Study Commission
on Growth, Well-being and Quality of Life –
Paths to Sustainable Economic Activity and
Social Progress in the Social Market Economy

Berlin, May 2013

Summary of the conclusions and main recommendations of the Study Commission*

* *Appointed by a decision of the Bundestag, adopted on 1 December 2010 (Bundestag printed paper 17/3853); Excerpt from the final report published in Bundestag printed paper 17/13300.*

Contents

Foreword from the Chair

Ladies and gentlemen, interested readers,
According to data from the Federal Statistical Office, women of my age – I was born in 1980 – have a life expectancy of about 76 years.[1] With a bit of luck for all concerned, I shall therefore live to see an increase in the population of this planet to nine billion by about 2050.[2] When I say 'luck', I do not so much mean my personal state of health as the well-being of the human race as a whole, because from a present-day perspective it is by no means certain that the societies on this planet will succeed in reconciling the universal quest for prosperity with a flourishing natural environment in order to enable nine billion people in our world to enjoy a good life.

It shows that this fact has been clearly recognised when a Bundestag Study Commission states, as this Commission did in 2013, that "despite the growing prosperity of the global population, the overall pressure of human activity on the planet must be eased in view of the limits of planetary resources".[3] At the same time, the study shows how difficult such a process of uncoupling economic growth and resource consumption will be, not to mention the even greater challenge of separating our prosperity from the increasing strain being placed on carbon sinks.

With this report we are putting another monumental task on the political agenda. This task will be all the more difficult to perform if our predictions regarding the global megatrends of the 21st century come true, especially the prediction that more and more people on our planet will strive for well-being as it is understood in the industrialised nations, for a form of prosperity based on voracious consumption of resources and energy.

What understanding of well-being will govern people's lives in 2050? We do not know for sure, but we do have historical examples from various parts of the world. If we examine the development of the first industrialised nations, the close correlation between people's material prosperity and their satisfaction with their standard of living is evident. History teaches that pressing daily concerns and needs – food, clothing and shelter – are paramount in most cases. At the same time, in societies with high *per capita* income levels, it is apparent that the link between satisfaction and material prosperity starts to dissolve from a particular income threshold. Well-being in a holistic sense simply means far more to people than ever-increasing material prosperity.

For this reason, the Study Commission proposes a new concept of well-being in its report along with a new way of measuring well-being that goes beyond material prosperity to encompass social and environmental dimensions of well-being too. In this way we not only provide a more accurate reflection of people's understanding of well-being but also challenge the growth paradigm. Purely quantitative economic growth simply does not lead automatically to more material prosperity for everyone, to more social justice or to success in meeting environmental challenges. The proposed 'W³' indicators of well-being shed clearer light on the conflicts of aims that we encounter everywhere. For example, does growth make our society more unequal, or does it actually breed greater equality? Should we pay for the reduction of sovereign debt with high unemployment, or would an active employment policy result in less debt? Will expensive efforts to reduce greenhouse-gas emissions erode our incomes, or will the consequences of climate change damage our growth prospects? These are all questions to which political answers have to be found, both now and in the future. The great advantage of the proposed set of indicators, in fact, is precisely that it clearly illustrates these conflicts of aims. Political players must come up with ways to resolve them. The new measure of well-being will compel policymakers to justify their decisions better than is often the case today. Ideally, it will foster a more pronounced culture of accountability in politics. I am convinced that this would also enhance the reputation of representative democracy.

It also testifies to the responsiveness of representative democracy that this Study Commission on Growth, Well-being and Quality of Life has embraced a debate in which scholars and civil society have been engaged for decades and has continued it in the German Parliament. Yes, the discussion of growth and well-being is by no means new. At least since the publication in 1972, long before I was born, of the study commissioned by the Club of Rome entitled *Limits to Growth*, these crucial questions have been asked and discussed. There are diverse assessments of the impact of this debate. Many are disappointed that the dramatic presentation of the problems was not followed by appropriate changes in the political and social domains but that the problems were actually exacerbated in many respects. Others

[1] This means that life expectancy in Germany has doubled in little more than a hundred years.
[2] See subsection 2.2.1 – Population trends (Project Group 3).
[3] See subsection 7.2.5 – Conclusions of Project Group 3.

emphasise the resounding successes achieved by this debate, which are reflected in the growth of environmental awareness among broad sections of the population, coupled with an increasingly significant environmental orientation among players in civil society and on the political stage.

A similar situation obtains in the Study Commission. Measured against the problems confronting us, the consensual conclusions presented here may appear hesitant. Measured against the difficulty of fulfilling the extremely comprehensive and exacting mandate issued by the Bundestag, the outcome is extremely impressive.

The more specific the questions put to our Commission, the more precise are the answers it has given, and on some points the Commission members, for all their diversity, managed to achieve an astonishingly high degree of consensus, for example in describing the consequences for our economic activity of ensuring that our planet is not pushed beyond its limits, in setting out proposals for a financial system that would encourage stable, sustainable economic activity and in portraying the basic social conditions that are required for sustainable consumption.

At the end of their discussions, there was agreement among the members of the Commission that consensus could even have been achieved over a far wider spectrum of issues if more time had been available for the Commission to deliberate and gradually to move towards and develop common positions.

The work of the Study Commission may thus be likened to reaching the next highest camp on a challenging ascent. More stages will have to follow. Although this Commission has presented a wide range of recommendations, the fact is that there is a long way to go from recognising and describing problems to developing and ultimately implementing robust political approaches in the areas under discussion in this forum. climb.

For the total of 62 members[4] who took part as Members of Parliament or external experts in the work of the Study Commission over more than two years, their participation was a fascinating, strenuous and enlightening process. At the end of this process we can be proud of what we achieved, but we are also determined to help ensure that the essential debate is continued and that the Commission's recommendations are implemented.

I thank everyone who was involved in the preparation of the report and all those who are working with us to keep up the momentum of this debate and to bring it to fruition in political action.

I hope that you will enjoy reading this summary.

Daniela Kolbe
Chair of the Study Commission

[4] Includes both full and substitute members.

1 Summary of the Commission's key recommendations and working methods

By appointing the Study Commission, the Bundestag opted by a large majority to grasp the opportunity to review progress in national and international discussions on the subject of growth, well-being and quality of life and to present it as a basis for political debate with a view to making the legislature aware of scope for future regulation and development. For this reason, we shall begin with a brief description of the circumstances that led to the appointment of the Study Commission.

In October 2009, if not earlier, the existence of serious problems in national budgets throughout the euro area became apparent in the wake of the global financial crisis and the state-funded bank bailouts. By the spring of 2009, industrial production figures for the eurozone had also been revealing a year-on-year slump of more than 20%. Uncertainty about the further development of the economy and the labour market as well as demographic trends and levels of sovereign debt were recognised as challenges that would have to be faced. These issues collided with problems that had already been familiar for quite some time, problems arising from the effects of climate change, the loss of biodiversity, the lack of intergenerational equity and social inequality, both globally and nationally.

The issues arising from these crises and challenges reinforced the original discussion on the promotion of sustainability in the economy and society. It is not only in Germany that this debate is being conducted but in many other industrialised countries too. It is also creating reference points for an approach to the measurement of well-being which is increasingly contesting the role of economic growth, represented by the indicator of gross domestic product (GDP), as the sole basis and measure of well-being, quality of life and social progress. It is generally regarded as incontrovertible that GDP does not adequately reflect the social and environmental aspects of well-being. Moreover, once a certain level of prosperity has been attained, any further increase apparently generates diminishing gains in personal satisfaction. Numerous research studies have found that, for most people, well-being and quality of life do not depend primarily on the size of their income or on GDP but are also heavily dependent on social and environmental factors. Against this backdrop it seems logical to examine which factors and trends should be taken into account if well-being and quality of life are to be analysed and assessed more objectively

Like numerous other industrialised nations, Germany has a distinctly ageing population. The Bundestag had addressed this phenomenon in previous electoral terms, appointing study commissions to examine the impact of demographic change on the economy and employment. The squeeze on public budgets that resulted from the financial crisis drew attention once again to the relative importance of economic growth. The questions in this context are whether stable development is still possible with low growth rates and how it will be possible in future to achieve intergenerational equity in fiscal policy and long-term stabilisation of social security on the basis of European welfare-state models.

A carefully framed regulatory policy may be a way to achieve sustainable development that encompasses economic, social and environmental aspects. The work situation, consumption patterns and lifestyles also influence the prospects of pursuing sustainable economic activity and living for tomorrow.

For its deliberations, the Study Commission established five project groups, which were to focus on the following thematic areas:

- the importance attached to growth in the economy and society,
- development of a holistic indicator of well-being and progress,
- severing the links between growth, resource use and technical progress (decoupling) – possibilities and limits,
- sustainability through regulatory policies, and
- The world of work, consumption patterns and lifestyles.

The results of these deliberations and extensive dissenting opinions will be summarised below.

Importance attached to growth in the economy and society

Economic growth as measured by changes in GDP levels has often been regarded by the media and the general public as the paramount economic indicator and is presented as a key to well-being. At the same time, the assignment of this key role to growth has long been the subject of criticism, which goes back at least as far as the Club of Rome

study of 1972. In the decision appointing the Study Commission, the new body was called upon to evaluate past growth and to examine the question whether and, if so, how the German model of the social market economy can meet present and future environmental, social, demographic and fiscal challenges even if growth rates are low and identify any growth-related barriers to such efforts.

In Project Group 1, whose mandate was to conduct a systematic investigation of the importance attached to growth in the economy and society, intensive discussions led to the emergence of considerable substantive differences, as a result of which the reporting took place from the spring of 2012 in two separate working groups, one comprising the members of the coalition parties and the other the members of the opposition parties. Each of these groups presented a comprehensive draft report to the Study Commission in the autumn of 2012.

The report adopted by the majority provides a detailed exposure of links between growth and the economy and society and discusses the main controversies that surround the subject of growth today. The report makes it clear that growth is not an end in itself but that great importance does attach to it as a means to the achievement of several other ends. Chapter 3 contains observations on the interaction between growth and public budgets, financial markets and employment trends. With regard to the influence of growth on income distribution, the report argues that the income gap has only been widening very moderately since the 1960s and that this is largely due in industrialised countries to the diminishing size of public budgets.

The dissenting opinion of the minority, for its part, illustrates with the aid of extensive theoretical and empirical analyses that economic growth is not an adequate condition for well-being and quality of life. Six subchapters analyse the interaction between growth and the environment, public budgets, financial markets, companies, employment and wealth distribution. The final chapter emphasises that, in spite of moderate growth rates in Germany, there has been a marked increase in inequality of income and wealth since the mid-nineties. According to the minority report, the way to counteract rising welfare expenditure driven by demographic trends is not to cut benefits but to establish a wider funding base and to increase employment in jobs subject to compulsory welfare contributions. Reorientation towards a holistic interpretation of well-being requires a broader framework of social and environmental regulation.

Development of a holistic indicator of well-being and progress

Besides the economic and social importance of a growing economy, the Study Commission also discussed issues relating to the measurement of well-being as the second of its priority topics. The starting point for the debate on a new way to measure well-being was the criticism that had been simmering for years in academic and political circles that GDP, which could never be a proper gauge of well-being and quality of life, was nevertheless frequently used for that purpose. The weaknesses of GDP as a measure of well-being are obvious. Goods and services that have no market price, such as voluntary work or ‘household output’ in the form of child-rearing or care in the home, are not factored into GDP, while environmental pollution and the depletion of non-renewable resources do not diminish GDP and may even increase it.

According to the decision appointing the Study Commission, Project Group 2, entrusted with the task of drafting a new indicator, was to “examine how factors influencing quality of life and social progress can be given due consideration and fed into a common indicator” with a view to “creating a suitable basis for the assessment of political decisions against economic, environmental and social criteria”. The task was to develop a measure of well-being that would be equally relevant and meaningful to politicians, researchers and the public as well as indicating where Germany stood in relation to the other countries of the world.

In the first part of its work, Project Group 2 dealt in great detail with methods of measuring well-being in order to gather comprehensive information that would enable it to systematise, classify and assess various measurement approaches in order to derive ideas for the creation of its own model. The project group considered the entire range of methods for the measurement of well-being, beginning with long-established indicators such as the United Nations’ Human Development Index (HDI), moving on to the German National Welfare Index and finally examining current initiatives such as those that have been launched in countries such as Australia, the United States and Britain.

In order to obtain additional knowledge for the construction of a model indicator of well-being, Project Group 2 commissioned a full-length and a summary expert report. The full-length report examined the extent to which today’s political and administrative decision-makers are familiar with the common prevalent indicators of well-

being, how they are used, what barriers exist to the use and interpretation of these indicators and what improvements are deemed desirable. The summary expert report examined how to construct an indicator model in such a way that the media would eagerly embrace it and be able to portray it well.

In the second part of its work, Project Group 2 developed the set of indicators for the measurement of well-being. In the context of the changes and uncertainty affecting the links between growth, well-being and quality of life, the task was to identify essential dimensions of well-being and to find matching indicators that would give people a clear panoramic picture of the diverse aspects of well-being in today's world and of their development.

The quest for a good measure of well-being posed numerous challenges. Given the diverse value judgements, ideologies and interests of individuals, the concept of a 'fulfilled life' is naturally defined in an extremely wide variety of ways. Any selection of factors is prescriptive and therefore open to discussion. In these circumstances, the main concern of the Members of Parliament and experts was to establish what people, including future generations, need as individuals to enjoy a good and successful life. There was a great deal of overarching political and moral unanimity on this point, but, when it came to deciding which of these factors should ultimately be included in the indicator of well-being, a conflict of aims surfaced, a conflict between the desire to ensure that the complexity of the phenomena of well-being and quality of life was fully reflected in appropriate indicators and the concern to select as few indicators as possible so that the set of well-being indicators would remain communicable to a wider audience. Ultimately, in fact, some of the mooted ideas proved to be unworkable in practice for lack of statistical data. The non-market work of households, for example, which undoubtedly contributes to well-being, has not been regularly measured in a way that would permit international comparison. Similarly, there is no authoritative internationally available data on biodiversity.

After working on this task for two years, Project Group 2 presented an 'enhanced GDP', which comprises ten key indicators and, besides the material dimensions of well-being, also takes account of the social and inclusion dimension and of environmental factors. The message to the Bundestag encapsulated in this set of indicators is that other factors besides material prosperity play an equal part in the creation of well-being. The preservation of freedom and democracy, social inclusion resulting from good educational qualifications and employment for the maximum number of people and good health will all have a role to play in future when society assesses its own state of well-being. At the same time, the new wider measure will show whether this well-being is sustainable, because it also covers environmental quality and national debt.

The ten indicators will generate impetus for the public, high-profile discussion, based on a broad and solid body of information, of improvements or deteriorations in specific aspects of well-being. Conflicts of aims will be more clearly highlighted in future, which will fuel the debate within society. Comparisons with other countries will also become more meaningful, for observers will see fast-growing economies such as those of China or India in a different light if growth figures are accompanied by indicators of environmental quality, social inclusion or civil liberties. The new measure of well-being will raise new questions too. For example, the significantly lower life expectancy in the United States than in the rest of the industrialised world will be highlighted whenever the well-being of Americans is compared with that of Germans. To sum up the core message of the Study Commission, more goods and more material prosperity is not, or is no longer, the be-all and end-all.

All of the parliamentary groups agreed on the need for social and environmental indicators in addition to economic indicators. There were, however, differences as to how this should be achieved in practice.

The group of The Left Party argues in its dissenting opinion for a trio of quality-of-life indicators. This trio would comprise average gross pay as in indicator of material well-being, the division of assets among the social classes as a gauge of social well-being and inclusion and the ecological footprint to reflect the use and abuse of the biosphere. The Left Party group also advocates the creation of a 'Council on Social and Environmental Well-being', which would report annually on the quality of life in Germany and the world at large.

In its dissenting report, the parliamentary group of Alliance 90/The Greens proposes a set of indicators for political communication in the form of a 'well-being compass' covering four dimensions – environmental, socio-economic, social and economic. Each dimension is underpinned by one indicator, namely the ecological footprint, expressed as a percentage of available biocapacity (environmental dimension), an 80-20 ratio of income distribution (socio-economic dimension), life satisfaction (social dimension) and *per capita* GDP (economic dimension). As a means of

political control, the group of Alliance 90/The Greens proposes a reinforcement of the indicators set out in the National Sustainability Strategy.

One of the expert members, Professor Meinhard Miegel, delivered a dissenting opinion explaining why he considers the set of indicators developed by the Commission to be difficult to communicate and not very suitable for everyday use.

Severing the links between growth, resource use and technical progress – possibilities and limits

In the first chapters of its report, Project Group 3 dealt with the problems involved in breaking the link between economic activity and resource consumption ('decoupling'). To this end, it examined both the current body of research on the state of the environment and on the availability of renewable and non-renewable resources and the relevant global megatrends. The decisive outcome of this initial description of the problem was the realisation that the ecological limits on the resilience of the global environment determine the bounds of our action. In some areas, such as the emission of greenhouse gases, the loss of biodiversity and nitrogen-cycle overload, these limits are already being exceeded today. In many cases, then, the aim must not only be to uncouple economic growth from the use of environmental resources but to achieve an absolute reduction in the use of those resources.

On the basis of this aim, Project Group 3 examined key decoupling challenges. Particular attention was focused in this context on the phenomenon known as the rebound effect, whereby efficiency gains often fail to deliver the expected reduction in consumption but are cancelled out by an increased propensity to consume. A closely related issue is the potential for offloading, which occurs when measures to alleviate environmental problems result in the creation of new problems or the exacerbation of existing problems in other sectors or, in the case of geographical offloading, in other countries. Structural, psychological and cultural challenges to decoupling processes surface in various forms. While the examination of response options revealed a great deal of untapped potential for a mix of technological, institutional and social innovations that could reduce the consumption of environmental resources, it also became evident that many major players have restricted scope for action. Several of the analysed environmental limits, for example, are global in nature, which narrows the margin for national action, a situation known as the 'tragedy of the commons'.

The aspect of the environmental challenge was also described by the project group in terms of the concept of an Anthropocene, the age of human impact on Earth. The profundity and the global scale of interventions in the natural world make radical changes essential. These may be seen on the one hand as a new phase of adaptation of the economic and social system to global changes, reflected in ecological and social crises. On the other hand, it may be taken as signs of an impending break in continuity, comparable with the upheavals of the Industrial Revolution. The opposition groups have set out their conclusions in a dissenting opinion on the socio-ecological transformation (see the dissenting opinion on subsection D 7.1.3 of the report).

Project Group 3 devised benchmarks for German and European action in a pioneering role in the political implementation of decoupling. It followed from the analysis briefly described above that this pioneering role would have to be played within a global framework in view of the global problems, that there would have to be more recourse to absolute limits – caps – on environmental damage and resource use and that a balanced portfolio approach would have to be developed. These principles of a German and European action strategy are briefly summarised in the next chapter under *Recommendations for action*. Additional material on this point is provided by a dissenting opinion of the opposition, reproduced in section D 7.2 of the report.

Sustainability through regulatory policies

Project Group 4 dealt with the question of how regulatory policies can help to make sustainable economic activity possible. What sort of legal system, tax structure and levies are needed, for example, and how should competition law be framed? The project group began by shedding light on the various dimensions of today's regulatory policies. It then discussed specific instruments by way of illustration under four subheadings – regulation of financial markets, viable financial policies, sustainable economic activity, exemplified by the chemical industry, and climate policy – and formulated recommendations for action (for more details, see the next chapter – *Indicator set and recommendations for action*.

The majority of Project Group 4 took the view that the social market economy with its constitutive and regulatory principles had essentially proved its worth and had continually demonstrated its adaptability. In order to achieve sustainability in new global circumstances, there was no need for radical change but only for pragmatic adjustments, particularly the regulation of common global assets. The opposition members, on the other hand, took the view that the impending challenges required a realignment of the social market economy, a social and environmental transformation (see the dissenting opinion of the opposition groups on chapter E 1 of the full report).

In the opinion of all members of Project Group 4, the achievement of sustainable financial markets entails remedying the existing regulation deficits and construction defects in the architecture of the financial system to make it efficient, crisis-proof and stable. The recent national and European regulatory initiatives in this sector are explicitly welcomed. In the view of all members of Project Group 4, the paramount objective must henceforth be to ensure even closer adherence to the following principles:
1. the liability principle; the keys to the application of this principle are higher capital requirements for financial institutions, remuneration structures that heighten risk awareness and comparable regulation of the shadow banking system;
2. continuous improvement of transparency; this entails, for example, rules governing complex, opaque and dangerous financial products and extending to prohibition;
3. consistency in supervision and insolvency management; this includes both strengthened decision-making powers for supervisory authorities and effective crisis-intervention and resolution regimes for banks (for more on this range of issues, see also the dissenting opinions of the opposition groups in subsections E 2.3.2, E 2.3.4 and E 2.3.5 of the full report).

Since indebtedness impacts on the long-term development of our national economy, the aim of a sustainable financial policy, in the unanimous view of the Project Group 4 members, is balanced budgets throughout the economic cycle, accompanied by a low level of debt and the funding of major public tasks. In accordance with the common perception of the scope of public tasks and of the required quality of delivery, for example in the education system, funding should be made available by adjusting expenditure and, where appropriate, abolishing subsidies. A need for action is identified, on the one hand, for the purpose of lowering explicit sovereign debt, which is currently running at about 80%. On the other hand, efforts must be made to tackle the implicit debt, the demographically driven viability gap that currently amounts to 3.1% of GDP. A large majority within Project Group 4 believes that the Stability and Growth Pact and the debt cap are suitable means of reducing explicit debt (on this point, see the dissenting opinion of The Left Party on section E 3.4 in the full report). So that implicit debt can also be tackled in future, the majority of members of the project group attach prime importance to measures for socially and environmentally acceptable growth the right instruments for the reduction, whereas the opposition members regard an improvement on the revenue side of public budgets and welfare schemes as the foremost priority (see the dissenting opinion of the opposition groups on sections E 3.5 and E 3.6 in the full report).

What sustainability through regulatory policies means in the industrial sector may be illustrated, in the unanimous opinion of Project Group 4, by reference to the chemical industry, because the complete value-added chain can be observed there. A mix of regulatory provisions, thresholds and ceilings, fiscal charges and self-imposed obligations has proved successful in the German chemical industry and has even improved its competitive position. All members of Project Group 4 concur in the desire to follow this lead in the future with a cohesive mix of instruments, the objectives being: (1) to lower the absolute level of resource input, (2) to internalise external costs as a matter of principle and (3) to encourage thinking in terms of cycles, thereby reducing end-of-pipe measures.

By investigating the basic regulatory conditions in which Germany and Europe could ‘unilaterally’ set an example in the reduction of greenhouse gases as part of a pioneering role, the members of Project Group 4 followed on from the work of Project Group 3. Project Group 4 examined two different approaches to the effective and efficient reduction of CO_2: (1) measures in the framework of a cap-based system, and (2) measures for the promotion of specific technologies. Since there is no discernible coherent regulatory framework for the numerous political instruments applied to date, the majority of the members of Project Group 4 referred to the need to focus on the capping approach as part of a systematic Europeanisation of climate policy while also identifying initial areas for action. The opposition members, on the other hand, also stressed the importance of a multi-level strategy and the important complementary character of the instruments (see the dissenting opinion of the opposition groups on chapter E 5 in the full report).

The world of work, consumption patterns and lifestyles

Project Group 5 had a wide remit to cover. Given the shortage of time, it could only achieve its aims by focusing on the core topics specified in the appointment decision, namely sustainable lifestyles, the changing world of work and sustainable consumption.

The members began by examining approaches and forms of systematisation that would enable the group to describe lifestyles and their relationship with sustainability. It emerged clearly from these deliberations that it is neither possible nor appropriate to speak at the present time of a sustainable lifestyle. One of the challenges lies in the discrepancy between environmentally aware attitudes and simultaneous largely unsustainable behaviour patterns, which is described as an awareness-behaviour gap. Ways in which a sustainable lifestyle can nevertheless be made possible or easier were discussed by reference to the players in civil society, the media, business and politics. The message that emerged was that the diversity of individual lifestyles in our society must be reflected in a corresponding range of policies and initiatives for the promotion of sustainability.

Under the heading of viable employment, the project group examined the changes in the world of work and in forms of employment. It began this examination by analysing general trends, such as globalisation and demographic changes and the changing world of work. The 'organisational revolution', the 'subjectivisation of work' and the accompanying flexibilisation and removal of demarcation lines came in for more detailed examination. Another focal point was the change in forms of employment, in the context of which the normal form of employment, atypical jobs and the issue of gender equity were discussed. Cross-party consensus proved impossible to achieve on the nature of viable employment and the identification of appropriate political measures. By general agreement the various ideas were outlined in the form of three idealised models in order to open them to public debate. The three models – expansion of paid employment, development of paid employment on the basis of good jobs and, in individual instances, shorter working hours and gearing the entire employment structure to future needs – are indicative of the various political positions and action strategies. The idealised models served as a vehicle for the presentation of the diverse points of view as well as highlighting connecting lines and cross-references to macro- and microeconomic design options.

The third priority area addressed by the project group was the field of sustainable consumption. The project group proceeded on the assumption that conscious consumption can promote sustainability, albeit within limits. Project Group 5 set itself the task of shedding light on the scope and limitations of such an approach, describing the obstacles and presenting options for supporting sustainable consumption.

If the opportunities offered by sustainable consumption are to be grasped, Project Group 5 sees two approaches that should be jointly pursued:

- Firstly, the necessary basic conditions for sustainable consumption should be created.
- Secondly, consumers should receive assistance that will enable them to take the resulting opportunities for sustainable consumption. They should be enabled to question their consumption habits, and it should be made easier for them to adopt and maintain a sustainable lifestyle.

To this end, the public debate on sustainable consumption and education for sustainable development should be reinforced. What is needed is a learning process in which ways of life and consumption patterns are questioned, divergent lifestyles are respected and, at the same time, lifestyles are adopted which are compatible with the principles of social, environmental and economic sustainability. Through the accreditation of quality marks and certificates and better corporate communication on sustainability, information on products and processes should be made more transparent, reliable and credible. Companies, moreover, by conducting life-cycle analyses, taking more shared responsibility for products and optimising their product development, should be able to offer more sustainable products. The state, by establishing the right conditions and providing essential infrastructure, should create incentives for sustainable consumption and, as a major consumer in its own right, should consistently apply sustainability criteria in its procurement activities. The subject of eco-sufficiency was analysed in depth in the chapter of the report consumption and sustainability. The report contains a dissenting opinion of the FDP group on that subject.

2 Indicator set and recommendations for action

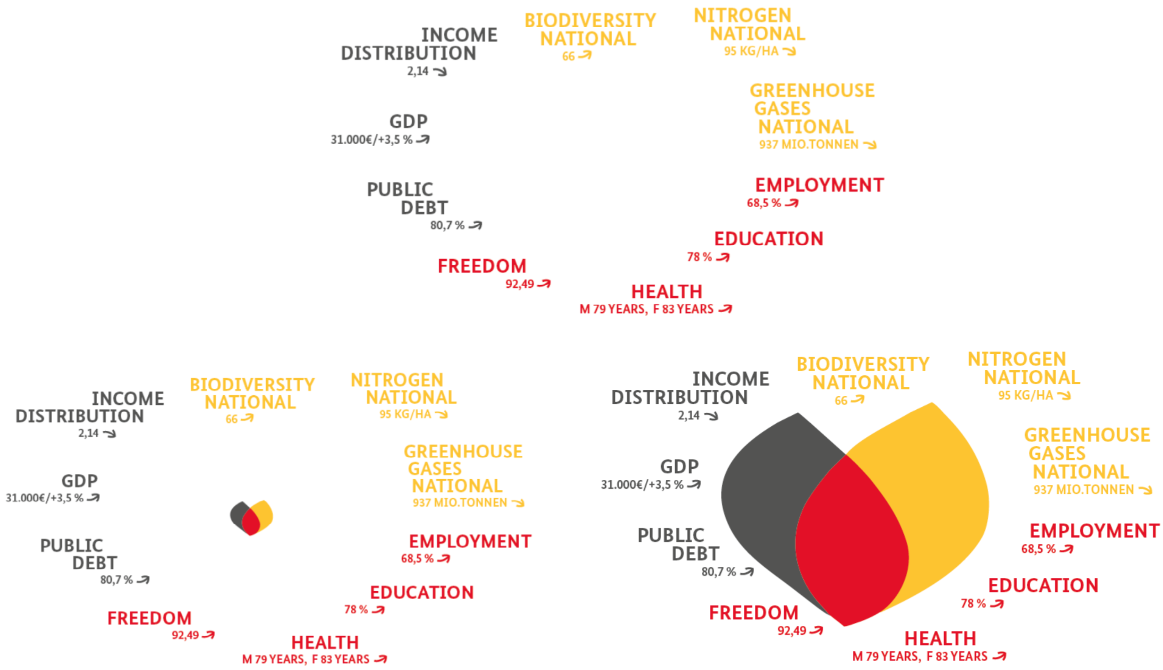
2.1 Indicator set

Proceeding on the understanding that well-being is more than material prosperity, the Study Commission recommends that the Bundestag establish a new way of measuring well-being and progress in the form of the 'W³ indicators'.[5]

W³ Indicators 2013
www.w3-wohlstandsindikatoren.de

The W³ indicators, comprising three dimensions of well-being and ten key variables, are intended to provide information in future on the state of well-being and quality of life in Germany. Besides the dimension of material well-being, their purpose is to draw attention to its social, inclusiveness and environmental dimensions.

Material well-being and its sustainability are mirrored by *per capita* GDP, income distribution and sovereign debt. The social and inclusion dimension is measured by the indicators of employment, education, health and freedom, and the environmental aspect is portrayed by the variables of greenhouse gases, the nitrogen balance and biodiversity. Detailed information on the indicators is contained in the attached Annex 1 and in Part 3, sections 3.2 and 3.4, of the full report. Below are three options for the presentation of the W³ indicators which may serve as the basis for further design work.[6]



[5] This logo, along with the name and presentation of the set of indicators, was produced by ergo Kommunikation at the request of the Study Commission.
[6] The displayed indicator values and the direction of the trend arrows are for illustrative purposes only.

The ten identified key indicators are the main building blocks of the new measurement of well-being. In addition, there are background indicators, the so-called warning lights. These indicators stand for additional important information in the relevant areas of well-being. They supplement the key indicators but appear and are analysed only if they signal an adverse trend or cross particular limits. In this way, attention will be focused on unwanted developments which the key indicators do not adequately reflect or which are liable to reverse favourable trends in the key indicators.

Warning lights are assigned to the following groups of indicators: in the area of material well-being, there are warning lights for net investment, the distribution of wealth and the financial sustainability of the private sector; in the area of social well-being and inclusion, there are underemployment, further training and healthy life years, and the environmental warning lights relate to global emissions of greenhouse gases, the global nitrogen balance and global biodiversity.

The material well-being of a country is determined by both market output and non-market output, such as child-rearing, care in the home and voluntary work – a major source of added value in national economies that has never received much attention. However, since statistical data on non-market output appear only once every ten years, the Study Commission recommends that the Federal Statistical Office conduct the time-use survey at five-yearly intervals in order to measure non-market output. Whenever new figures are available, non-marketed output should be displayed in addition to the W³ indicators.

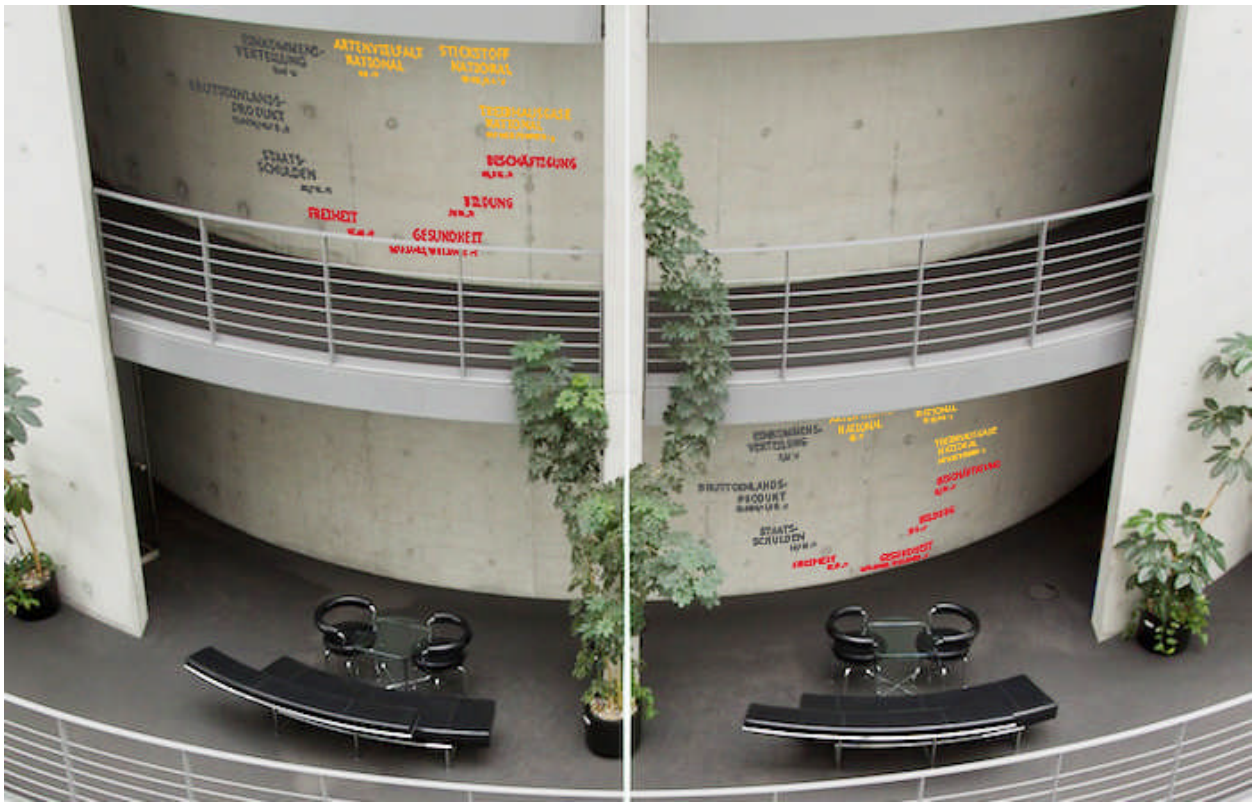
As for all of the other indicators, the Study Commission recommends that they should be calculated on a regular basis – once a year, for example. In future, at equally regular intervals, the Federal Government should deliver its opinion, drafted on an interdepartmental basis, on the indicators. In the preparation of this government statement, relevant councils of experts could analyse the W³ indicators, comment on them and, if necessary, expand them constructively. In any event, the German Council of Economic Experts and the German Advisory Council on the Environment should be asked to perform this function. Whether and to what extent other groups of experts and advisory bodies can and should contribute to this public discussion should be examined at the start of the forthcoming legislative term.

The W³ indicators should also become known to the general public and stimulate public debate. Efforts to achieve this goal should include a Web-based presentation of the set of indicators, preferably in an interactive format. Besides an eye-catching presentation of the W³ indicators, a new web page should provide access to background information. The page could be installed on the website of the Federal Statistical Office, for example, which would assume responsibility for administering and processing the data. As on the website of the OECD Better Life Index, it should be possible for users to obtain an aggregated index from the individual indicators on the W³ page, weighting the various indicators in accordance with their own preferences.

In addition, the Study Commission recommends that the W³ indicators should feature as an installation in one of the central Bundestag buildings. The Study Commission asks the Council of Elders to invite proposals for an appropriate installation and to decide on the execution of the project. Consideration should be given to the question whether a travelling exhibition might be beneficial.

The next page contains visualisations of possible installations displaying the W³ indicators in the premises of the Bundestag. The selected examples show a projection on exposed concrete and a display stand with interactive functions.

In developing the new measure of well-being, the Study Commission identified a need for action in numerous areas of statistical data. There is considerable room for improvement, for example, in the measurement of income and wealth distribution. It also seems desirable to supplement the reporting of education statistics by recording actual educational attainment levels. In the environmental domain there is a need, on the one hand, for the collection of comparable data, at least on an EU scale, for the bird index or – better still – the introduction of a more comprehensively designed indicator of biodiversity. On the other hand, there is much to be done to increase the availability of global nitrogen-balance data. In general terms, efforts should be made to achieve greater frequency of data collection and publication.


ARTENVIELFALT NATIONAL
STICKSTOFF NATIONAL
BESCHÄFTIGUNG
BILDUNG
FREIHEIT
GESUNDHEIT


EINKOMMENS-VERTEILUNG
ARTENVIELFALT NATIONAL
STICKSTOFF NATIONAL
BRUTTOINLANDS-PRODUKT
TREIBHAUSGASE NATIONAL
BESCHÄFTIGUNG
STAATS-SCHULDEN
BILDUNG
FREIHEIT
GESUNDHEIT

2.2 Decoupling – possibilities and limits

Project Group 3 focused primarily on analytical tasks. It also formulated a set of principles for a German and European action strategy. One of the major guiding principles is that Germany and Europe should play a pioneering role. The essential feature of this approach is a quest, based on awareness of the restricted scope for national action, for the best way to promote international cooperation. Such cooperation is rendered essential by the increasingly global character of many environmental problems. The pioneering role is regarded not only as globally effective but as an ethical imperative.

Project Group 3 places particular emphasis on three ways of shaping this pioneering role: (1) Innovations of various types can help to reduce the cost of decoupling, not only for Europe but also for other parts of the world. (2) Transfers and penalties such as supplementary charges can induce other countries to accede to international conventions. (3) By setting standards or establishing a reputation, for instance through the example of its own decoupling measures, one country can put pressure on others. Since the impact of a pioneering strategy increases with the number of participating partners, the aim is to achieve a decoupling strategy with a strong European base.

In view of the diversity of challenges and the various ways in which a pioneering strategy could be shaped, a differentiated portfolio approach is recommended. This approach would achieve a balanced distribution of resources to various environmental challenges and instruments. A German and European model role, whether on climate change or other environmental issues, would be part of such a portfolio. Building on the work of Project Group 3, Project Group 4 has developed recommendations concerning the nature of this role.

Project Group 3 was unable to reach a common accord on specific recommendations for action. For this reason the opposition delivered a dissenting opinion containing an extensive catalogue of measures, and other opinions were presented by experts and Members of Parliament (see the dissenting opinion on section 7.2).

In view of the highly analytical nature of the work performed by Project Group 3, the unresolved research issues raised by the group are tantamount to recommendations for action too. For example, it identified a continuing need for better statistical data and more information on systems and potential global development scenarios. Strategies for dealing with the rebound effect and the shifting of problems require further development, as the real objective of global emission caps is often unattainable. Finally, the scope for decoupling by means of innovations could not be explored so comprehensively for other environmental issues as it could for climate change. In addition, the dissenting opinion on section D 7.3 contains supplementary opposition proposals relating to the research requirement.

2.3 Sustainability through regulatory policies

The recommendations made in the part of the report devoted to regulation relate to four target areas:

2.3.1 Regulation of financial markets:

More stringent capital requirements

- A far higher equity-to-leverage ratio should be introduced quickly – as early as 2015 if possible. The ratio should be used as the key measure of capital adequacy, because it is less susceptible to manipulation than the capital to risk-weighted assets ratio (CRAR). The obligation to maintain risk-weighted capital adequacy as an additional instrument is intended to help avoid excessive risk-taking. This, however, is unlikely to be achieved unless the obligation is likewise made far more stringent than hitherto. A higher capital requirement not only lends more weight to the liability principle that is fundamental to any market economy; it also helps to ensure that the amount of emergency adjustment funding needed in the event of a crisis will be lower than in the past, which will ease the downward pressure from fire sales and balance-sheet contractions that has exacerbated previous crises.

- Capital requirements should contain a special component for banks, whereby banks which are systemically important or which have unusually high volumes of maturity transformation, that is to say funds borrowed on short time-frames but lent on long time-frames, must hold additional capital.

Better anticyclical and macroprudential instruments

- Because of the disadvantages of risk-weighted capital ratios, they should be supplemented by a new anticyclical leverage ratio.

- In addition, supervisory authorities should be empowered to prescribe amendments to the maximum permissible loan-to-value ratios for loans. A reduction of the loan-to-value ratio would compel borrowers to put down more capital. A lower loan-to-value limit for mortgages, for example, could dampen a housing price boom.

- Similarly, supervisory authorities could impose loan-to-deposit ratios in particular circumstances, thereby limiting the ratio of loans to traditional deposits.

- Lastly, consideration should be given to the potential expediency of an anticyclical variation of the bank levy, such as a higher rate in the event of excessive lending.

A dissenting opinion delivered by the opposition groups identifies further anticyclical and macroprudential measures (see the dissenting opinion on subsection E 2.3.2 in the full report).

Effective regulation of the shadow banking system

- Banks should fully incorporate the activities of special-purpose vehicles (SPVs) associated with them into their financial reporting system.

- Supervisory authorities should be given a mandate to ban off-balance-sheet SPVs and activities altogether in particular cases.

- In order to limit the repercussions of the shadow banking system on the mainstream banking system, the exposure of banks to other parts of the shadow banking system, such as hedge funds, should be tightly restricted.

- In order to increase the stability of the shadow banking system itself, the rules governing the leverage ratio and maturity transformation should be tightened for that system too; any divergences from the limits that apply to mainstream banks should be properly justified.

- Lastly, regulation havens should be closed down by means of bilateral and multilateral agreements in order to prevent avoidance manoeuvres.

Increased transparency and oversight

- Since regulation is bound to give rise to financial innovations designed to circumvent it, regular reviews of the rules are not the only important countermeasure that must be taken. The regulatory authorities must also have the power to demand additional information from market participants whenever potential risks are identified.

- There is also a need to consider whether certain potentially dangerous instruments should be banned or at least made distinctly less attractive. Multiple securitisations, for example, make no recognisable economic sense, whereas the risk of opaque securitisation cascades is patently recognisable. For this reason, resecuritisations should either be made far more difficult by means of considerably higher retention requirements or subjected to outright prohibition. Whether and to what extent credit derivatives, particularly on sovereign bonds, possess a similarly high risk potential and should also be prohibited or made more difficult to buy and sell is a source of controversy.

Two dissenting opinions formulated by the opposition groups identify further measures to increase transparency and oversight (see the dissenting opinions on subsection E 2.3.4 in the full report).

Regulation of remuneration systems

- Total remuneration and its various components should be subject to monetary ceilings, to be laid down – annually, if appropriate – by the supervisory board.

- The variable element of remuneration, moreover, should not be based primarily on returns on equity, because this creates an incentive to engage in unsustainable short-term transactions that can unduly increase the business risk.

- In addition, the following information should be shown for each board member in the remuneration report: (1) emoluments paid in the reporting year, including fringe benefits; (2) in the case of variable elements of remuneration, an accompanying indication of the maximum and minimum awardable amounts; (3) the amount accruing in and/or for the reporting year from fixed remuneration, short-term variable remuneration and long-term variable remuneration, broken down by the various reference years; (4) in the cases of multiannual variable remuneration and pensions, expenditure for the reporting year.

Further proposed measures for the regulation of remuneration systems are contained in a dissenting opinion delivered by the opposition groups (see the dissenting opinion on subsection E 2.3.5 in the full report).

An improved crisis-intervention mechanism

- A functioning crisis intervention and insolvency mechanism for banks must be created. It should be the medium through which the early-intervention rights of supervisory authorities are exercised. A good benchmark for this mechanism is the three-stage approach devised by the German Council of Economic Experts.

Effective European banking supervision

- A European supervisory structure for the banking sector should be equipped with genuine enforcement powers, at least with regard to banks with international operations. This applies especially to the procedure to be followed in the event of banks that operate in several Member States facing trouble or insolvency. An EU-wide resolution regime is needed for this eventuality, or at least a regime for the eurozone. It should be accompanied by a rule whereby potential burdens on public budgets arising from bank bailouts are shared among the Member States on the basis of investor liability.

Curbing ‘regulatory capture’

- To avoid ‘regulatory capture’, the financial and human capacities of the regulatory authorities and their independence should be reinforced.

- A lack of transparency should be remedied by means of clear transparency rules and access for the various stakeholders to the regulation process as well as external scrutiny by political bodies, the judiciary, the media and independent groups of experts and internal oversight in the form of liability rules, rotation to avoid the development of close ties between regulatory staff and regulated bodies, the definition of standards, etc.

The feasibility of a separated banking system

- As a consequence of the latest financial crisis some members of Project Group 4 call for the establishment of a separated banking system, in other words institutional separation of the commercial and investment functions of banks. Other members believe that the universal banking system in Germany ought to be preserved, because separating the two functions would be difficult to implement yet does not appear to be a decisive factor in achieving the goal of stable financial markets. Should the general political will favour separation, however, the project group unanimously recommended that it be effected on the basis of a holding solution, with banking businesses split into three functional divisions.

Regulation of credit-rating agencies and the possibility of creating a European rating agency

- If the rules on capital requirements were focused primarily on unweighted assets (see the recommendation on capital-adequacy provisions), the relevance of credit ratings would already be diminished. In addition, banks should be encouraged to develop their own rating procedures so as to further reduce their dependence on external ratings.

- Some members of the project group propose the creation of an independent European non-profit credit-rating agency, which would generate more competition in the international ratings market and provide for assessment procedures that were not distorted by conflicts of interest. The majority of the PG4 members would welcome keener private-sector competition in the international ratings market. They were sceptical, however, about the establishment of a publicly supported or indeed public-sector credit-rating agency. In principle they do not regard it as a matter for the state to assess the quality of marketed financial products.

2.3.2 Viable financial policy

Measures focusing on explicit debt

- The debt cap enshrined in the German Constitution and the Fiscal Compact are considered to be useful means of restricting sovereign debt and must be observed.

- The scope for incurring debt outwith core budgets should be further restricted.

- In order to limit the scope for interpretation in the event of major economic crises or natural disasters, the majority from the governing coalition proposes that a hard and fast criterion could be defined to determine the point at which a crisis or disaster sets in. The SPD and Alliance 90/The Greens believe that the wording of the Constitution is adequate in this respect.

- In addition to the debt cap, the European rules for sound financial policies set out in the reformed Stability and Growth Pact and the Fiscal Compact, which is also applicable to local authorities and social-insurance providers, were favourably assessed in principle, even though it is still too early to evaluate the actual contribution of these instruments to a sound financial policy in Germany. Germany should endeavour – and it is assumed to be doing so – to perform an exemplary function in Europe in the field of financial policy, and there is also a need for further enhanced coordination of fiscal policies in the European Union.

In a dissenting opinion, the parliamentary group of The Left Party enumerated disadvantages of the present legal framework (see the dissenting opinion on section E 3.4 in the full report).

Measures focusing on implicit debt

- Against a backdrop of rising life expectancy and a demographically driven decline in employment, it is absolutely essential to abide by the decision taken by the Grand Coalition in 2007 to increase the statutory retirement age gradually to 67. While the German Council of Economic Experts, in one of its expert opinions dating from 2011, considered another gradual increase in the retirement age to bring it up to 69 by 2060 and some of the expert members of the Study Commission examine this option too, the parliamentary members regard raising the retirement age gradually to 67 in line with the government decision, together with continued systematic budgetary consolidation and a growth-friendly economic policy, to be an adequate response to the need to close the viability gap. The coalition and opposition groups come out against raising the retirement age to 69. The Left Party group also opposes the increase to 67; the SPD subjects its approval of retirement at 67 to certain conditions (see the dissenting opinions on sections E 3.1 and E 3.5 in the full report.

- The Commission was also unanimous in the view that support for the immigration of skilled labour, measures targeting the work-life balance in order to increase the female employment rate, higher employment rates among the over-55s and a further reduction of unemployment are contributing to a sustained improvement in the budgetary situation.

- It is absolutely essential to make use of any budgetary latitude that might materialise in the next few years to bring down the accumulated debt rapidly and so create room for manoeuvre in dealing with the future burdens of demographic change, since it may be assumed that not even the measures indicated above will be sufficient to close the viability gap.

- In addition, a viable financial policy should promote environmentally and socially acceptable growth. The state, for example, should encourage investment in education, research and development and reinforce the productive market forces. In this way, the future burdens arising from a shrinking and ageing population can be more easily distributed.

In a dissenting opinion, the opposition groups make the case for reform of the present financial policy so as to provide sufficient funding for more investments in education, infrastructure and the welfare schemes. Their proposals to this end include an increase in the top rate of income tax and a broader funding basis for social insurance. For a comprehensive insight into the state of public finances, they said, it is also necessary to examine the situation with regard to private assets (see the dissenting opinion on sections E 3.5 and E 3.6 in the full report).

2.3.3 Sustainable economic activity as exemplified by the chemical industry

Sustainable supply of raw materials

The following options should be examined in this context:

- promoting optimum use of biomass, particularly from waste products, as a substitute for fossil fuels;

- achieving complete use and conversion of biomass conversion without any waste by ensuring that the input of organic resources is either kept continuously in closed technical cycles or is returned into biological cycles as nutrients;

- recovering and using CO_2 as a raw material for organic chemistry through micro-organisms (smoke-gas separation) or through organic NHC catalysts posing no risk to health or the environment with the aid of surplus energy from renewable sources, for example in polyurethane and methane or in benzoic and formic acid;

- providing state support for integrated approaches to the biotechnological pre-treatment of biomass for the production of bio-based platform chemicals (biorefineries) and to the sequential use of biomass, first as material and subsequently for energy production, because in this way both the material and the energy potential of biomass can be utilised;

- pursuing the approach of internalising external costs in connection with the use of biomass, as in other areas, particularly as a means of promoting the use of residues and waste materials, since these are not in competition with food crops;

- creating binding sustainability standards for biomass production, which must be subject to the following order of priority for the use of biomass: (1) food production, (2) use as materials, and (3) use as an energy source.

Some members of the project group also want the following options to be examined, while others take the view that these options will not achieve the desired aims and may even be counterproductive in some cases:

- introducing a resource-efficiency profile for chemicals, so that their assessed levels of resource efficiency can be communicated; this profile can influence procurement decisions in the supply chain and be introduced into the reporting framework on sustainable economic activity;

- introducing a royalty on extracted and imported raw materials, which would affect all non-renewable primary materials used in the chemical industry, in other words mineral oil, natural gas, coal, phosphorus, etc., subject to a simultaneous review of existing potentially concurrent levies.

Sustainable production and processing

In order to increase resource efficiency, the following options in particular should be examined:

- performing analyses and observations with a view to preventing carbon leakage – the displacement of CO_2 emissions resulting from the transfer of production operations to other countries – by means of more stringent framework legislation;

- promoting the location of chemical companies in chemistry parks in order to encourage cooperation between companies;

- initiating energy and resource-efficiency networks in the chemical industry; this is another area in which chemistry parks could play a special role; in all programmes, standards and legal provisions designed to increase efficiency, rebound effects should be taken into account from the outset;

- focusing research and research support on areas in which major innovative advances in resource efficiency can be expected, such as (1) industrial ('white') biotechnology, (2) solar reaction energy, that is to say direct harnessing of luminous energy as a reaction accelerator on the model of photosynthesis or else in the form of photocatalysis; (3) optimisation of processes for separating mixtures of substances; (4) more efficient synthesis processes with improved catalysts, since these will accelerate synthesis and, in some cases, make it possible in the first place;

- mainstreaming risk research or risk assessment, as appropriate, into government-supported research programmes;

- examining regulatory options with a view to prescribing biodegradability as a key product feature of plastics in order to tackle the problem of littering, particularly in the oceans, at its roots and, by virtue of the associated need to modify the chemical structure of plastics, create the conditions for chemicals recycling.

Some members of the Study Commission also want the following options to be examined, while others take the view that these options will not achieve the desired aims and may even be counterproductive in some cases:

- considering life-cycle assessments in the licensing of new products and processes – in the field of nanotechnology, for instance – in addition to the existing test criteria;

- prescribing absolute ceilings for the chemical industry's emissions of greenhouse gases (introduction of sectoral targets).

These prescribed absolute emission limits for the chemical industry should apply regardless of production volumes. In the EU framework the emissions-trading system could be adapted accordingly, and the climate targets, aligned with the German climate targets for 2020, could be tightened.

Sustainable chemical products

The following are major considerations relating to the further development of the REACH system:

- The candidate list of substances to be tested in connection with an authorisation requirement should be compiled and published more quickly because, as soon as a chemical is added to the candidate list as a Substance of Very High Concern (SVHC), its supplier incurs certain obligations regarding the provision of information to purchasers and consumers.

- There is a need to improve consumer information in accordance with uniform monitored standards and to provide publicly accessible information on the hazardous nature of substances, with due regard to the protection of trade secrets. To this end, for example, a database of household products could be established in Germany – and in the EU – of the kind that has been operating successfully in the United States for many years, tailored to the specific information needs of consumers.

- The REACH regime should be adapted to cover new types of substance, especially nanomaterials. Although REACH is suited in principle to the regulation of nanomaterials, there is a need to develop assessment criteria and test procedures that match the specific features of nanomaterials.

Some members of the Study Commission also want the following options to be examined, while others take the view that these options will not achieve the desired aims and may even be counterproductive in some cases:

- fuller consideration of combination effects of chemicals subject to the REACH regime, i.e. unwanted consequences arising from reactions of some substances on others;

- examining the feasibility of introducing an obligation to use safe chemicals (substitution obligation) if shortcomings should come to light during the implementation of the REACH which necessitate a higher degree of substitution;

- better fulfilment of the existing requirements laid down by the REACH Regulation and adoption of cost-covering REACH fee rates in order to remedy the implementation deficits resulting from the insufficient capacities of the competent authorities.

The members of the project group were unable to agree on the creation of white lists of low-risk or very low-risk substances in the REACH framework.

Communication on sustainability

- The trend towards sustainability reporting in the chemical industry should be reinforced, particularly among small and medium-sized chemical businesses, which need to catch up on the large companies in this respect. One conceivable step in this direction would be an initiative on the part of the Association of the German Chemical Industry (VCI), which should also advance the standardisation of sustainability reports within the industry.

- Efforts should be made to ensure that universities and other tertiary institutions incorporate aspects of sustainability into the curricula of chemistry and chemistry-related courses.

- Training for sustainability and responsible conduct are particularly relevant to the workforce in the chemical industry. As part of a staff-centred approach, companies should integrate issues of sustainable economic activity more fully into the initial and in-service training of their staff so that the relevant skills can be developed directly within the companies themselves.

- The chemical industry should continue to avail itself of voluntary undertakings as an instrument of communication on sustainability. What is important in this context is that the pledges should be verifiable and that there should be regular progress reports on their fulfilment. ‘Greenwashing’ on the part of the chemical industry must be avoided at all costs, because the trust that is lost in such cases is very difficult to restore.

- The state, for its part, is called upon to convey comprehensibly to the industry and the public the regulatory provisions that are designed to support sustainable development in the chemical industry.

2.3.4 Climate policy – prerequisites for a unilateral German/European model role

- Project Group 4 sees a key research requirement in a systematic review of the existing regulatory framework and its reconciliation with the listed criteria, including identification of the complex interactions between them. A recommendation will be made to the next Parliament to conduct a comprehensive in-depth examination and then undertake a systematic improvement of the regulatory framework, since a coherent, consistent and comprehensive overarching approach has so far been lacking, although some members of Project Group 4 actually prefer a multi-impetus approach. On the basis of the outcome of this process, German policy on the reduction of greenhouse gases in Germany and Europe should be increasingly Europeanised, although particular care will have to be taken in planning the transition.

- Even now, national measures or even regional measures in Europe should already be subject to the strict application of the subsidiarity principle and be consistent in the sense of possessing forward compatibility. The majority of the Study Commission believes that, for the sake of a coherent and dependable regulatory framework and in order to achieve cost-efficient measures to combat climate change, it is imperative that the regulatory framework should be shaped on the basis of a top-down approach. Some members of Project Group 4, on the other hand, emphasise the success of a multi-level European policy on climate change, in which provinces and federal states or city councils and local authorities have been driving forces of innovation, and express the view that this policy should be further reinforced.

Necessary action on the EU emissions-trading system

- Options should be examined for dealing with the current very low price levels for CO_2 certificates, which are jeopardising both the leading role of the EU emissions-trading system in reducing CO_2 emissions and, in some circumstances, acceptance of the system. The following options are discussed: (1) temporary restriction of the supply of certificates (backloading), (2) permanent restriction of the supply of certificates (set-aside), and (3) early action to set an ambitious target for the next trading period from 2020 to 2030 with the possibility of banking.

- An explicit target for 2020-2030 should be set at an early date so as to give market participants the confidence to plan ahead.

- When the target is being set for 2020-2030, consideration should be given to the volatile CO_2 price trends that have been experienced in past years.

- The scope for consistent linking of the EU emissions-trading system with those in other parts of the world should be explored.

- There is a need to examine whether and to what extent the Clean Development Mechanism (CDM) should remain part of the EU emissions-trading system and what other options there are to achieve the same objectives in global climate negotiations, for example through linking. The CDM, moreover, must be reassessed, since developing countries have now pledged their own reduction contributions under the Cancún and Durban agreement. The CDM should be recognised only if these pledged reductions are exceeded, as measures would otherwise be counted twice.

Some of the action that is needed to develop support for renewables

- There should be a sustained cap on the costs arising from the levy imposed by the Renewable Energy Sources Act. To this end a review of the individual targets for specific technologies is indispensable, as is a review of the exemption rules, particularly in the light of EU legislation on state aid.

- Energy from renewable sources should be integrated more fully into the electricity market, and this should include the assumption of greater responsibility for the system and a greater share of market risk.

- A European renewables target for 2030 should be set and institutionally established. This target should also be coordinated with the chosen CO_2 target.

- Measures should be taken with a view to deriving more benefit from European synergy, particularly within the largely bottleneck-free continental market in Central and Western Europe.

- Bilateral mechanisms should be used in the short term and be accompanied by the long-term creation of an EU-wide harmonised support mechanism.

Some of the action that is needed to develop the European internal electricity market

- There is a need to clarify issues regarding the geographical shape of electricity wholesale markets with regard to cross-border marketing areas, market coupling, market splitting and cross-border redispatch.

- There is a need to clarify whether capacity mechanisms are required and, if so, what types of mechanism.

- Flexibility options within the electricity supply system, especially short-term options, should be extended, particularly through improved attention to the demand side.

- The development of the grid should be accelerated, including the establishment of cross-border connections. Particular consideration should be given to further mergers of grid operators.

- There should be further European harmonisation of national grid regulation.

Action needed on reduction strategies in areas not covered by the EU emissions-trading system

- There is a need to develop effective and efficient reduction strategies in the areas of heat generation and transport as well as clearly formulated EU sectoral targets. One logical option would be to extend EU emissions trading to additional sectors. Such an extension would presumably entail the conversion of EU emissions trading from a 'downstream' system, in which emitters are taxed, into an 'upstream' system, in which producers and importers of fossil fuels would be taxable.

Action needed on the use of the 'double dividend'

- Consideration should be given, as a matter of priority, to the use of the additional income accruing to the public treasury through the EU emissions-trading system and of the VAT receipts, part of which represents additional revenue, arising from the levies established by the Renewable Energy Sources Act and the Combined Heat and Power Act.

Other required action going beyond the approach outlined above

- measures on technology transfer and the protection of patents;

- measures designed to increase transparency for consumers;

- examination of border tax adjustments and alternative options;

- creation of a European cross-border regulatory structure for carbon capture and storage;

- review of the effectiveness of the current adjustment of tenancy law in overcoming the user-investor dilemma;

- tax incentives for the reconditioning of building stock.

In a dissenting opinion, the opposition groups briefly set out their own – sometimes different – priorities on climate change and refer to the need for a multi-level and multi-impetus approach (see the dissenting opinion on chapter E 5 in the full report).

2.4 The world of work, consumption patterns and lifestyles

2.4.1 Lifestyles

The following recommendations for action were made on the subject of lifestyles:

Nutrition

Numerous recommendations on sustainable lifestyles relate to nutrition.

- A Round Table should be established with a view to inducing all relevant players to make a voluntary commitment to halving the volume of food waste by 2025.
- Changes in dietary habits in industrialised countries, particularly lowering the percentage of animal products in diets (lower meat consumption), could be effective not only in helping to combat climate change but also in improving public health. Examples of options in this area are better consumer education, establishment of a regulatory framework and factoring consequential damage to health and the environment into prices. The full report contains a dissenting opinion from the FDP group on nutrition education.
- Measures should be taken to promote dietary practices based on seasonal and fairly traded products through intensive education campaigns on the part of the Federal Ministry of Food, Agriculture and Consumer Protection (BMELV), especially in schools.
- Achievement of the aim set by the national action plan of the BMELV for healthy eating, entitled *In Form 2008* of ensuring, in cooperation with the business community, that advertisers refrain from targeting children below the age of twelve.

Housing

Sustainable housing can mean more than the achievement of high efficiency standards.

- The use of space should be transformed by means of spatial planning, for example through the creation of mixed residential and business zones, cycle-track networks, car-free zones and shared spaces.
- Communal forms of housing should be supported. Where people want to live in a social community, municipal property and housing policies should assist them. Besides fostering new intergenerational networks, such communities can help to reverse the trend towards more individual housing and increasingly large dwellings.

Mobility

The following measures of infrastructure policy will facilitate sustainable lifestyles in the realm of mobility:

- A switch to more efficient and non-motorised means of locomotion should be encouraged, such as walking and cycling to cover short distances. In this way, streets in town and city centres can be made more bicycle-friendly, as has happened in Copenhagen, for example.
- The instrument of speed limits can lead to more coexistence on public roads where space is limited. Slower-moving private cars need less space, freeing up some roadway for the benefit of cyclists. At the same time, road safety is enhanced and pollution reduced.
- New business models and infrastructure should be supported. The appeal of new everyday options such as car-sharing should be enhanced through the creation of appropriate basic conditions, for instance through the use of communication technology in route planning to obtain proposals for the optimum use of the available means of transport. Car manufacturers should regard themselves to an increasing extent as providers of mobility services in the wider sense.

- Special traffic lanes should be introduced for vehicles with green propulsion systems, which would increase the appeal of such vehicles, especially at peak periods. The Road Traffic Regulations would have to be amended to include a new road sign for these special lanes.

- An addition could be made to section 12 of the Road Traffic Regulations to make parking easier for car sharers by providing for the designation of special parking spaces for car-sharing vehicles.

- Car-sharing could be given the same status as local public transport through the establishment of traffic-calmed zones with vehicular access restricted to local public transport and car-sharing vehicles.

- New rules should be introduced for the employees' lump-sum travel allowance and the low taxation of official vehicles used for private purposes, due consideration being given to living conditions in rural areas.

Support for innovations made by civil society

At the present time there are numerous innovators – social groups and individuals – who have already begun to make the cultural transition to sustainable lifestyles. They should be supported by means of measures such as those outlined below:

- Energy-supply cooperatives, producer-consumer associations, housing cooperatives and credit unions are characterised by a strong sense of community and by the participatory and co-determination rights of their members. Red tape created by fiscal legislation and audit requirements should be reduced in order to assist this type of enterprise. In future such bodies should be granted equal access to business-support measures and start-up programmes.

- The regionalisation of economic processes can benefit not only the environment but also people and their social relations. Products transported over long distances inevitably leave a larger environmental footprint because of the additional traffic they generate. As far as the social dimension is concerned, regional value-added chains are based on a different level of familiarity. Particularly in the domain of food supply, the mutual familiarity between producers and consumers in the regional context seems to be gaining in importance once more. Money should not be an obstacle to healthy eating, which is why other accompanying measures are needed in addition to education about healthy diets. For example, the supply of foodstuffs to public facilities such as kindergartens and schools, for example, should also be switched to products sourced within the local region.

- The concept of a 'solidarity economy' encompasses numerous forms of social interaction such as repair exchanges, barter circles, urban gardening schemes and communal user pools based on the principle of use without ownership, not to mention neighbourly assistance in the traditional sense. They are intrinsically tailored to local conditions and therefore support regional economic processes. These forms of economic relations merit political support, because they foster sustainable lifestyles.

Sustainable marketing

Marketing should cover the entire life cycle of a product, from the idea to its realisation to product design, manufacture, sale, use and finally, in the most sustainable economies, recycling of the used product.

- The idea of the producer-consumer or 'prosumer' is very close to the principle of demand-driven production. Consumers act as producers in the sense that their specific wishes, for example for goods that can be repaired or parts that can be exchanged, receive more attention from companies prior to production process. As a result, new long-term customer loyalty can also be secured. In this context issues are raised about the enforceability of particular technical standards, for example by means of top-runner programmes. The full report contains a dissenting opinion on the critical assessment of advertising (see the dissenting opinion after section F 4.5 of the full report).

2.4.2 Work

On the subject of work, the following stylised typology was devised:

On the basis of an ‘agreement to disagree’, Project Group 5 constructed three idealised models of ‘viable’ work that might exist in future. They represent idealised interpretations of three *potential* forms of the future working world.

- Type I: increase in paid employment,
- Type II: development of paid employment on the basis of good jobs and, in individual instances, shorter working hours,
- Type III: gearing the entire employment structure to future needs.

At the heart of this *potential* typology is the *impetus* behind each of the types:

- Type I: desire to respond to demographic change, globalisation and skills shortage,
- Type II: desire for full employment in high-quality jobs,
- Type III: desire for social redistribution and elimination of gender-specific role assignment and undervaluing.

Each type is idealised, in that emphasis is placed on the unique characteristics associated with it. The overall framework is provided by reference to the subject of education and training on the macroeconomic level and health protection at the microeconomic level.

Other macro- and microeconomic options cannot necessarily be assigned to a particular type but may apply to more than one type, depending on the form they take. The closer an option is located to the description of a particular type of working world within the diagram, the more *conceivably* that option could be linked to that type. Conversely, the further the indicated options are located from a particular type description, the more difficult it is to make a logical connection between the two.

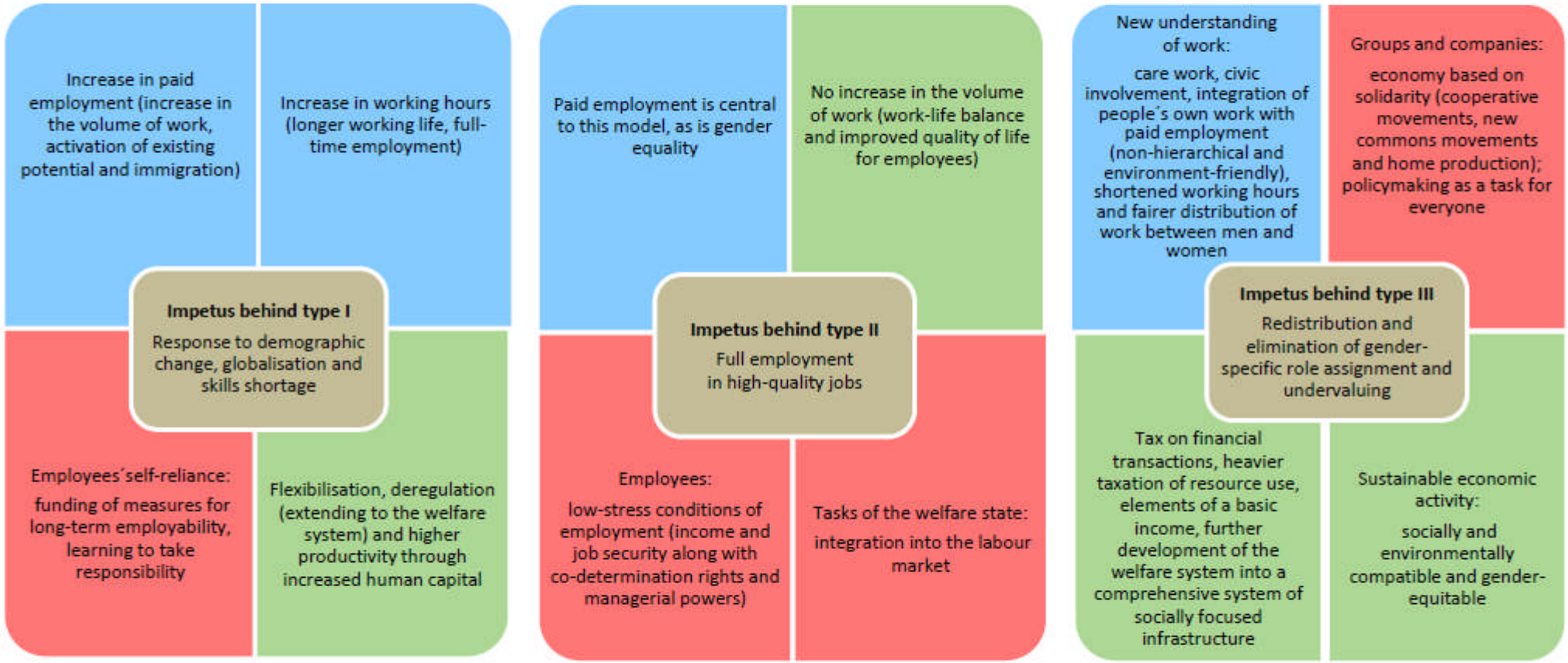
Because of the diversity of conceptions of a future working life, there are a whole range of ways in which the future world of work could be shaped, and the diagram does not purport to be an exhaustive wish list.

Possible classification of future types of working life (three types), with macroeconomic and microeconomic multi-type options

Macroeconomic multi-type options

Education and training

Citizen´s income (see F 3.4.3.9)	Vocational education and training (see F 3.4.3.1)	Increasing female employment (see F 3.4.3.3)	Policy on collective wage bargaining (see F 3.4.3.6)	Equal opportunities in the labour market (see F 3.4.3.6)	Minimum wage (see F 3.4.3.5)	Gender-equitable and family-friendly working world (see F 3.4.3.4)	Full-time employment with shortened hours (see F 3.4.3.8)	Part-time employment (see F 3.4.3.8)	Basic income (see F 3.4.3.10)



Corporate human-resources policies (see F 3.4.4.7)	Employee shareholding (see F 3.4.4.6)	Training of older employees (see F 3.4.4.8)	Quality of paid employment (see F 3.4.4.9)	Leadership and corporate culture (see F 3.4.4.2)	Employee co-determination (see F 3.4.4.4)	Paid employment and family and care duties (see F 3.4.4 1)

Health protection

Microeconomic options (all work types)

Working hours | Addressees | Various options

2.4.3 Sustainable consumption

The options identified by Project Group 5 under the heading of sustainable consumption may be described as follows:

- If the opportunities for sustainable consumption are to be grasped, the essential basic conditions for sustainable consumption must be created, and consumers must be assisted in taking the sustainable consumption opportunities that come their way as a result of these conditions. They should be enabled to question their consumption habits, and it should be made easier for them to adopt and maintain a sustainable lifestyle.

- Individual consumers, associations and initiatives have grappled with the issue of consumption. These debates should be re-explored and enriched. Good examples – and, in some cases, standards and rules – should be developed. Divergent lifestyles should be respected and, at the same time, lifestyles should be adopted which are compatible with the principles of social, environmental and economic sustainability.

- Education for sustainable development should be reinforced and should be firmly established in educational establishments. Federal institutions with an educational function can tailor their course content to the need for education in sustainable development. In the federal education system the *Länder* should integrate education for sustainable development into curricula.

- Information on products and processes should be transparent, reliant and credible. To this end, the credibility of quality marks and certificates should be increased, and corporate sustainability reporting should be improved. 'Greenwashing' should be prevented through the enshrinement in the law on fair trading practices of provisions regarding the binding nature of sustainability claims made in advertisements.

- Companies can lay the foundations for the development of sustainable products and broaden the scope for product repair and recycling by conducting life-cycle analyses, taking more shared responsibility for products and optimising their product development.

- The state sets basic conditions for sustainable consumption by creating rules and standards and providing infrastructure. At the same time, it is a consumer in its own right. It should take account of the effects of spatial planning and legislation so as to promote sustainable consumption. It must systematically apply all of the sustainability criteria in its procurement decisions.

3 General part

3.1 Working methods and the deliberation process

From the beginning, the Study Commission agreed that its deliberations should be as transparent as possible. Accordingly, it decided to meet in open session as a matter of principle and to make its key discussion documents publicly accessible. Besides its regular meetings, the Study Commission issued invitations to an academic symposium, which took place on 21 March 2012. The Commission's deliberations, moreover, were transmitted on the parliamentary television channel and recorded. Following many of its meeting, the Commission offered public chat sessions, in which members of the Commission answered people's questions online. In addition, from its 15th meeting onwards, the Commission set up a blog page on which interested individuals could post comments on the items discussed at the meeting. The publicly accessible documents can be found on the Bundestag website via the following link:

http://www.bundestag.de/bundestag/gremien/enquete/wachstum/index.jsp

3.1.1 Commission meetings, hearings and other events

The constituent meeting of the Study Commission on Growth, Well-being and Quality of Life took place on 17 January 2011 with Professor Norbert Lammert, President of the Bundestag, in the chair. From then until the adoption of its concluding report on 15 April 2013, the Commission held a total of 31 meetings. On the recommendation of the group spokespersons, it decided right at the start of its work that meetings of the full Commission would be held in public, while the working meetings of the appointed project groups would be held *in camera*. The only non-public plenary meeting of the Commission was the closed-door session held on 6 and 7 February 2011 to plan the work of the Commission, where the essential arrangements were concluded by the whole Study Commission for the agenda and structure of its deliberations.

Both at its plenary meetings and within the project groups, the Study Commission held numerous public hearings to which external experts were invited so that their additional knowledge could be brought to bear on the work of the Commission and the discussion process. The summaries of conducted hearings attached to the full report provide an overview of these consultations.

Besides its regular diet of meetings, the Study Commission held an academic symposium on 21 March 2012, entitled *Wachstum, Wohlstand, Lebensqualität - ein neuer Kompass für Politik und Gesellschaft* ('Growth, Well-being and Quality of Life – a new Compass for Politics and Society'). The aim of this public event, held in the Paul Löbe Building of the Bundestag in Berlin, was to discuss aspects of the Commission's work in a broad forum of experts. Some 300 guests accepted the Commission's invitation and made lively contributions to the debates that followed the presentations and panel discussions.

The minutes of the public meetings and events have been made accessible to the public on the homepage of the Study Commission (see above).

3.1.2 Project groups

At its closed-door session, the Study Commission on Growth, Well-being and Quality of Life agreed to prepare the material for its deliberations in project groups in accordance with the structure of the mandate prescribed by the appointing decision (Bundestag printed paper 17/3853). The project groups were appointed to deal with the following thematic areas:

- Project Group 1: the importance attached to growth in the economy and society
  Chaired by Claudia Bögel, MdB, until June 2012, thereafter by Florian Bernschneider, MdB
- Project Group 2: development of a holistic indicator of well-being and progress
  Chaired by Stefanie Vogelsang, MdB
- Project Group 3: severing the links between growth, resource use and technical progress (decoupling) – possibilities and limits
  Chaired by Dr Hermann E. Ott, MdB
- Project Group 4: sustainability through regulatory policies
  Chaired by Edelgard Bulmahn, MdB

- Project Group 5: The world of work, consumption patterns and lifestyles
  Chaired by Sabine Leidig, MdB

In accordance with Rules 55 and 12 of the Bundestag Rules of Procedure, the project groups were constituted as subcommittees, which meant that the eleven members of each project group had to reflect the relative strengths of the parliamentary groups in the Bundestag. Accordingly, the CDU/CSU group provided four members for each project group, the SPD three members, the FDP group two members and the groups of The Left Party and Alliance 90/The Greens one each, nominated from the circle of the parliamentary and expert members. In addition, substitute members were assigned to the project groups, though these were not subject to any numerical limits.

The project groups met regularly on the mornings of the days on which plenary meetings of the Study Commission were scheduled. They held 136 meetings in total. Besides their consultation meetings, the project groups also conducted hearings of experts on the various issues within their remit. Unlike the Study Commission's hearings, these were not open to the public.

At the start of its activity, the Study Commission had agreed to stagger the starting dates for the project groups' deliberations of the project groups. The discussion of the importance attached to growth in the economy and society by Project Group 1 and the examination of the possibilities and limits of decoupling by Project Group 3 were regarded as fundamental to the discussion of the other topics and were therefore timed to start at the beginning of the Commission's mandate. The target date for the conclusion of these groups' deliberations was set at the end of 2011. The work of Project Group 4 on sustainability through regulatory policy and of Project Group 5 on The world of work, consumption patterns and lifestyles would then begin and would build on the findings of groups 1 and 3. The work of the project group on the development of a holistic indicator of well-being and progress (Project Group 2) was scheduled to last throughout the period of the Study Commission's mandate so that it could incorporate the findings of the other project groups into the development of an indicator of well-being and progress.

The timetable for the work of the project groups, which was drafted before the Study Commission began its deliberations, was ambitious, because the Bundestag was already well into its 17th electoral term and the Commission had to complete its work by the end of that term. It soon emerged that the items on the agenda of the spearheading project groups required more detailed discussion than expected, which effectively meant that Project Group 4 on sustainability through regulatory policy and Project Group 5 on The world of work, consumption patterns and lifestyles could not begin their meetings and their substantive deliberations until March 2012.

Following the completion of their substantive discussions, the project groups submitted their findings in writing to the Study Commission, which incorporated them into the final report after formally adopting them at a plenary meeting. Accordingly, the data set out in these contributions to the final report and the legal positions they describe can only reflect the situation that obtained at the time when the project groups' reports were submitted.

3.1.3 Full-length and summary expert reports

Besides its internal deliberations and the consultation of external experts, the Study Commission on Growth, Well-being and Quality of Life also commissioned various reports from academic experts on the subjects covered by its mandate. The subjects of the full-length and summary reports and the names of the commissioned experts are listed in chapter H 5 of the concluding report.

3.1.4 Plenary discussion by the Bundestag

Besides the plenary debate held in the Bundestag on the appointment of the Study Commission on Growth, Well-being and Quality of Life, the spokespersons of the parliamentary groups decided to request an extra plenary debate prior to the scheduled presentation of the concluding report; the purpose of this debate would be to deliver an initial verdict on the joint deliberations about a year after the appointment of the Study Commission. The debate took place at the 178th sitting on 10 May 2012 and is documented in volume 17/178, pages 21172 A *et seq.*, of the record of plenary proceedings.

3.1.5 Composition of the Study Commission

The Study Commission comprised 17 Members of the Bundestag and 17 experts. One substitute member was appointed for each of the parliamentary members. The 17 expert members belonged to neither the Bundestag nor the Federal Government. Like the parliamentary members, they were nominated by the political groups represented in the Bundestag and appointed to the Commission by the President of the Bundestag. The right to nominate expert members was determined by the relative strengths of the groups within the Commission. The CDU/CSU group nominated six expert members, the SPD group four, the FDP group three and the groups of The Left Party and Alliance 90/The Greens two each. Annex 2 contains a summary list of the Commission members.

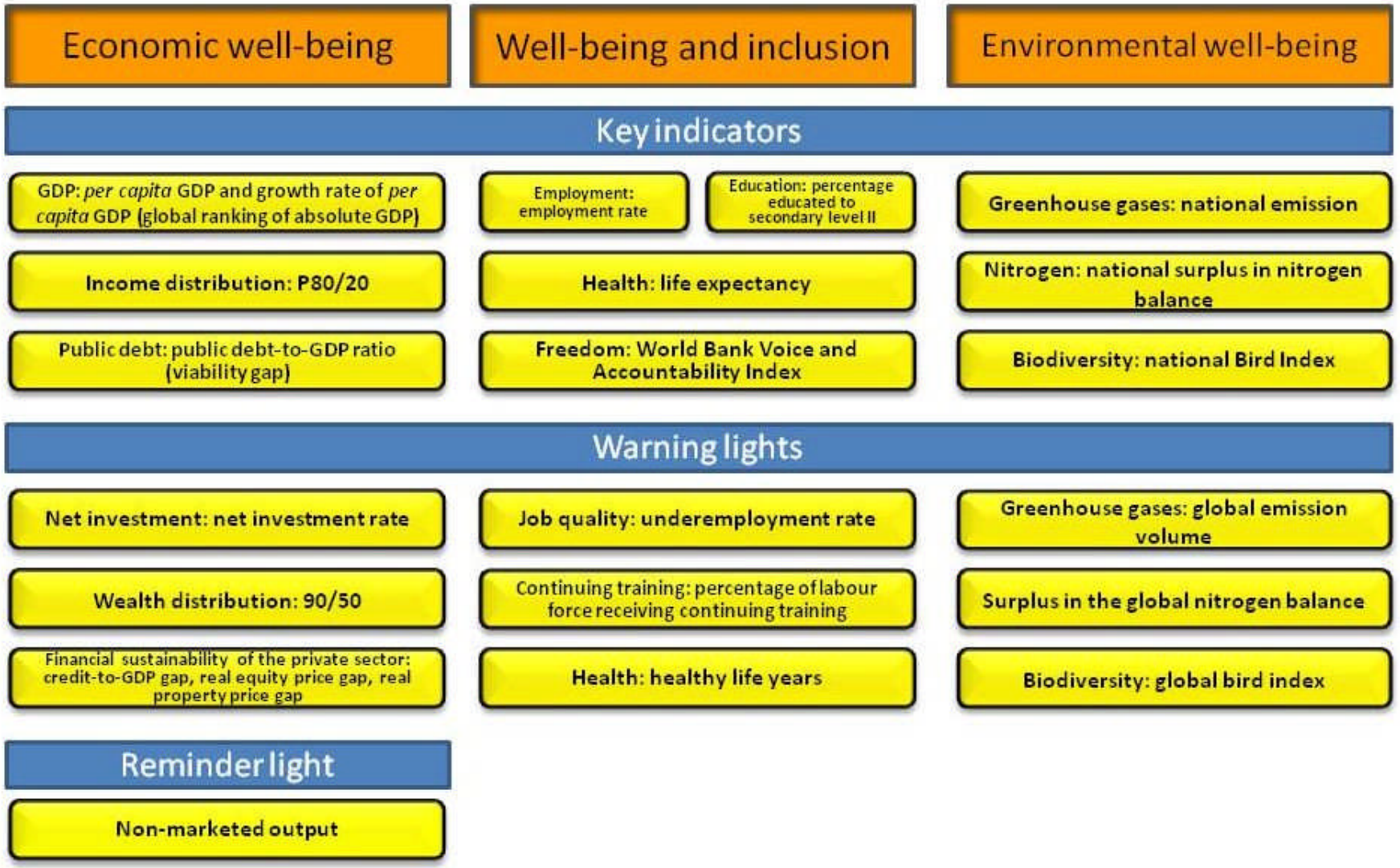
At the constituent meeting on 17 January 2011, Daniela Kolbe (SPD), the Member for Leipzig, was elected to chair the Commission. Dr Matthias Zimmer, from the CDU/CSU group, was appointed vice-chair. The parliamentary groups chose the following Members as their spokespersons: Dr Georg Nüsslein, (CDU/CSU), Peter Friedrich (SPD), who was succeeded by Edelgard Bulmahn in July 2011, Claudia Bögel (FDP), succeeded in April 2012 by Florian Bernschneider, Ulla Lötzer (The Left Party) and Kerstin Andreae (Alliance 90/The Greens), who was succeeded by Dr Hermann E. Ott in April 2012.

3.2 Organisational and administrative support for the work of the Commission

The Bundestag Administration provided the Study Commission on Growth, Well-being and Quality of Life with a secretariat, whose task was to conduct the organisational and administrative business of the Commission and to carry out research for the Commission members. Particular importance was attached to the organisation of the five project groups and research assistance for them. Besides coordinating the content of contributions to the final report, this support also involved formulating initial working drafts and monitoring the development of their content in the course of the project groups' deliberations.

In addition, the activity of the Study Commission was monitored and supported by staff of the parliamentary groups, Members of Parliament and the expert members of the Commission.

A list of the staff involved in the work of the Commission is annexed to the concluding report in chapter H.4.



Annex 1: Details of the set of indicators with warning lights.

Annex 2: Composition of the Commission

Chair: Daniela Kolbe (Leipzig), MdB
Vice-Chair: Dr Matthias Zimmer, MdB

Parliamentary group	Full members	Substitute members
CDU		
Members:	Bilger, Steffen	Göppel, Josef
	Heider, Dr Matthias	Klamt, Ewa
	Middelberg, Dr Mathias	Klimke, Jürgen
	Nüsslein, Dr Georg	Linnemann, Dr Carsten
	Vogelsang, Stefanie	Murmann, Dr Philipp
	Zimmer, Dr Matthias	Schön, Nadine (Sankt Wendel)
SPD		
Members:	Arndt-Brauer, Ingrid	Gross, Michael Peter
	Bulmahn, Edelgard	(from March 2012)
	(spokeswoman from July 2010)	Heil, Hubertus (Peine)
	Friedrich, Peter	Högl, Dr Eva
	(spokesman until April 2011)	(until February 2012)
	Kaczmarek, Oliver	Kelber, Ulrich
	(until January 2011)	Schaaf, Anton
	Kolbe, Daniela (Leipzig)	
	Wolff, Waltraud (Wolmirstedt)	
	(from February 2011)	
FDP		
Members:	**Bernschneider**, Florian	Kauch, Michael
	(spokesman from April 2012)	Sänger, Björn (until January 2012)
	Bögel, Claudia (until June 2012;	Simmling, Werner
	spokeswoman until March 2012)	(from February 2012)
	Meierhofer, Horst (from July 2012)	Vogel, Johannes (Lüdenscheid)
	Skudelny, Judith	

Parliamentary group	Full members	Substitute members
The Left Party		
Members:	Leidig, Sabine	Birkwald, Matthias W.
	Lötzer, Ulla	(from March 2012)
		Bulling-Schröter, Eva
		Schlecht, Michael
		(until February 2012)
Alliance 90/The Greens		
Members:	**Andreae,** Kerstin	Gambke, Dr Thomas
	(spokeswoman until February 2012)	(until February 2012)
	Gambke, Dr Thomas	Walter-Rosenheimer, Beate
	(from March 2012)	(from March 2012)
	Ott, Dr Hermann E.	Wilms, Dr Valerie
	(spokesman from April 2012)	

The surnames of parliamentary group spokespersons are in bold type.

In the case of constituency Members, the constituency is indicated in brackets after the Member's name.

Expert members

Bettzüge, Professor Marc Oliver

Bracht, Georg van

Brand, Professor Ulrich

Buchner, Professor *emeritus* Herbert (until April 2011)

Carstensen, Professor Kai

Enderlein, Professor Henrik (until June 2012)

Habisch, Professor André

Hassel, Professor Anke (from November 2012)

Hexel, Dietmar

Hölz, Professor Hanns Michael

Jänicke, Professor Martin

Jochimsen, Professor Beate (from May 2011)

Miegel, Professor Meinhard

Müller, Michael

Paqué, Professor Karl-Heinz

Reuter, Dr Norbert

Schmidt, Professor Christoph

Schneidewind, Professor Uwe

Unger, Professor Brigitte (from July 2012 until November 2012)

Wagner, Professor Gert