful effects on benthic communities, eutrophication, noise pollution, and the accumulation of hazardous substances in organisms at the end of food chains.

The central challenge of marine policy is to integrate marine protection in the various sectoral policies. To this end there is a need for changes in these policies and the establishment of ambitious conservation targets. Although the EU's Marine Strategy Framework Directive (MSFD) takes a comprehensive approach to protecting the seas, it has little influence on the relevant sectoral, and especially European, policies. Ambitious implementation of the directive nevertheless offers considerable opportunities for marine protection. The objectives and instruments of the regional marine protection conventions (Helsinki and OSPAR conventions) provide an important basis for this and should be followed up as far as possible.

At European level, further reforms of the Common Fisheries Policy and the Common Agricultural Policy are a priority. At international level there is a need to continue developing environmental standards for marine shipping. Ambitious marine protection targets established in the course of implementing the MSFD and embodied in the European maritime policy provide opportunities for developing the relevant sectoral policies in the interests of marine protection.

In addition, marine protection can be improved by creating a high protection status in marine protected areas, including targeted management plans, the designation of no-take zones and the introduction of adequate monitoring plans, and by reinforcing the steering effect of the spatial plans for the German exclusive economic zone (EEZ).

Reinforcing marine protection in Germany in terms of institutions and personnel is indispensable if the conservation of marine biodiversity and marine resources is to be successful. In this context, consideration should be given to setting up a Federal Marine Agency.

REINFORCING INTEGRATED CONCEPTS

***12.** The third part of this report, “Reinforcing integrated concepts”, looks at essential institutional fundamentals of successful environmental policy. The basis for effective environmental protection is an integrated monitoring system that provides an appropriate representation of the interactions between substance inputs and the dynamics of ecosystems. An integrated approach in environmental protection includes methods that detect and prevent any shifting of problems from one environmental medium to another. This is discussed here using the example of industrial permitting law. The

integration of environmental issues in other sectors is also of outstanding importance. The starting point for this is an updated long-term system of environmental targets which serves as a compass and can be used to measure the performance and success of policy measures. Environmental programmes and sustainability strategies at European and national level are the appropriate processes for expert discussion of such objectives and for establishing them with high priority in the individual policy sectors.

Integrated environmental protection: the example of industrial permitting

***13.** Environmental protection basically requires an integrated approach if problems are to be solved in a meaningful way and not merely shifted around. In Germany, however, the integrated approach dictated by European law has yet to be fully implemented in industrial permitting. This requires a holistic view of the environment in order to avoid mere shifting of environmental pressures. In the first instance, this applies to formal integration in industrial permitting. The aim should be, as laid down in the Industrial Emissions Directive (IED), to ensure that all authorities responsible for such procedures work on the basis of an effectively integrated concept. In Germany this is currently only the case in a small number of Länder. Furthermore, there is a trend towards a “municipalisation” of environmental administration, which presents additional obstacles to the integration of procedures. To this end the system of environmental inspections required by Article 23(1) of the IED should be used to ensure joint recording of all environmental impacts. This would provide a stimulus to organise authorities so that only one authority had overall responsibility for inspections and for permitting and monitoring.

It would also be desirable to have a single permitting process in the form of an integrated installa-

tion permit. Such a process could only be given life at Land level if the relevant sectoral authorities were brought together. For example, it would be possible to establish the integrated installation permit by offering a standard arrangement in the Administrative Procedures Act (Verwaltungsverfahrensgesetz – VwVfG).

With regard to material integration, there are good reasons from an emission point of view for falling back on abstract general limits. However, the emission limits of the Technical Instructions for Air Quality Control (TA Luft) should be regulated by a statutory instrument (Immission Control Ordinance – BImSchV). Especially with a view to better implementation of European legislation requirements for integrated environmental protection, the SRU also considers it necessary to move from the bound decision towards a discretionary decision. This could if necessary be supplemented by instructions on exercising discretion and balancing interests. Among other things, such an arrangement would cater better for the prevailing practice in which the bound decision has largely moved closer towards a discretionary decision. In particular, the approach that sensitive environmental media like water can basically be made subject to a state regulatory framework and that there can therefore be no strict

claim to use of the environment can also be applied in a constitutional way to other environmental media such as air and soil. In view of the national air quality targets which are otherwise difficult to

achieve, the authorities could in this way be given discretion to refuse approval if statutory air quality targets were not complied with.

Integrated monitoring

***14.** Nature and the environment form the basis for sustainable development. Their condition is influenced by environmental pressures due to many different factors, the regulation of which is reflected by different and sometimes competing administrative competencies. Political and economic decisions have to be geared to the goal of conserving or restoring good ecosystem status. Environmental monitoring provides the essential basis for identifying problems at an early stage, testing the practical relevance of modelled interactions, evaluating the effectiveness of political measures, and – not least – making integrated environmental protection possible. The necessary monitoring should link use effects, substance pollution and climate change impacts with biodiversity status data, and should describe changes in regional biodiversity.

This calls on the one hand for an integrated monitoring approach which combines the study of exposure to and effects of substances across several environmental media. For representative general information on biodiversity status in the various land-use types, nationwide introduction of ecologi-

cal sample areas would provide the necessary basic information.

The various existing monitoring activities should be coordinated by means of nationwide standards – including for chemicals monitoring – on the basis of the legislative competence in nature conservation law and institutionalised at the Federal Statistical Office. On the whole, this cooperation can improve the flow of information between authorities. It would also be possible to give the public transparent access to monitoring results.

Consistency between enforcement tasks is also a major goal of the European Commission and its scientific bodies. Steps should therefore be taken to ensure that in particular the substance-related information from the REACH Regulation is integrated in the integrated monitoring and that the monitoring results are used in enforcing the REACH Regulation. Especially in the field of chemicals and genetic engineering monitoring, the resulting costs should be borne by the polluters.

Environmental and sustainability strategies

***15.** Even twenty years after the Rio Conference, the aim of systematically aligning development paths in Germany, Europe and the world to stay within environmental limits has – despite partial successes – not been achieved. The contradiction that dangerous ecological trends continue to exist despite many successes in environmental policy shows how great the political challenges are. The SRU therefore considers it necessary to intensify the focus of (environmental) policy activities on protected environmental assets and to initiate far-reaching transformation processes.

Such processes involve massive challenges, including political ones, which as yet have scarcely been reflected in a broad debate within society. Political strategy processes can make an important contribution to conducting a qualified discussion about environmental “guard rails”, further operationalising such guard rails and establishing them as a binding policy.

The EU’s Seventh Environmental Action Programme offers a topical opportunity to formulate and develop medium- and long-term environmen-

tal policy objectives and stake out the environmental policy framework for the next decade.

In Germany too, an overarching environmental programme could help to enhance environmental policy and give a further important impetus to environmental policy. Moreover, the system of objectives in the National Sustainability Strategy is in need of review. The cases of failure to meet targets which are documented in the progress reports on the National Sustainability Strategy give cause to gear the strategy more strongly to achieving environmental targets. This also applies to thematic environmental strategies and to relevant strategies of

other ministries (e.g. transport, agriculture and construction).

The state's responsibility for conserving the natural basis of life can in particular be strengthened by institutional precautions. These include the proposal to incorporate in the German Basic Law an environmental integration clause based on the European model (Art. 11 of the Treaty on the Functioning of the European Union), or to strengthen the position of the Environment Ministry within the Federal Cabinet (e.g. introduction of a suspensive right of objection for the Environment Ministry and a right to initiate activities in other portfolios).

CONCLUSION

***16.** In view of new insights about the transgression of environmental limits which could call into question the current model for prosperity, there is a need for reorientation of environmental policy. A qualified debate about such a reorientation requires a broad public debate as well as robust scientific knowledge about the economic and social

repercussions of such transgressions and about options for how to avoid them. As with climate protection, the SRU considers it possible in principle to reach a sound consensus on the need for action despite widely divergent interests in a pluralistic democracy.

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The German Advisory Council on the Environment (SRU) has been advising the German government since 1972. The Council is made up of seven university professors from a range of different environment-related disciplines. This ensures an encompassing and independent evaluation from a natural scientific and technical as well as from an economic, legal and political science perspective. The Council has currently the following members:

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